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BİNGÖL UNIVERSITY

SOCIAL SCIENCES INSTITUTE

BUSINESS ADMINISTRATION DEPARTMENT

**THE ELECTRONIC COMMERCE EFFECTS ON
IMPROVING ACCOUNTING INFORMATION SYSTEM
(ERBİL AS A CASE STUDY)**

PREPARED BY

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T.C.

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SCIENTIFIC ETHICS

The thesis project [**THE ELECTRONIC COMMERCE EFFECTS ON IMPROVING ACCOUNTING INFORMATION SYSTEM – ERBIL AS A CASE STUDY**], as soon as the results of the judicial work have been concluded, the scientific ethics and academics rules have been met, I have acquired all the information in the project on scientific ethics and tradition.

I undertake, in this work, that I have properly or indirectly done all the work I have done in the course of preparing the project, and that the works I have used are of the kind shown on the source.

JAWAD SADQ SAEED

18/01/2018

THESIS ACCEPTANCE AND APPROVAL

**BINGOL UNIVERSITY
SOCIAL SCIENCES INSTITUTE**

This work entitled [THE ELECTRONIC COMMERCE EFFECTS ON IMPROVING ACCOUNTING INFORMATION SYSTEM – ERBIL AS A CASE STUDY], prepared by [JAWAD SADQ SAEED], was found to be successful as a result of the thesis defense examination held on the date of [18/01/2018] and accepted by our juror as the Master's Degree in the Department of Business Administration.

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CONFIRMATION

The jury determined in the (18 /01 / 2018) have accepted this thesis. Session of the Board of Directors of the Institute of Social Sciences of Bingöl University.

Director of the Institute

Doç. Dr. Yaşar BAŞ

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Researcher

JAWAD SADQ SAEED

ÖZET

Bingöl Üniversitesi Sosyal Bilimler Enstitüsü Yüksek Lisans Tez Özeti

TezinBaşlığı: Muhasebe Bilgi Sistemini Geliştirmeye Elektronik Ticaret Etkisi (Erbil Örneği)
TezinYazarı: Jawad Sadq Saeed
Danışman: ass. Yrd. Doç. Dr. Mehmet Güven
AnabilimDalı: İşletme
BilimDalı:
Kabul Tarihi:
<p>Bu çalışma, Irak'ın Kürdistan bölgesi olan Erbil'deki şirketlerde muhasebe bilgi sisteminin geliştirilmesine elektronik ticaret etkisinin önemini belirlemek amacıyla yapılmıştır. Buna ek olarak, e-ticaret ve AIS kavramının tanımlanmasını, elektronik ticaretin doğasını ve AIS'in çalışması ile olan ilişkisini açıklamak, muhasebe ile ilgili e-ticaret ilişkisi ve elektronik ticaretin muhasebe üzerindeki etkilerini belirlemek için alseeks'leri bilgi sistemi. Bir anket tasarlanmış ve muhasebe yöneticilerine, ticaret müdürlerine, finansal yöneticilere, muhasebecilere, finansal denetçi firmalara dağıtılmıştır. Araştırmada hedeflenen kitle 110 kişidir. Gerekli verileri topladıktan sonra, araştırmacı, kullanılan verileri ve diğer istatistiksel yöntemleri tanımlayıcı yöntemlerle analiz etmek için kullanmıştır (SPSS). Çalışmanın sonuçları, e-ticaret etkilerinin, AIS gelişimine katkıda bulunduğunu ve elektronik ticaretin kullanılmasının, AIS bileşenleri ve özellikleri üzerinde etkili olduğunu ve e-ticaret ile muhasebe bilgi sistemi arasında olumlu bir ilişki bulunduğunu ortaya koymuştur.</p> <p>Son olarak, e- ticaret karar vericiler için uygun bir muhasebe bilgisi sağlar ve verileri doğru bir şekilde sınıflandırmaya yardımcı olur. Genel olarak, kullanım üzerinde büyük bir etkisi vardır.</p>
Anahtar kelimeler: muhasebe, elektronik ticaret, bilgi, sistem, muhasebe bilgi sistemi.

ABSTRACT

Bingol university, institute of social sciences, Abstract of Master's thesis

Title of the thesis: The Electronic Commerce Effects On Improving Accounting Information System – Erbil as a Case Study
Author: jawad sadq saeed
Supervisor: Ass. Prof. Dr. Mehmet Guven
Department: Business Administration
Sub-field:
Date:
<p>This study aimed at determining the importance of the electronic commerce effect on improving accounting information system in the companies of Erbil, Kurdistan region of Iraq. Additionally, it also seeks to achieve identification of the concept of e-commerce and AIS, Clarifying the nature of electronic commerce and its relationship to the work of the AIS, the relation e-commerce on accounting and to determine the effects of electronic commerce on the accounting information system. that A questionnaire was designed and distributed to accounting managers, commercial managers, financial managers, accountant, financial auditor in the companies. The targeted population size for the study is 110 employees. After collecting the necessary data, the researcher used (SPSS) for analyzing the collected data and other statistical methods through descriptive methods. The results of the study showed that using e-commerce effects contributes to the development AIS, and the using of Electronic commerce has effects on the components and properties AIS and a positive relationship between e-commerce and accounting information system is found to be available.</p> <p>Finally, e-commerce provides an appropriate accounting information for the decision makers and it helps to categorize data accurately. In general, there is a large impact on the usage.</p>
Key words: accounting, electronic commerce, information, system, accounting information system.

LIST OF ABBREVIATION

AICPA	American Institute of Certified Public Accountants
AIS	Accounting information system
B2B	Business to Business
B2C	Business to Consumer
B2G	Business to Government
C2B	Consumer to Business
C2C	Consumer to Consumer
C2G	Consumer to Government
CICA	Canadian Institute of Chartered Accountants
EC	Electronic Commerce
FRS	Financial Reporting System
G2B	Government to Business
G2C	Government to Consumer
G2G	Government to Government
GLS	General Ledger System
IT	Information Technology
LAN	Limited Area Networks
MIS	Management Information Systems
MRS	Management Reporting System
SPSS	Statistical Package for the Social Sciences
TPS	Transaction Processing System
WWW	World Wide Web

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INTRODUCTION

E-commerce application software was originally industrialized in the first half of the seventies with the production of electronic fund transfer. Nevertheless, due to the lack of necessary tools, the extent of those software were limited only to large companies which dealt with financial purposes and a small number of audacious small business.

E-commerce is a term that used for business through communication information systems. In the first half of this century, the world witnessed a revolution in the field of information technology, information technology has become on indispensable factor for achieving success for establishments in all sectors. E-commerce is abbreviated for Electronic commerce.

Its function is the transition of financial and other commerce related information using information technology and telecommunications, e-commerce as a “process of buying, selling, transferring, or exchanging of products, services & information via computer networks, including the Internet.

Accounting information systems as a system that, stores, records, collects and handles data to provide information to decision-makers through using advanced technology or simple system or in among of the two. Around the word is becoming more competitive due to the information technology growth.

Every day the demand for companies to improve themselves and try to keep up with the rapid changes while continuing to assurance the quality of their product and services is increasing.

So, the world is becoming more competitive with all of these computers and other electronic devices which ease the communication between the company and the customers. A types of networks such as internet are used as our mean information exchange. Information technology changes have forced different companies to redefine their existing commerce activities to moderate themselves.

Therefore, companies need a perfect information system which enables efficient and effective use of information to gain competitive advantages.

Thus, an existing information system contributed to the development of business, also a lot of e-commerce for having a proper information system that in these days in the world was used dramatically. Some countries do not use such systems like Kurdistan region Iraq.

The research that I prepared is a serious study, which effects e-commerce to improve the accounting information system and its progress in the companies, which have a good information system.

This thesis contains five chapters. The first chapter describes the general framework of the research that describes problem, objective, importance, hypothesis and literature review.

The second chapter describes the general concept of electronic commerce and accounting information system. The third chapter describes the electronic commerce of the accounting information system that effects on the AIS. The fourth chapter then describes methodology and data analysis.

The finally chapter entails conclusions and recommendations. The first section of it deals with the concluding remarks of the overall in-depth conclusion while the second one primarily recommends some further studies to be conducted in the area with different participants and context.

CHAPTER ONE

RESEARCH METHODOLOGY

1.1. RESEARCH PROBLEM

It is clear from many years ago until now many changes have occurred in the commerce and in particular electronic commerce that many companies in the world are using this type of trade, also in many countries had made significant progress using the internet that many companies in the world are using this method but methods are too limited in Kurdistan regional Iraq. It is obvious from the foregoing that the Electronic commerce greatly influenced Accounting information system (AIS).

So, the problem of the study is limited to the following points:

1. Study of the relationship between electronic commerce and accounting information system.
2. Study of the effect of electronic commerce on the accounting information system.
3. Study of the effect e-commerce on the accounting information system development.

1.2. RESEARCH OBJECTIVES

This research seeks to achieve the following objectives:

1. Identification of the concept e-commerce and AIS.
2. Clarifying the relationship of electronic commerce with the accounting.
3. Clarifying the nature of electronic commerce and its relationship to the work of the AIS.
4. Determine the effects of electronic commerce on the accounting information system.

1.3. RESEARCH IMPORTANCE

The importance of this study includes electronic commerce on one hand and the importance of accounting information systems of the other hand and help to explain electronic commerce and its effect on improving accounting information system. Furthermore, this study aims to show the challenges facing electronic commerce with the application in the accounting field as it greatly affect the application of the new accounting information system in companies.

1.4. RESEARCH HYPOTHESIS

The First Main Hypotheses

There is a positive relationship between e-commerce and AIS

The three sub- hypothesis that derives from the First Main Hypotheses are:

- ✓ There is a positive relationship between e-commerce and development of accounting information system.
- ✓ There is a positive relationship between e-commerce and properties of accounting information system.
- ✓ There is a positive relationship between e-commerce and components of accounting information system.

The Second Main Hypotheses

There is statistically a significant effect of e-commerce on the accounting information system.

The three sub- hypothesis that derives from the second Main Hypotheses are:

- ✓ There is statistically a significant effect of e-commerce on the development of accounting information system.
- ✓ There is statistically a significant effect of electronic commerce on properties of accounting information systems.
- ✓ There is statistically a significant effect of electronic commerce on components of accounting information systems.

1.5. LITERATURE REVIEW

Hussein & others have provided the research in 2006 about **(The impact of e-commerce on the quality of accounting information)**, the research goal to identify the accounting dimensions of electronic commerce and the extent of their impact on the quality of accounting information. In order to achieve the objective of the study, it was assumed that e-commerce contributes to raising the quality of accounting information by supporting and enhancing some of the characteristics of accounting information. In order to reach the objective and hypothesis of the study, a study was conducted using the descriptive and analytical approach.

1. The quality of accounting information has a significant impact on the accuracy of decisions taken by users of this information, as well as in raising the level of effectiveness of the knowledge property of this user, and reducing the uncertainty.
2. Electronic commerce is one of the most recent changes in the business world, which has had an impact on accounting work (Hussein & others, 2006).

SÜRMEŒ provided a research in the 2007 by the name of **(The relationship between the historical evolution of accounting information system and its applications with information technology)** and he focused on developments in information technology, which had many effects on both individual and social life and business, also had an important impact on AIS and accounting applications in terms of each aspect Such as concept, scope and process.

The research concluded that the transfer of data and information to journals, books and current accounts at the same time as soon as they are entered into accounting receipts, enable quick preparation of financial statements and other reports as needed, and also change the role of business accounting in the design of management systems due to the low workload in accounting In functions such as registration, classification and reporting (SÜRMEŒ, 2007).

(Taweel) provided a research in the name of **(Accounting Technology in Developing Countries)** in 2001 and he chose a Syria as a Case Study. The goal of the research is to clarify the relationship between the elements of situational theory and the adoption of automated accounting information systems in order to facilitate the transfer and adoption of information technology and to fill the social science gap

in information technology in developing countries and exceptional in Arab countries in. The research concluded the following results:

Cultural factors have a significant impact on the adoption of information technology, and they can be categorized into variables and variables. Variables can be used to facilitate IT adoption. The research presented a theoretical model that included the factors of the Economic, social and cultural environment that affect the transfer of information technology in the Arab countries. The search showed that the legal requirements significantly control the development of the accounting systems, which are designed according to the tax objectives and legal requirements of the state.

The search also concluded that the majority of Syrian companies in the public and private sectors suffer from confusion in the use of computers in accounting operations. It also found that there was a significant reduction in the efficiency of accountants in the use, generally design and development of accounting systems and particular in information technology (Taweel, 2001).

AL-Refaee, 2012 studied **The Effect Of E-Commerce on the Development of the Accounting Information Systems in the Islamic Banks**. A questionnaire to heads to accounting departments, financial managers, and accountants, in Islamic banks was designed and distributed. Then analyzing the results of the questionnaire by using (SPSS), and other statistical methods through descriptive methods.

The results of the study showed that using e-commerce effects the design of accounting information system, it as well as concluded that using ecommerce provides appropriate accounting information about available substances at the right time, at a credible and stable degree for decision makers, however, using electronic commerce deals with providing the necessary protection in getting access to information through password and username to prevent unauthorized entrances, and following means for operation complete such as digital signatures. In general, there is a large effect on the usage of e-commerce on accounting information system (AL-Refaee, 2012).

Ahmad, 2013 presented a research in the name (**Effect of E-Commerce on Accounting Information System, Computerization Process and Cost Productivity**) the importance of effective determination comes from the need to recognize e-commerce and AIS as one the greatest developments in the world of business, e-commerce affects: reliability of AIS on the firm, the operational Performance, cost of reduction, customer services. This paper aims, to study that effect and analyze its dimensions in the Jordan market as a case study. To achieve the objectives of the paper a questionnaire was designed and distributed to the Society of the Jordanian firms. The data analysis found out that the firms in Jordan have positive impact towards information technology they agree on the benefit of e-commerce and what customers can get from it. The statistical analysis Showed that e-commerce had a positive effect on the accounting information system and that e-commerce has a significant statistical relationship with accounting information system itself, AIS development, cost reduction aspect in the AIS of the bank, the aspect of improving the operational performance of the bank's AIS and finally with the customer service (Ahmad, 2013).

CHAPTER TWO

THE GENERAL CONCEPT OF ELECTRONIC COMMERCE AND ACCOUNTING INFORMATION SYSTEM

2.1. GENERAL CONCEPT OF E-COMMERCE

2.1.1. Definition of E-commerce & A brief history of E-commerce

2.1.1.1. Definition of E-Commerce

The e-commerce definitions vary. The literature of the past decade leads to the production of many publications, therefore, the definitions of e-commerce increased accordingly. One of the first definitions argues that it is selling and buying products through internet. The very essence of the term after few years expanded as “exchange of information” as well as “buying and selling of goods” (Chong 2008, p.470).

Some researchers provide a more thorough definition as “process of buying, selling, transferring, or exchanging of products, services, and/or information via computer networks, including the Internet”. Furthermore, it infers constant stream of information, prior as well as after the sales process (Rainer and Cegielski, 2011, p.201).

It was also suggested that the e-commerce is a “modern business methodology that addresses the needs of organization, merchants, and consumers to cut costs while improving the quality of goods and services and increasing the speed of service delivery by using internet”(Ritendra, 2007, p.1).

To put it into a broader sense, e-commerce can be noted by using networks of computer to enhance and ease the buying and selling goods performance via such networks. The pros of electronic commerce can be summarized as follows; first, obtaining share of market. Second, increase profit. Third, customer service improvement, lastly: fast delivering of products.

In addition, it could be suggested that e-commerce refers to the use of the internet as well as other networks to exchange the transfers of goods and other business processes between personal and company purposes (Watson, et al., 2007, p. 8).

2.1.1.2. A brief History of E-Commerce

E-commerce application software was originally industrialized in the first half of the seventies with the production of electronic fund transfer. Nevertheless, due to the lack of necessary tools, the extent of those software were limited only to large companies which dealt with financial purposes and a small number of audacious small business.

After this innovation, it was time to the birth of electronic interchange data which extended from monetary transaction to the more advanced sorts of process of transactions, therefore, it resulted the enlargement of taking part from firms to retailers, manufacturers, and a number of various kinds of business processes. (Turban & Others, 2002, P.14) argued that “More new EC applications followed, ranging from stock trading to travel reservation systems. As the Internet became more commercialized and users flocked to participate in the World Wide Web (WWW) in the early 1990s, the term electronic commerce was coined and EC applications rapidly expanded’.

Clearly, this process has been existed since the second half of the nineties and obtained the momentum development in 2000 in business world and communication service. It was just till the major blow and media outlets began spreading the word and resulted with the phrase “dot com”, therefore, the whole industry after this major occurrence decided to name it an end.

Surprisingly, there was an improvement in the first half of 2000 while the focus turned from business to customer. Furthermore, (Schneider, 2011, p.9) argues that “immediately after the turnaround of the crisis those companies that survived were able to get back on their feet to quickly get recognized again by showing an amazing net profits, while at the same time when economy was booming they were getting global (Turban & Others, 2002, p. 14) argue that there are two major reasons which led to the rapid development of electronic commerce; the improvement of protocols, software and new networks in one hand, and the escalation of competition and the rest of business pressures in the other hand.

2.1.2. The importance, benefit and limitation of E-commerce

2.1.2.1. The importance of electronic commerce

One of the most vital advantages of electronic commerce is the way it provides cutting-edge access to global markets in a very rapid and successful method with lower cost, as well as helping both sellers and buyers to win over the hinders that come along in terms of timing, and treating the customers with best manner during the necessary time needed. Furthermore, this application is also considered to be a part of modernized world since it helps firms to use the most modern manufacturing methods that software could provide. Further, it is also a gateway to exports goods overseas and expands the trade between nations which hindered the trade for centuries.

Where to take shape in that it is the way a distinct and unprecedented access to world markets, all in one time and with less expenditure, helping buyers and sellers to overcome the barriers of distance, access to distant markets, diverse and multiple, as it also helps overcome the barriers of time, and dealing with customers over the time, which is an application of a real idea of globalization, as it helps companies to follow modern manufacturing systems that are computer aided, as well as a gateway to export, where it passes all the barriers that limit the start of trade between nations (Chircu, et al., 2000,p. 59-80).

Through, E-commerce, operating efficiency of the business firm will definitely improve and which in turn strengthen the value and service given to customers and provide a competitive edge over competitors. These improvements may result in more effective performance. The direct benefit accrue to an organization on practicing e-commerce are better quality, greater customer satisfaction, better decision making, low cost, high speed and real time interaction. More specifically e-commerce enables executing of information relating to the transaction between two or more using interconnected networks.

From the business perspective with less time spent during each transaction, more transaction can be achieved on the same day. As for the consumer, they will save up more time during their transaction. Because of this, E-commerce steps in and

replaced the traditional commerce method where a single transaction can cost both parties a lot of valuable time (Barry, et al., 2002, p. 316-326).

E-commerce is the most cost effective compared to traditional commerce method.

This is due to the fact where through e-commerce, the cost for the middleperson to sell their products can be saved and diverted top another aspect of their business. For e-commerce, the total overheads needed to run the business is significantly much less compared to the traditional commerce method. The reason due to that is where most of the cost can be reduced in E- commerce.

To both the consumers and business, connectivity plays an important part as it is the key factor determining the whole business. From the business point of view, E-commerce provides better connectivity for its potential customer as their respective website can be accessed virtually from anywhere through the Internet (CBCSS, CU. "E- , 2014, p.10).

This way, more potential customers can get in touch with the company's business and thus, eliminating the limits of geographical location. From the customer's standpoint, E-commerce is much more convenient as they can browse through a whole directories of catalogues without any hassle, compare prices between products, buying from another country and on top of that, they can do it while at home or at work, without any necessity to move a single inch from their chair. Besides that, for both consumers and business, E-commerce proves to be more convenient as online trading has less red tape compared to traditional commerce method. Ecommerce itself gives a boost to the global market. In short, if without any major obstacles, E-commerce will certainly continue to mature in the global; market and eventually, it will become an essential business plan for a company in order to survive and stay competitive in the ever changing market.

E-commerce business have numerous advantages over off line retail locations and catalog operators, consumers browsing online stores can easily search to find exactly what they are looking for while shopping and can easily comparison shop with just a few clicks of the mouse. Even the smallest online retail sites can sell products and turn a profit with a very simple online presence. Web tracking

technology allows e-commerce sites to closely track customer preferences and deliver highly individualized marketing to their entire customer base (CBCSS, CU., 2014, p.10).

2.1.2.2. The benefit of E-commerce

Electronic commerce has numerous vital benefits, such as: (A: Benefits to consumer, B: Benefits to society. C: Benefits to organizations):

A: Benefits to consumer:

1. Electronic commerce makes it possible for the customers to buy or make transactions all day long from the entire globe.
2. It eases the act of competition in the markets which is a main reason in essential discounts.
3. It facilitates the customer with cheap goods and services through providing thousands of sources to buy.
4. In the first world countries, such as in the case of the UK, electronic commerce permits fast delivery of the products.
5. Lastly, it allows the customer to work together online with other customers around commercial ideas and experience.

B: Benefits to society:

1. The globe through internet networks which is a gateway to exchange 1. One of the most beneficial advantages of E-commerce is that it can provide individuals to work while they are at home and shop without being away from their homes, clearly, this result in avoiding air pollution as well as having lesser traffic jam.
2. Due to its competitive attitude, it permits the good to be sold out less expensive than actual price, so that even the less fortunate people can afford to buy them which results in raising standards of living.
3. Another benefit of the E-commerce is that it enriches the product availability for the third world countries and villages to reach services and products that cannot be available so easily.

4. More importantly, it helps in facilitating the delivery of governmental service, like education, health care, and improving the quality of live standards (Rayport, 2002).

C: Benefits to organizations:

According to (Boamah and Kwaku, 2012), the benefits of e-commerce to organizations and companies are the following:

1. Global reach: Locating customers and/suppliers worldwide, at reasonable cost and fast.
2. Cost reduction: Lower cost of information processing, storage, and distribution.
3. Supply chain improvement: Reduce delays, inventories and cost.
4. Customization/personalization: Make it consumers' wish, fast and at reasonable cost.
5. Ability to innovate, use new business models: Facilitate innovation and enable unique Business models.
6. Rapid time-to-market and increased speed: Expedite processes; higher speed and productivity.
7. Help small and medium enterprises to compete: E-commerce may help small companies to compete against large ones by using specialized business models (Boamah & Kwaku, p. 2012).

2.1.2.3. The limitations of E-commerce

E-commerce limitations could be categorized as follows: (Technical limitations & Non-technical limitations)

A) The technical limitations of E-Commerce, as follows:

- ✓ Security risks and lack of communication and standards protocols are predictable.
- ✓ Unfrosted wire communication is another limitation of e-commerce.
- ✓ Due to the technology development, the electronic tools are developing accordingly.
- ✓ It is problematic to combine the electronic software and internet with the pre-existing databases and applications.
- ✓ Vendors are required to have their own web servers and other organization networks.

✓ In terms of software compatibility, some software may find it difficult to cope with all hardware and operating system of an organization.

✓ By the time, these limitations can be overcome, or at least be lessened, with appropriate planning (Abbad, et al., 2011, p. 280-291).

B) Non-technical Limitations

Lack of Awareness: Many limitations concerning non-technical one that decrease the speed of growing electronic commerce, can be in the following reasons:

Non-existence of awareness: Changing the attitudes of the merchants is one of the biggest obstacles facing the spread of e-commerce in the market, i.e. they need to be tuned in with the information technology. Additionally, strategic business projections as well as optimism are also highly required. India, for instance, if electronic commerce is considered to be an alternative means for conduction business, a new awareness is gravely needed. Clearly, it needs to change the attitudes towards more of America-like one (Anil K., 2001, p.23-29).

Lack of Infrastructure: This aspect also can provide a sense of certainty when provided as needed. While economic commerces begins to flow in due to business, inrustructure would grow accordingly.

Lack of Confidence: The customers and public do not understand how the new way of e-commerce in selling and buying goods work, in other words, the available online digital world.

Lack of True Strength: The existence on the web merely will not continuously guarantee the triumph of e- commerce. Having a website or dot com is no longer an innovation and simply setting up a website will not help businesses increase turnover.

Lack of Skills and Expertise: The lack of trained and skilled personnel impedes the growth of IT related electronic commerce implementation. The use of the network for commerce needs a complicated introduction of servers, navigation software and knowledge of web design, hosting, promotion and many more skills. It requires understanding many new things. Many Indian companies are not prepared to aproach electronic commerce (Anil K., 2001, p. 23-29).

2.1.3. Types of E-commerce models

There are nine key models of e-commerce. Even though, we focus the majority in the electronic commerce between companies (B2B) and the electronic commerce between companies (B2C) (both in the private sector of electronic commerce), we begin by exploring each model of e-commerce (Haag & Cummings, 2010, P.129-148).

1. **Business to Business (B2B):** Business-to-business e-commerce covers a wide range of intercompany businesses, including wholesale trade operations, and acquisitions of services, resources, technology, parts and components manufactured by the company and capital equipment. It also includes some types of financial transactions between companies, such as insurance, commercial loans, bonds, securities and other financial resources (Dan, Cudjoe, 2014, P. 138).

2. **Business to Consumer (B2C):** It happens when you sell products or services mainly to individual customers. You are definitely familiar with this e-commerce model. Those who have ordered books on Amazon (www.amazon.com), purchased CDs from Circuit City's online (www.circuitcity.com), ordered movies from Netflix (www.netflix.com) joined the B2C e-commerce. B2C e-commerce is drawing attention in popular media. B2C e-commerce is a model that promoted the initial growth of e-commerce in the 1990s. B2C e-commerce is an extremely urgent environment regardless of products and services (Haag & Cummings, 2010).

3. **Consumer to Business (C2B):** It happens when an individual trades a product or service to a business. C2B electronic commerce model is a real reversal of B2C electronic commerce model. In B2C e-commerce business model, customer backing needs business-driven source. It is upturned on C2B. Consumer-driven supply and business-driven needs. Numerous people inadvertently collected websites such as Pinceline.com (www.pinceline.com) in the C2B category. At Pinceline.com, you could set the price as a consumer ticket, hotel room, etc., but still provide the demand (as a consumer) that airlines and hotels still offer to supply me at (Haag & Cummings, 2010).

4. **Consumer to Consumer (C2C):** It happens when people sell their goods or services to diverse individuals. C2C electronic Commerce is usually done through intermediaries such as eBay. E-Bay is a mixture of B2C electronic Commerce sites

and C2C electronic Commerce sites. This is B2C's e-commerce website. Due to its sales service, you can exchange the auction of the merchandises. (If you are a seller rather than a buyer, you only pay for eBay.) And, it's actually an intermediary that supports participating in the C2C ecommerce business model. That is, using eBay to sell products or services to other consumers and using e-Bay to purchase goods or services from other consumers (Jones, et al., 2008, p.88-95).

5. Business to Government (B2G): This happens while the company trades yields or services to state agencies. For example, Lockheed Martin generates about 80% of its revenue by providing products and services to the U.S. Department of Defense. Lockheed Martin sells tactical aircraft; aircraft research equipment, commercial satellites, government satellites, strategic missiles, naval systems and information technology equipment and services to the United States federal government (Nemat, Rania., 2011, p. 100-104).

6. Electronic Government: Is the use of digital technologies to transform government operations in order to improve efficiency, effectiveness, and service delivery.

7. Consumer to Government (C2G): Surfaces when an individual sells products or services to a government agency. This is very similar to the C2B e-commerce business model, but the purchasing partner is not a business, but a government agency. C2G market is very small, incredible. Although we can obtain royalty payments from government agencies for photos and videos you post to Fotolia, most government agencies do not participate in the purchase of products or services from individuals. For example, to sell your products and services to the federal government of the United States, you must be registered as a formal business within the CCR (Central Contractors Registration) system (www.ccr.gov) (Haag & Cummings, 2010, p129-148).

8. Government to Business (G2B): It happens when government agencies sell products and services to businesses. There are several good examples of this e-commerce business model. One is Small Business Administration (SBA, www.sba.gov). In addition to providing small business loans (which generate interest), SBA offers services in many areas such as warranty guarantee, disaster relief, and ombudsman. Most of these services are free, but certainly those involving

financial backing and guarantees require a variety of fees and fees (Carter & Belanger, 2004, p. 10).

9. Government to Consumer (G2C): It refers to electronic commerce between governments and its citizens or customers, including payment of taxes, vehicle registration, information and services, etc. This specific electronic commerce model is often a request and supply concept. Once again, offer is the first partner and question is the second partner. For example, in the B2C model, Amazon supplies books, movies and other products, and as a consumer, you should ask. In the G2C model, governments often bid the chance to cooperate automatically with citizens to attain efficiency. Paying your tax is an example of that. You can submit electronic taxes, receive electronic refunds or pay extra taxes. In the case of this site, the concept of supply and demand is not particularly applied (Belanger, et al., 2002, p. 245-270).

10. Government to Government (G2G): It refers to electronic trading activities conducted within the government of the country. (Sometimes referring to multi-country e-commerce activities, including providing foreign aid).

11. M-Commerce: It is a general term that explains the ability to use wirelessly connected technologies for centrally located information and application software. In mobile computing, everything is about wireless connectivity. For example, e-commerce (e-commerce) commerce describes electronic commerce that is performed via a wireless device such as a mobile phone or notebook, music purchases and downloads, stock purchases and sales, weather forecasts, read-mail and host other features (Haag & Cummings, 2010, p.128).

Table 2.1 Nine Major E-Commerce Business Model

	BUSINESS	CONSUMER	GOVERNMENT
BUSINESS	B2B	C2B	G2B
CONSUMER	B2C	C2C	G2C
GOVERNMENT	B2G	C2G	G2G

Source: (Haag &, Cummings, 2010, P.128)

2.1.4. Challenges of E-Commerce Applications

Despite the interests of e-commerce technologies to the construction industry, there are many challenges in its applications. In many instances, the potential of e-commerce technologies have yet been fully and properly utilized, as many companies are simply utilizing various technologies to automate existing proceedings without analyzing the company's objectives and realistic needs. In addition, significant people and culture issues need to be addressed to overcome resistance to change and achieve radical revision (Elliman & Orange 2003, p.15-26).

2.1.4.1. Information management systems

In the form of emails, a websites and Internet service, e-commerce technology advances, has created a wealth of data that can lead to information overload. The sharing and transferring of information governs supply chain participant's activities, which serves as a core function of the supply chain (Cheng et al., 2001, p. 68-78).

Be that as it may, due to fragmentation of information from various communication channels, effective logistics of information management to have the purposeful information accessible when required have become laborious and time-consuming activities, and inefficient management of information have lessened the benefits of using e-commerce technology. In addition, the potentially enormous data collected from both internal and external communication points involve significant information management leader in security, filtering, consistency checking, data cleaning, storing, knowledge discovery, and knowledge integration, which resulted in

rather challenging for information management and knowledge integration (Badii & Sharif, 2003, p.145-155).

2.1.4.2. Organizational policies and management

The introduction of modern infrastructure such as e-commerce systems can affect all operations of organizations significantly, and this requires adaptation of a new underlying operation and management philosophy. This change affects core component of organizations, both management and employees, such as goals, technology, mission, policies, training, culture, vision, and business strategy.

The Implementation should be undertaken in a top-down hierarchical approach. Commencing from top management, further implementation must move to the middle management, then to lower management. Subsequently, change operation can be introduced to influence all the employees to support the new mindsets and the application of e-commerce technologies (Cheng & others, 2001, p.68-78).

2.1.4.3. Human resources and culture

An association may not possess the appropriate skills to manage new innovative technology, which may not be embedded with an underlying supportive culture. Organizational culture contributes a significant part in implementation of innovation that involves different professionals working together to meet the project objectives and enhance performance, which requires 'no-blame' culture to encourage people to experiment with new concepts (Ling, 2003, p. 635-649).

Furthermore, contribution by staff in task execution and management is crucial and their performance can significantly affect the success and failure of the organization.

When adapting e-commerce technologies, it needs careful and critical evaluations to decide the degree of progress which includes the internal efficiency of the business, budget, and availability of highly skilled people, market conditions, economic situation, and capability of internal staff, political systems, and regulations with external partners (Cheng et al., 2001).

2.1.4.4. Training, learning, and knowledge sharing

Training staffs can assist to improve resilience, trust, and pride of them, because without the commitment of staff, innovative technology cannot be aligned with the organization's goals and objectives (Cheng & others, 2001).

Knowledge sharing is recognized as a channel for industry to address its need for innovation and amended business performance. However, frequently, organizations rely heavily on people and assume that they will transfer their learning and experiences of other employees, which can make organizations vulnerable if and when there is a high staff turnover. People-based knowledge transferring system may not incur much cost commitment to organizations, but rather approach is considered ineffective, unproductive and expensive when compared with the loss of knowledge that is inevitable when liable staffs leaves the organization, resulting in possible difficulty in case of expansion (Kamara & others., 2002, p.53-67).

Further comments that current information and communication technology for example, learning archive can provide great value, but it is essential that employees have competent skills to fully utilize this application (Walker, 2004, p.26-29).

2.1.5. E-commerce drawbacks

There are also several drawbacks of e-commerce. For instance, issues of trust, market readiness, investment complementarities and technology standardization seem to be hindering the wide adoption of B2B e-commerce solutions (Golubova, 2012, p.17).

Technical: The technical limitations include the cost and hassle of developing and maintaining a website, insufficient telecommunications bandwidth and constantly changing software. Technical issues can arise during the entire e-commerce implementation process, from developing the content up to customer's complaints regarding the speed and visual attractiveness of the site. The small business owner should take into account the customer access limitations with regard to cable, wireless, and other connectivity options, as well as the fact that some potential customers still do not have convenient access to internet (Golubova, 2012, p.17).

Trust: A major issue with e-commerce is trust in web vendors that consumers have and the lack of trust which leads to deterrence of consumer adaption of e-commerce. A lack of trust in the technical and institutional environments surrounding the web can hinder e-commerce adoption. Trust is an important aspect of e-commerce, and more so when it comes to actually purchasing products than when it comes to using e-commerce as a means of obtaining information (Gefen, 2000, p. 725-737).

The author reveals that familiarity is another important aspect influencing e-commerce. This is an important finding, because it provides guidelines on how companies engaging in e-commerce can build potential customers' trust through increased familiarity with the company and its e-commerce procedures. (Kim et al., 2009) argue that trust and satisfaction are the main key factors for a successful e-commerce relationship.

Trust is an important factor to consider in e-commerce, since most transactions are consummated across large geographical distances. Thus, a consumer's belief concerning the online selling party is an important determinant of his or her willingness to make a transaction through the website. Solutions to enhance trust have been outlined by (McKnight et al., 2002) According to the scholars, if the target community is less experienced with the Internet, seals touting the security of the Internet and clear explanations of structural and technological safeguard may be used to promote institutional trust (McKnight et al., 2002, p. 334–359).

E-commerce readiness: E-commerce also means dealing with different cultures, languages, and legal systems around the world. Companies, as well as countries, should be able to adopt e-commerce and step into the electronic marketplace. Not all developing countries are yet ready for e-commerce. For example: (Molla and Licker, 2005) Said that in developing countries successful adoption of e-commerce strategy in an organization depends on its perceived e-readiness in e-commerce, managerial, organizational, and environmental contexts.

The low level of information and communications technology diffusion in an economy can also limit the level of e-commerce awareness, a factor taken for granted in the developed countries. In addition, in most developing countries, Internet use and e-commerce practices have yet to reach a critical mass for the network

externalities to take effect and encourage businesses to opt for e-commerce innovations. This means that firms should take into account that they cannot target all countries, because some countries are not yet ready for e-commerce (Molla and Licker, 2005, p.877-899).

2.1.6. E-commerce payment system

Various electronic payment systems have been developed to pay electronic goods on the internet. Internet EPS includes digital credit card transaction, digital wallet, digital payment system with cumulative balance, online savings payment, digital check and electronic billing system presentation and payment system (Laudon's, 2010, P.427).

2.1.6.1. Types of Electronic Payment Systems

Credit Card payment systems: Almost all online payments (90%) in the US use credit cards or are dependent on credit card systems. The company can also conclude a service that extends the function of the existing credit card payment system (Turban & Efraim, 2002, p. 4).

✓ **Digital wallets:** By eliminating the need to repeatedly enter the address and credit card information at each buyer's purchase, you can make more efficient purchases on the web. Digital wallet security automatically completes the customer's name, credit card number, and shipping information as used to save the owner's credit card and identity information and complete the purchase. Google Checkout is an example.

✓ **Micropayment systems:** It's been industrialized for buying less than \$ 10, including downloading individual items and music clips that are too small for traditional credit card transactions.

✓ **Accumulated balance digital payment systems:** Allow users to do small-scale settlements and purchases on the web and collect debit balances that have to be paid regularly on credit cards and phone bills. Examples of this are Valista's Payments Plus, used by AOL, Vodafone, NTT DoCoMo, Click Share, which is widely used in online newspapers and the publishing sector.

✓ **Online stored value payment systems:** Based on the value stored in the online digital account, consumers can pay online to sellers and other individuals

directly. Under online payment value payment systems such as Valista, there is a commercial platform. Others are focused on peer-to-peer payments such as PayPal. PayPal is owned by e-Bay and makes it possible for people to send money to vendors or individuals who are not set up to accept credit card payments (Laudon's, 2010, p.427).

✓ **Digital checking systems:** PayByCheck extends the functionality of existing check accounts and makes them available for online retail payments. Digital checks are handled much faster than traditional paper checks.

✓ **Electronic billing presentment and payment systems:** It is used to pay regular monthly invoices. Users can view invoices electronically and pay by electronic wire transfer from a bank or credit card account. These services inform buyers about expired accounts, current invoices and process payments. Some services like "Free Checking" can also collect bills from subscribers from multiple sources at the same time (Laudon's, 2010, p.427).

Table 2.2 "Examples of Electronic Payment Systems for E-Commerce"

Payment Description	System	Commercial Examples
Credit card payment systems	Protect information transmitted among users, merchant sites, and processing banks	Visa MasterCard American Express
Digital wallet	Software that stores credit card and other information to facilitate form completion and payment for goods on the Web	Google Checkout
Accumulated balance digital payment systems	Accumulates micropayment purchases as a debit balance that must be paid periodically on credit card or telephone bills	- Valista Payment Plus - Click share
Stored value payment systems	Enable consumers to make instant payment to merchants or individuals based on value stored in a digital signature	-PayPal, Valista
Digital checking	Provides electronic checks with a secure digital signature	- Pay By Check
Electronic billing presentment and payment systems	Support electronic payments for online and physical store purchases of goods or services after the purchase have taken place	- Yahoo! Bill Pay, Check Free

Score by (Laudon's, 2010, P.428)

2.1.6.2. Security for E-Payment Systems

How can I prevent the card number from intercepting the card number for this purpose through the network when using a credit card I purchase on the internet? If you contact the EC site with a purchase intent, how can you confirm that the site is a valid site? If a company sends an invoice to another company over the internet, how can the recipient confirm that the invoice has not been changed? How can you refuse this rejection if the customer later sends an e-check to your company and denies it later? These questions are examples of credit or distress problems that arise in electronic payment systems. A successful online security system can use these questions or similar questions (Turban & Others, 2002, P.586).

2.1.6.3. Issues for E-Commerce Systems

Internal accounting system for external systems such as customers and suppliers. As a result, business risk varies in part, depending on how well an e-commerce partner works to identify and manage risks in its IT system. In order to control these interdependence risks, business partners must ensure that they do electronic business after managing the risks of IT systems (Delone, & Mclean, 2004).

The use of electronic trading systems also subjects highly sensitive business data, programs, and hardware to potential interception or interception by external parties. To limit these exposures, companies use firewalls, encryption technologies, and digital signatures. De firewall beschermt gegevens, programma's en andere IT-bronnen tegen externe gebruikers die niet gemachtigd zijn om toegang tot het systeem te krijgen via een netwerk zoals internet. Een firewall is een hardware- en softwaresysteem dat de stroom van e-commerce controleert en controleert.

Digitale controle Geef elektronische controle met veilige digitale handtekening. PayByCheck Elektronische betaalpresentatie en betalingssysteem Na aankoop van online en fysieke winkelaankopen van goederen of diensten - Yahoo! Bill Pay, controleert u externe gebruikers, verleent u toegang aan geautoriseerde gebruikers en verleent u toegang aan onbevoegde gebruikers Door alle netwerkverbindingen te channelen via controle die de toegang weigert en geautoriseerde gebruikers naar het gevraagde programma of de vereiste gegevens stuurt (Delone, & Mclean, 2004, p. 31-47).

2.1.6.4. Encryption techniques

Protect the security of electronic communications when information is sent and stored. Computerized encryption alters the default message or database into an encrypted copy and uses the decryption tool for the recipient of the electronic message or user of the encrypted database. Requires the message or data to be decrypted. Public key cryptography techniques are often used, one key (public key) is used to encode the message and secret key is used to decode the message.

The public key is distributed to all authorized e-commerce users. The private key is distributed only to internal users who are authorized to decode the message. The auditor must understand the nature of the firewall and encryption control so that the firewall and encryption control are properly implemented and verified. Insufficient firewalls can increase the chance of unauthorized changes to software and data. Therefore, the jury members tested the controls around the use of the firewall and used the automated application controls to maximize the assessed control risks (Arens & others, 2012, P. 388).

2.2. GENERAL CONCEPT OF ACCOUNTING INFORMATION SYSTEM

2.2.1. The concept of information system

Information: Information is data that is processed to have an important meaning. This includes a process that is used to generate information, including collected data, and then subject them to the conversion process to create information. Examples of information include sales forecasts and financial statements (Hardcastle, 2008, p. 6).

Information: is a data evaluated for a specific purpose. (Patakar, 1999, p. 24).

Howevers, (Bhunja, 2006, p. 427) defined information as an intangible thing, “involving either the telling of something or that which was being told”.

System: System A group of components that are interconnected and connected to the surrounding environment to attain the purpose of the system, and function as one group. Definition by analytical approach as a group of each independent component (Schoderbk, Charles et al., 1980, p. 12).

A system is a group of two or more interconnected components or subsystems serving a common purpose. Some systems are spontaneous, others are artificial. Natural systems range from atoms that are electron, proton and neutron systems to the universe, which is a system of galaxies, stars, planets. All life forms, plants and animals are examples of the natural world system. Artificial systems are artificial. These systems include all social systems for information systems. (Hall & Bennett, 2011, p.5).

The system can be defined as “a set of interconnected components. Such a whole: the collection has a specific purpose. Changing one of the components results in changes in other parts” (Curtis & Cobham, D., 2008, p. 14). System Model: Most systems can be described with the model in Figure 2.1. The input is System and output are generated by processes in the system. In many cases, there may be interim storage and control over the function of the system.

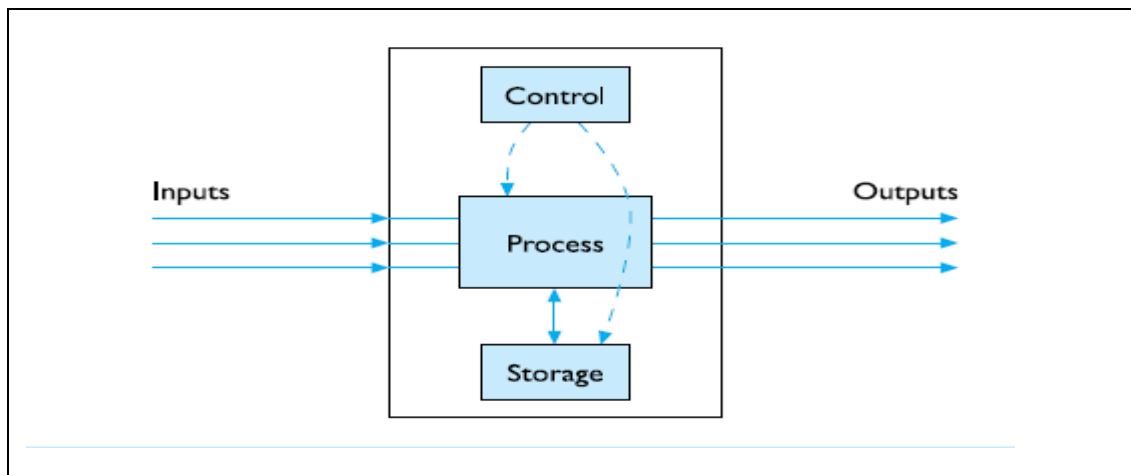


Figure 2.1 a general model of a system

Score by (Curtis, G., & Cobham, D.,2008,p.15)

Information system: Information system: setting up and maintaining technical means for control and communication within the organization. Long is looking for an automated accounting system that keeps track of both financial information and customer information (Needles,et al., 2013, p. 805).

Information systems are a series of interconnected subsystems that work together to gather, process, and store, transform and distribute information for planning, decision making and management. The use of computers in information

systems can improve the efficiency of information collection, processing, storage, conversion and distribution.(Lim, 2013, p. 93-106). Each organization must match the information system to the needs of the user. Therefore, the goals of specific information systems may differ from one company to another. However, three basic goals are the same for all systems.

First: Supports management stewardship function. Stewardship is the management's responsibility to manage the assets of the company well. Information systems provide information about using resources to external users through traditional financial statements and other mandatory reports. Internally, management receives information about management responsibilities from various responsibility reports.

second: Supports management decision making. The information system provides the manager with the necessary information to take responsibility for making decisions.

Third: Supporting the daily activities of the company. The information system provides information to the operator in support of the efficient and effective emission of daily operations. (Hall & Bennett, 2011, p. 14).

2.2.2. Definition, Type, objective and advantage of AIS

The description of Definition, Type, objective and advantage of accounting information system as follows:

2.2.2.1. Definition of AIS

The accounting information system is considered an important organizational mechanism that is important for the effectiveness of decision management and control in an organization. (Marshal and Romney, 2015).

Furthermore, an accounting information system is a collection of data and processing procedures for creating information required for users (Simkin, Mark G., et al., 2014, p. 5).

Is a system that collects, records, stores and processes data to provide information to policy makers using simple systems or advanced technologies, or between them during the accounting information system (Romney & Steinbart, 2012,

p. 6). Was defined. AIS is responsible for the collection, storage and processing of financial and accounting data used for internal control decisions, including non-financial transactions that directly affect the processing of financial transactions.

2.2.2.2. Types of AIS

Accounting information system is composed of three major subsystems:

1. Transaction Processing System (TPS): TPS is responsible for supporting daily business operations or transactions. These transactions can be grouped together in three transaction cycles: the revenue cycle, the expenditure cycle and the conversion cycle.

2. General Ledger System and Financial Reporting System (GLS/FRS): The GLS/FRS are two closely related systems, with the first one dedicated to summarization of transaction cycle activity and the second one to the measurement and reporting of the status of financial resources, generally outputted in the form of financial statements or tax returns to external entities.

3. The Management Reporting System (MRS): MRS, usually in the scope of Management Information Systems (MIS), offers internal management with special purpose financial reports and information needed for decision-making such as budgets, variance reports, and responsibility reports (Belfo & Others, 2013, p. 536-546).

2.2.2.3. Objective of AIS

Accounting information system objectives as follows:

✓ Internal control, including the protection of the money and other property of the organization, periodic collection and payment of the corresponding amount, inefficiency by employees of the organization, deterrence and detection of waste and misconduct.

✓ Registration of transactions and events that affect the financial situation of the organization and the measurement of financial data by processing according to consistent rules.

✓ Provide information for planning and decision making to the management team.

✓ Report financial information to real estate, investors and other stakeholders. (Lee, 1983, p1-2).

Another author also gives his contribution in accounting system objectives. (Ijiri, 1975) in addressing the question of what an accounting system should do identifies 'accountability' and 'information usefulness' as the two main broad objectives that any accounting system should achieve.

further, he states that accountability has clearly been the social and organizational backbone of accounting for centuries. However, (Lim, 2013, p. 93-106) allows accounting systems that should achieve the basic objectives of the information system.

The first objective is to calculate the cost-benefit principle or the cost-benefit ratio. Financial information is not free and other companies issue millions of dollars each year to collect and organize financial information to include them in the financial statements. According to this principle, the cost of providing financial information to financial statements is not more important than the advantage that provides information to users. If a company plans to improve IT systems, the principle of cost benefit must be considered.

The second goal is to protect the assets of the entity, to ensure the reliability of the data and to minimize the probability of waste, theft and fraud. This is also called the rule principle.

The third objective is to harmonize with the organizational and human factors of the company. This is also called the compatibility principle.

Finally, it is to be able to cope with the increase in trade volume and the change of organization (also called the principle of flexibility) (Lim, 2013, p 93-106).

2.2.2.4. Advantage of AIS

According to the several researchers, AIS have a lot of benefits to any company and corporation as follow: (Advantages of AIS, According to some researchers) AIS has many advantages for all companies and companies as follows.

Good cooperation: Something is always linked to a specific environment, exists, develops third party logistics companies in the supply chain and fulfills the role of a bridge. Third party logistics operations as separate entities exist on the market, but other companies still need to maintain a close relationship.

In addition, in conventional corporate organization mode, business operations are implemented and implemented based on features, which necessarily results in a lack of coordination between the parents, which is an "island of information". The new system actually records, reflects economic activity, does not require the accountant to pay attention to the preformat system, with the result that duplication of information collection and mistakes is avoided, the accountant no longer, although limited to the accounting department, Participating in business management activities to coordinate other departments, record and analyze accounting information (Severin et al., 2011, p. 37-78).

To meet the needs of multi-users: As a result of changes in the environment, the purpose of using accounting information has been expanded; there are general business management, all external investment institutions, government agencies, intermediaries, etc. There are accountants and accountants. Traditional accounting information systems can only generate financial statements and accounting information given to financial executive agencies, reducing the purpose of use.

Check later and check in advance: The account has the function of monitoring and managing the company's economic activity. And you can only perform the inspection after the traditional manual account and computer accounting system for "accounting", you could not avoid the error. The new accounting information system accepts real-time processing, standard cost integration, approval process management, budget management, etc. Good so that employees change from passive to active to manage their activities based on default budget, check real-time, check, identify issues timely, correct deviations, feed It will be later, in advance and at the same time (Salehi, et al.,2010, p.189).

2.2.3. Importance and role of AIS

2.2.3.1. Importance of AIS

In general, the information system is the entire associated component that works together to collect, store and disseminate data for planning, control, coordination, analysis and decision making. Meanwhile, AIS is the full related component that is combined to convert information, raw data or regular data into financial data for the purpose of collecting it and reporting to decision makers.

The accounting information system created in business is directly related to the organization culture, the level of strategic planning and the information technology of this particular company. We can obtain healthier information about the financial structure of companies that have built good accounting information systems. The important functions that the accounting information system plays in the company are the collection, capture and scheduling of data about activities and transactions. Process the data and convert it to information that should be used to make decisions about decisions, applications, and management. It is necessary to carry out the necessary controls to protect assets (Nicolaou, 2000, p. 91-105).

Accounting information plays an important role in the management of business activities. During the past decade, there was an intensive process of implementing AIS in the world. These systems are implemented in large-scale industries and small-scale trading companies. Later, the implementation of AIS began with other companies and government agencies. Implementation of AIS is a very expensive investment project for most companies. In practice, however, AIS is actually implemented and usually determined on the basis of ads and related suggestions. (Flynn, 1992) found that only 20% of the information system was successfully used and that other installation effects were neutral or negative. These arguments indicate how important it is to evaluate the effectiveness of AIS.

(Flynn, 1992) the effectiveness of AIS can provide management information in support of decisions in the successful management of business activities.(Gelinas, 1990) Consider the effectiveness of AIS as a measure of success in achieving the stated goals. The success of AIS implementation can be advantageously applied to areas that are of great importance for the organization and can be defined as widely used by one or more satisfied users and improving performance performance. Based

on the authors of the research, it is concluded that the effectiveness of AIS can be considered as a successful use of the system to ensure users' needs. The effectiveness of AIS can be evaluated using one or more models. By using some models, the reliability of the evaluation has improved.

2.2.3.2. Role of accounting information system

The most significant part of the accounting information system is to capture the financial transactions of the business activities, the financial and information report of the organization more quickly, for the management evaluation performed by the auditor's input. The accounting information system also plays a central role in providing support to management in making timely and efficient decision making. The accounting information system is made on a server or web site that acts as a centralized database system with financial information of the organization contained therein, which allows management to immediately know the summary of the company's financial data.

Accountants play a vital part in economic development. Without expertise to collect and process accountancy information, the company cannot identify profitability and costs, measure profitability of the product, evaluate business performance, plan the future of the organization. I cannot. With an accounting information system, management can make business easier and take immediate business decisions. (Khudir, 2016, p 128).

Also, (AWOSEJO, OJ, et al., 2013) The role of the accounting information system is a system that performs the function of collecting, processing, classifying and reporting financial events. Provide inventory data and purpose to store information to make decisions, and also provide daily and weekly financial reporting. In this survey, the success of the accounting information system is aimed at improving profitability, quality of work, product flow improvement, flexibility, multifunctionality, willingness to use software applications, problem solving ability of employees, productivity, and production. We have the reduced sexual costs and ultimately emphasized the integration of suppliers. All these references make it unique and beneficial to use accounting information systems (AWOSEJO, others., 2013, p. 142).

2.2.4. Characteristics and components of AIS

The description of Characteristics and components of accounting information system as follows:

2.2.4.1. The characteristics of good accounting information as follows

Effectiveness: This refers to accounting information being relevant and pertinent to the customers' process as well as being delivered in a timely, correct, consistence and usable manner.

Efficiency: It is concerned with the provision of accounting information through the optimal (most productive and economic) use of resources.

Confidentiality: This is concerned with the protection of sensitive accounting information from unauthorized disclosure.

Integrity: It relates to the accuracy and completeness of accounting information as well as its validity in accordance with customers' value and expectation.

Availability: It relates to accounting information being available when required by customers now and in the future.

Compliance: It deals with complying with those laws, regulations and contractual arrangements to which users process their subject i.e. externally imposed criteria as well as internal policies (Dandago, et al.2014, p 655-670).

2.2.4.2. The components of the accounting information system

The accounting system consists of staff, producers, equipment and records used by the Organization to develop accounting information and to share this information with decision makers. The design and functions of these systems vary greatly from organization to organization. In small and medium-sized enterprises, the accounting system consists of cash receipts, checkbooks, annual income taxes, etc. In large firms, accounting systems include computers, well-trained staff, and accounting reports that affect the daily work of each department.

In all cases, however, the primary purpose of the accounting system is not adjusted as efficiently as possible by the accounting information requirements of the Organization. There are many factors that affect the structure of the accounting

system within a given organization. More importantly, the company needs accounting information and resources available to run the system (Meigs et al 1999, p. 6-8).

Supposes that the billing information system is similar to any other system consisting of a set of components to achieve its objective of creating these components and their components: (AL-Refae, K.M., 2012, p. 1483).

- ✓ Evidence documents and documents supporting financial transactions in the economic institution.

- ✓ Databases that store financial statements of accounting transactions.

- ✓ The application of the computer that processes the data to turn it into useful information.

- ✓ Written and drawn-out accounting procedures to arrange financial operations in the organization.

- ✓ Persons who deal with one or more accounting systems (AL-Refae, K. M.,2012.p 1483).

2.2.5. The Evolution from Traditional AND Modern (AIS)

The world of information technology is constantly evolving. The challenge of security breaches has now become overwhelming, reaching critical levels despite years of attempts to curb the problem. Recent research shows that security must be tightened as corporate violations increase.

Thanks to the rapid deployment and application of computer technology and network communication technology in business management and accounting information processing, the accounting information system is evolving from a traditional accounting information system to a modern accounting information system. The facility promotes the processing of accounting information from simple calculators to modern facilities, such as computer networks and so on (Anita S., 1999, p. 7).

2.2.5.1. The Information System and Information Process

The information process is the activities that the information system receives the accounting unit data and activities, then stores and manages this data, corresponding to reports that help management. The information process is classified into three categories: "collection of business-related data, maintaining and maintaining the accounting entity and the latest data, and reporting information that is useful in the implementation, monitoring and evaluation of the business process

(Fang & Others, 2016, p. 164-165).

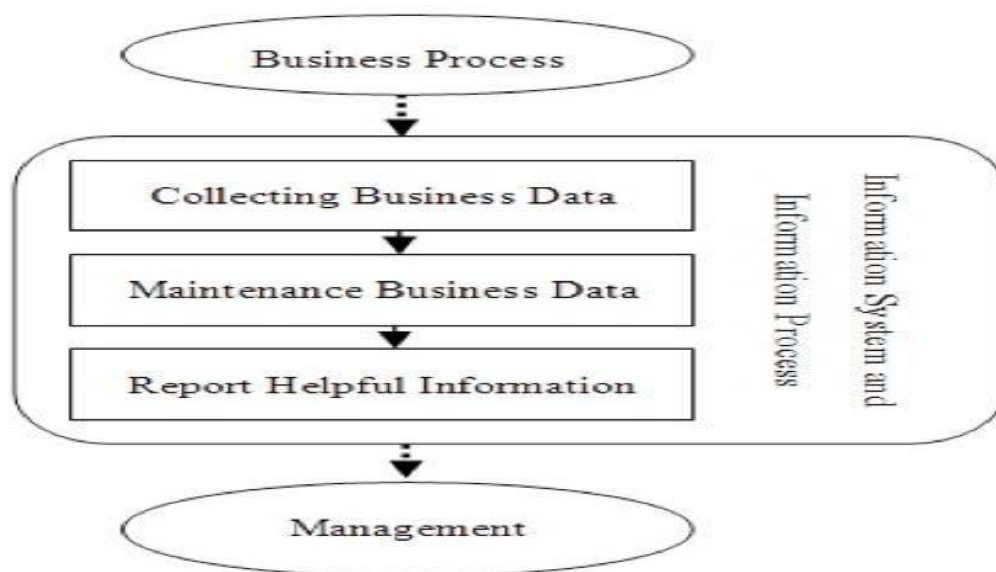


Figure 2.2 Information system and information process

Score by (Fang, & Others, 2016, p164-165)

2.2.5.2. Information Processing and Transmission of Traditional AIS

The traditional accounting information system is based on the accounting and accounting equation of Luca Basioli. The essence is the chart of accounts. The tables of accounts classify and summarize the results of the financial assessment of the assets, liabilities and equity of the accounting entity. Financial reports are used to convey the condensed data of the accounting unit to users of accounting information. The features of the traditional accounting information system are that general accounting data are recorded, archived and reported manually. Only a few temporary features such as calculators and abacus can be used as a limited helper.

Due to the small size of the accounting unit and the ease of doing business, the traditional accounting information system requires fewer bookings for day-to-day maintenance. However, the expansion of accounting and increasingly complex companies, processing of manual information, paper accounting documents and transfer documents shows the shortage gradually (Fang, & Others, 2016,p164-165).

2.2.5.3. Information Processing and Transmission of Modern AIS

As the spread of information technology, some entity accounting of computer technology and network communication technology while accounting processing and transfer of information, applied IT to the accounting field. Traditional accounting information was then introduced into the modern accounting information system. Due to the application of high technology in the processing of accounting information, the modern accounting information system covers the scarcity of the fairly traditional accounting information system.

First, the application of IT reduces the number of accountants and reduces the reliance on manual information processing.

Second, this technology reduces the amount of paper and space for storage of paper documents.

Thirdly, improving the efficiency of accounting and transport processing. However, the security issues of accounting information come along with the modern accounting information system also (Fang, Jiamin & Liqing Shu, 2016, p.164-165)

2.2.6. Basic function of accounting information system (AIS)

The basic functions of accounting systems are defined in the development of information on the financial position of the company and the results of its operations. Each accounting system performs the following basic functions (Meigs et al. 1999, p. 6-8):

1. Interpret and record the effect of business transactions.
2. To classify the effect of similar transactions to determine the various amounts and subtotals that are useful for management and are used in accounting reports.

3. Summarizing information in the system and communicating with decision makers. Differences in accounting systems are mainly due to the nature and speed of performance of these functions.

Ensure full control that confirms the accuracy of recording and processing business data. Also protect this data and organizations. However, (Tadesse Kebede, 2015, p.11) AIS has three important function in any Organization;

- **It collects and stores data:** concerning activities and transactions so that the organization can review what has happened.
- **It processes data** into information that is useful for making decision that enable management to plan, execute and control activities.
- **It provides adequate controls** to safeguard the organization's assets, including its data.

These controls ensure that the data is available when needed and that it is accurate and reliable.

2.2.7. Information Security in Accounting Information Systems

Today, successful business management is virtually impossible without the need to use tools such as reports and data from billing information systems. Information systems are required for the success and excellence of the organization in the area of competition. The information system recognizes, identifies, collects and errates company data. Billing information systems transfer financial data

To financial information, and provide this information to a wide range of decision makers. Data is the primary source of decision-making, and therefore security should be placed in the system as well.

The importance and reliability of financial information for decision-making Stakeholders are clear to everyone in the world today. Information security is an important tool for concrete decision-making. It is safe to say that each administrative decision has financial consequences, so the financial information requires a management decision. (Vadiee & Mousavi Nejad, 2008, p. 53-66).

Accounting Information Systems have the task of creating and processing information and establishing system security. Information security in accounting

systems includes processes and procedures to protect accounting systems from internal and external threats.

The security of accounting information systems will enhance the qualitative characteristics of accounting information and the integrity of financial reporting if they produce desirable results based on accurate and reliable information. Among the requirements of an active and healthy community of financial and economic activities is a secure environment. Accountants must have the knowledge and experience to create such an environment. In addition, auditors should ensure the integrity, accuracy and reliability of financial information in order to provide users with up-to-date and useful information.

All cases of information systems security in the previous sections were described as necessary for the establishment of security information systems. In particular, access levels should be determined for each section, and software and hardware locks for these links must be designed. Also, the annual periodic controls of accounts, records and various reports, is a way to ensure there is no virus in the accounting information system (Bafghi, A, 2014, p. 74-75).

The manager states that each of the following provides security for information systems: (i) Assessing risk and loss from unauthorized purchases using, disabling, changing or providing such information or information systems; (ii) determine the appropriate level of information security to prevent damage to such information in accordance with the standards. (iii) implementing procedures policies to reduce risk costs to an acceptable level; and (iv) testing and ensuring effective implementation of information security and evaluation.

CHAPTER THREE

THE E-COMMERCE ON THE AIS

3.1. THE RELATION E-COMMERCE ON ACCOUNTING

Accounting is the process of identifying, measuring, recording and communicating economic information to others so that they may make decisions on the basis of that information (Bradbury and Laura, 2012, p. 4).

However, Accounting has undergone significant changes in transition economies, and it has evolved from a technical topic to a scientific one, respectively accountants had been perceived as “bean counters”. But later with the development of complex domestic and global markets accounting has become a socially embedded practice that influenced particularly the wealth accumulation (Carruthers, 1995, p. 313-328).

In addition, Accounting is a system meant for measuring business activities, processing of information into reports and making the findings available to decision-makers. The documents, which communicate these findings about the performance of an organization in monetary terms, are called financial statements (Shekhar, C., and Violet T., 2005, p. 101-120).

But, The relation E-commerce on accounting: Accounting and auditing assemblies are very concerned with Ecommerce due to the fact that selling operations done but the facilities website connected directly to the automated accounting information systems and it has become inevitable for the accountant and the auditor to learn this new science, (Marcella, 1998) wrote in his article “The effectiveness of E-commerce” in “Informational Technology Audit” magazine: “Ecommerce has made great changes in the universal trade science and the mechanisms of the commercial operations which made it necessary to the accountant and the auditor to comprehend those changes and their effect to the business they do and the legal environmental circumstances concerned with the business.

It is important to mention that E-commerce and the internet could contribute to the quantitative information features by providing the adequacy feature greatly especially by providing the subsidiary feature of the appropriate timing, researchers think that the accounting information system is useless if those information were not

authenticated when used to providing important information for stakeholders in general and for the decision maker in particular and since the E-commerce system related to the internet is directly connected to the automated accounting information system, the outputs of the accounting information system are not reliable in the case when something goes wrong, or in the case of hacking to that accounting information system hence the consumers will no longer trust that system (Chaston I., & Mangles, T., 2001, p. 83-99).

As a conclusion, if one wants the information of that accounting system to be highly authenticated two significant things must be taken into consideration, the first one is to find a specific mechanism to protect the accounting information system from being hacked through the internet; the second one is to find a specific mechanism to insure the security of the E-commerce technique and the facility's navigation websites through the internet (AL-Refaei, 2012, p. 1484).

3.2. THE NATURE OF E-COMMERCE AND ITS RELATIONSHIP TO THE WORK OF THE AIS

The accounting information system (AIS) is one of the subsystems of the economic unit and consists of several subsystems that work together in a coherent, coordinated and reciprocal manner to provide historical, current, future, financial and non-financial information to all parties concerned with economic unity and to achieve its objectives (Al-Dahiyat, 2003.p. 19-67).

As many of the economic units are moving towards the use of electronic commerce, they are gradually increasing as they represent one of the changes and developments in which economic units must achieve the benefits that can help them achieve their objectives. (MacGregor, 2004) Since the accounting information system is an open system that affects and is influenced by the environment in which it operates and it represents the official system of information in any economic unit and therefore it has the duty to provide different information to many entities related to the economic unit concerned in addition to the possibility of achieving its objectives and objectives of the unit in which he works.

It is necessary for the accounting information systems in the economic units operating in the electronic commerce to take into consideration all the changes and developments that occur in the various fields surrounding the environment,

especially with regard to developments in the use of modern information and communication technologies, which represent electronic commerce one of them (Yahya and Al-Hibaiti, 2003, p.41).

It can be said that the relationship of electronic commerce to the work of accounting information systems will require the accounting information systems to take the developments that will be generated by the requirements of the work in the electronic commerce, especially regarding the need to use modern electronic methods in the work of accounting as well as redesigning the system in line with the operation of electronic data and subsequent effects on the components of the system that we will address in subsequent investigations (Yahya and Al-Hibaiti, 2003, p.41).

The information system greatly influenced by the exercise of accounting systems, E-commerce, the assumption being that there is a close link between both systems bear many of the client organization and the responsibilities of the pilot when providing and receiving services through electronic communication networks.

Expansion of the introduction of IT systems experience resulting from electronic intelligence systems within the information system of accounting. Increase the efficiency of enterprise performance and lower operating costs and costs of doing retail operations domestically and internationally. The possibility of the arrival of the Foundation for a large segment of customers, in addition to speed and make the delivery of new and innovative products, the possible adoption of the institution on external sources of technical support for electronic service provided, Reduction in the volume of inputs and change is almost entirely in the online systems. Increase the efficiency of enterprise performance and lower operating costs and costs of doing retail operations domestically and internationally.

The complexity of procedures and controls review, audit and tax for settlements and the urgent need to review accounting standards and sophisticated take into account the dimension of mail resulting from the introduction of continuous and rapid development of networks of electronic communications in settling accounts (www.acc4arab.com).

However, it is important here to recall that E-commerce and the Internet can contribute to the qualitative characteristics of information, providing convenience feature dramatically, particularly by providing property subsidiary of timeliness. These characteristics are as followed:-

- Security, which is a proposal for specific technological measures to prevent the other from penetrating through the automated accounting system the company's website on the internet.
- New vaccine Assurance, which is on the mechanisms and procedures to be followed to secure the quality of good information, has been defined by the Institute of Chartered Accountants AICPA on its U.S. (Rikhardsson, Pall, & Richard Dull., 2016, P.26-37).
- reliability, which is a procedure to be followed to make the information trusted by the stakeholders in general and decision-makers in particular, and persuade them to viability.

It has taken a lot of accounting bodies as well as some prestigious universities the subject of E-commerce and made the control mechanism accounting processes that are whereby the core competence of accounting and auditing, and on top of those bodies, the Institute of Chartered Accountants American AICPA, which approved the five principles check for E-commerce sites for companies in a joint venture with the Canadian Institute of Chartered Accountants CICA (Marcella, 1998).

3.3. THE EFFECT OF E-COMMERCE ON THE COMPONENTS OF AIS

The components of the accounting information system are generally related to a range of human and material parts. In the manual operation of the data, the system will rely mainly on the human cadre as well as a range of automated or semi-automatic means that help to carry out accounting work.

However, when the economic unit work in the light of electronic commerce, it requires the use of electronic means, which constitutes the Internet, which is one of the most important means, which means that many of the data must be based on electronic operation using computers and accessories, which requires the accounting information system to rely on Operating Electronic Data, which calls for the need to

develop its components to include all the means required by work in the context of electronic commerce (Driver & Mock, 1975, p. 490-508).

The components of the Accounting Information System in the context of electronic commerce will include: the group of qualified individuals, computers, software, database, procedures, communication technologies, as follows:

3.3.1. Qualified Individuals Group

Individuals are one of the basic components of the accounting information system and the importance of the presence of individuals within the components of the accounting information system in light of the work for the purposes of electronic commerce in terms of the need for the existence of qualified individuals scientifically and practically and their ability to perform accounting work in the use of modern technology and the multiplicity of entities that have relations with the economic unit in which the work is being carried out, as well as increasing the data and information required to be assembled, operated and communicated to the concerned authorities (Scheer, August-Wilhelm.,1994, p.4-16).

In view of the importance of the personnel component within the management of accounting information systems, the accounting information system can include a group of individuals comprising: (Yahya & Al-Hibaiti, 2003, p. 17).

1. Accountants in all their functional grades (account managers, accountants, sub-accountants, account clerks) who are responsible for all accounting tasks to record, tabulate, summarize and display accounting data and help to program it on the electronic calculator and ensure that it is accurate periodically.

2. Analysts and Designers of Accounting Information System who are responsible for the analysis and design of the accounting information system or any of its sub-systems when required.

3. Financial analysts who have the responsibility to analyze the basic and additional financial statements produced by the accounting information system in the economic unit or to analyze any other data related to the operation of the accounting information system.

4. Programmers who undertake the programming operations required by the work of electronic computers.

5. Any other individuals within entities related to the operation of the accounting information system in order to exchange knowledge and try to make use of it between the accounting information system and any other information systems that may exist within or outside the economic unit (Yahya & Al-Hibaiti, 2003, p. 17).

3.3.2. Computers

They represent the primary means in the work of AIS at work under the E-commerce because it cannot perform without it in terms of both running and processing data required speed and accuracy in terms of the possibility of contacts with the bodies that we are dealing with and communicating data and information are available (Marcella, 1998).

The use of computers in the work of AISs can lead to take advantage of the following characteristics:

1. The use of a computer leads to internal control and self-implementation processes so that can avoid the errors in the different phases of operation first hand, where the computer contains media for control and monitoring and verification of results.

2. Using a computer to assist in completing the business accounting and management quickly and thus lead to reduce costs.

3. Using a computer provides the ability to produce multiple documents the process of a single mechanism and these documents are either multiple copies of a document and one or accounting documents and accounting records used to satisfy the same data.

4. Provides automation of the data to provide an enormous amount of accounting and other information that can be used for different purposes such as planning, control and decision-making.

5. Apply the principle of writing data back and one where data is entered and the first time data is changed in all the related files directly in the same time, reports are extracted automatically (Marcella, 1998) (Abdali, 2003, P. 5-6).

3.3.3. Software

It includes a set of computer-driven operating instructions to implement the required objectives of the system and can distinguish between two basic types of software, system software and application software (Mohamed & Al Hammad, 2000,p.30). Examples of software are: (Yahya & Al-Hibaiti, 2003, p. 174).

- a. Programs implemented by the calculator (standard programs).
- b. Application Software.
- c. Support Programs.
- d. Translated Programs.
- e. Disk Operating Systems.

The software programs are all the programs that can be used in the work of the accounting information system in the economic unit through which a set of instructions that feed the computer in order to be able to receive the different data and guide them according to the accounting processes necessary to extract the required information. The operating programs that can be used in the areas of work of the computer information system are basically all accounting software applications that can be used without the need for a programmer to program accounting operations and extract their results (Yahya & Al-Hibaiti, 2003, p. 174).

3.3.4. Database

The accounting database is a set of logically linked files stored in an organized manner that facilitates application access to data processing.

(McCarthy, 1982, p. 554-578).

The existence of a database within the components of the accounting information system is important, as this helps to achieve the following benefits:

1. The accounting database contains all the data related to all the activities of the economic unit carried out by the different sections and departments in them, which leads to easy access to any data that should be addressed directly and quickly.

2. The presence of data in the database in a unified (centralized) manner will reduce the frequency of the data preservation process (if it exists in separate files),

which also reduces the cost of data preservation because there is no need to repeat files with similar data.

3. Contribute to the integration of information subsystems in the economic unit through the possibility of providing and exchanging data among them through a unified source represented in the database, which contributes to the reduction of time and effort.

4. The ease of data collection and processing by users (especially within the economic unit), which contributes to the provision of information (outputs) quickly and thus increase the efficiency of decisions that can be taken on them.

There are several methods used to organize the database, all of which are very important for accounting information systems, as they affect the way accounting records are organized on electronic files and how these data are used in financial reporting. The database is only an electronic calculator that minimizes the repetition of data that can be accessed by one or more specific persons. Any organization of files used in database creation can be followed (Yahya & Al-Hibaiti , 2003, p. 180-181).

3.3.5. Procedures

It refers to the set of policies and methods to be followed in the use, operation and handling of the information system. For example, the procedures to be followed for the operation of the payroll program are to determine the date of operation of the program (end of month, mid month, etc.) and who has the authority to run the program and who has the right to see the outputs of this system of payrolls and notifications of addition and others (Tarek Taha, 2000, p.509).

3.3.6. Communication Technologies

Means: all activities and means related to the electronic transmission of information and data from one site to another using hardware, software, media or channels that connect computers with each other or between computers and some other automated units (Hunton, James E., 2002, p. 59).

The connection process takes the form of a network called "computer network" which is defined as "a group of computers connected to each other or with other

mechanical units (such as screens, printers, etc.) in locations that are close or spatially spaced through media or communication channels so that any unit within the network can exchange data and use material and non-physical resources for the rest of the members of the network while maintaining their own operational capabilities "and communication networks are of two types:

1. Limited Area Networks (LANs): These networks cover spatially converged sites, such as connecting computers within a company.

2. Broadband networks: networks that cover locations spatially separated such as connecting computers to different branches of the bank within the country or connecting the company's computer and the computer at its headquarters in another country.

To use these networks more effectively, companies rely on what is known as collective programs that allow a quick interactive mode among network users by displaying documents that are dealt with on more than one screen at a time. This allows the bank staff to identify the variables that occur on each document in a moment (Tarek Taha, 2000, p. 509-511).

3.4. THE EFFECT OF E-COMMERCE ON THE ELEMENTS OF AIS

The accounting information system in any economic unit is based on a set of key components by which accounting is carried out. These include: the documentary group, the book group, the accounting guide, the set of financial statements. These components constitute basic bases that can not be dispensed with regardless of how the data is used, whether manual or electronic. Due to the adoption of the

Accounting Information System on the operation of electronic data in the case of work in electronic commerce, there is a direct impact on the components of the system can be clasified as follows: (Jomaa, 1999, p. 164-165) (Zuwalef, 1996, P. 13).

First: Impact on the Documentary Group: The reliance on Electronic Data Interchange (EDI) requires the modification of the format and nature of these documents or the use of a new documentary set including the data contained in the original documents in line with the electronic accounting program aplied in the

economic unit as well as the coding system used to access data saved by magnetic tape or magnetic discs.

Secound: Impact on the book group: In the accounting method followed by economic units, accounting books are numerous but when relying on the operation of electronic data, computer memory, magnetic tapes and magnetic disks are considered accounting books. As a result of the multiplicity of accounting programs in the market, the preparation of multiple electronic books and different suited to the work and sizes of different economic units, which led to easy to deal with these books and very fast speed in the various processes when registration or modification or cancellation or inquiry (Zuwalef, 1996, P. 13).

Third: Impact on the Accounts Manual: Dependence on the operation of electronic data has helped to develop the method of preparation of the accounting manual as well as maintain the confidentiality of data or accounts recorded, whether total or sub, as well as the accuracy of the classification of accounts.

Fourth: Impact on the Group of Financial Reports and Statements Relying on the operation of electronic data led to the accuracy and speed of access to reports (daily - weekly - monthly - quarterly - annual), as well as the ability to display on the visual display and thus the speed of change of information contained in the reports before printing or storage. In addition to the above, the economic unit aims through the electronic data operation to provide more speed and accuracy as well as to provide the management of the necessary reports and can only be achieved under a good system that has adequate control elements and must include the internal control system the whole system in the sense of the automated part and the part which remained manually as the rules of internal control should be built in the input and output as well as the operating stage characterized by the low human element. Here it is noted that the use of the computer has affected both administrative control and procedural control (Walsh., et al., 2002, p. 438-446).

Administrative control refers to the separation of the organizational structure between the conflicting functions. This chapter represents one of the proper preventive control methods whereby one employee is not allowed to combine a number of related functions so that the risks of theft, embezzlement and manipulation of the assets and records of the economic unit can be avoided.

In order to achieve the objectives of administrative control, it is necessary first to determine the appropriate location for computer management in the organizational structure of the economic unit as a whole. This site differs from one unit to another according to the size of the unit and the nature of its activity and the policies followed by it.

After studying the location that can be taken by the computer administration in the organizational structure of the economic unit, it is necessary to study the proper internal organization of this administration, where proper internal organization is an important factor that helps to increase confidence in the system of internal control and to achieve more confidence, it is necessary to clarify the boundaries between the basic functions of these departments as well as the specification of these functions and the authorities and responsibilities incumbent on them (Remo, 2006).

Procedural control is intended to confirm the accuracy and completeness of accounting data processing, provided that such data shall be handled only by authorized persons. Procedural control methods under electronic data processing are divided into three groups: input control methods, data control methods and output control methods, as follows:

- 1. Input Control Methods:** aim to provide a reasonable degree of certainty through the correctness of the adoption of the data (received by the data processing department) by a competent employee and the integrity of its conversion so that the computer can identify it provided that it is not lost, added, deleted, copied or otherwise any illegal adjustments in the sent data even though through direct communication lines. Input control methods include those relating to the refusal to correct or re-enter the previously entered data.

- 2. Data Control Methods:** aim to provide a reasonable degree of certainty through the implementation of electronic data processing processes according to specific applications.

- 3. Output Control Methods:** aim to confirm the accuracy of the outputs of the data processing processes and the circulation of these outputs by authorized persons only (Zuwalef, 1996, P. 13).

The reliance on the electronic operation of accounting data led to the lack of most audit documents as well as the emergence of risks surrounding the operation and protection of data. It can be generally said that this has resulted in a change in the nature of the audit process and thus change in the audit procedures in general form. Studies have shown that one of the most important factors that encouraged thefts and counterfeiting risks in economic units that use computers in the operation of accounting data is the lack of understanding by auditors of the nature of computer work primarily because electronic data processing does not change audit objectives, but affect in the way of operation and storage of accounting data.

The audit procedures must be adapted to suit the new operating environment. The auditor's role in this case is determined by International Auditing Manual No. 104: In the circumstances of an electronic data processing procedure, the auditor must understand the computer hardware components as well as the software and electronic processing systems to the extent that he can plan the audit and understand the effects of computer use in evaluating internal control controls and the application of audit procedures, especially the assistance technical audit methods. The auditor should have sufficient knowledge of the operation of the accounting data in the form necessary to perform the audit procedures based on the applicable audit approach (Jennings, et al., 1993, p. 489-507).

The studies also indicated that the most important factors of thefts is the lack of agreement of audit procedures with the nature and environment of electronic data processing, which called for the need for a change in the audit technology, especially in the areas of computer use, statistical methods, mathematics and quantitative analysis methods, which represents the most important trends in contemporary auditing. In order for the auditor to be able to evaluate the internal control system, he must be aware of the technical aspects of the operation of the accounting data and associated problems (Zuwalef, 1996, P. 13).

3.5. THE E-COMMERCE EFFECT ON PROPERTIES AIS

The accounting information systems are characterized by several characteristics that make them information systems in the company in which they are, in order to perform the function that was developed for them in the company.

The characteristics that make accounting information systems active and efficient are: (Hafnaowi, 2007, P. 59):

1. Accounting information systems must achieve a very high degree of accuracy and speed in processing financial statements when converted to accounting information.

2. The decision-maker should be provided with the necessary accounting information at the appropriate time to make an alternative selection decision from the alternatives available to the decision maker.

3. The decision maker should be provided with the necessary information to assist them in their important job of planning the short, medium and long term future work of the company.

4. To be quick and accurate in retrieving the quantitative and descriptive information stored in its databases, when needed.

5. To be flexible enough when it is necessary to update and develop it to fit with the changes that occur on the company.

The presentation of the specific characteristics of accounting information where the impact of Electronic Commerce on these characteristics can be shown in the following points: (omer amin, 2007, p.70-72).

First: The impact of e-commerce on the (accuracy) of accounting information: Electronic commerce has a positive and negative impact on the accuracy of accounting information. It increases the accuracy of the accounting information produced in the accounting system through the use of computer and special software that address the accounting procedures and in turn may adversely affect if the computer is exposed to virus entry through these procedures that will have an impact on accounting data This situation can be avoided by setting up a virus handler that handles and monitors extraneous viruses. (omer amin, 2007, p.70-72).

Second: The impact of e-commerce on the (benefit) of accounting information: The benefit lies in two elements: First, "Validity of Information" where the Electronic Commerce has a positive impact on the Validity of Information, where the transactions are done very carefully via internet, and the delivery of service or goods by the seller to the buyer is done only after the full receipt of the amount through the electronic credit card which is limited to what actually happened. The second element is "the ease of use of accounting information" which is derived from this activity, where any accounting information can be found immediately once the transaction occurs and this effect on the benefit of accounting information is a positive impact.

The classification and presentation of accounting information on business transactions serves the user of the information (the decision maker). Moreover, the timeliness of the submission of the information in the case of its request and the ease of its extraction and use will increase the effectiveness of the knowledge ownership of the decision maker and reflect its positive impact on the decision taken (Ferguson, et al., 2005, p. 5-29).

Third: The impact of e-commerce on the (effectiveness) of accounting information: The accounting information resulting from this activity (Electronic Commerce) has a great effectiveness in achieving the objectives of the decision maker which is the result of obtaining information in form, time and content required as a result of the use of the computer. On the other hand, the commercial operations are real or in a relatively short period compared to Electronic Commerce which leads to the assertion of effectiveness in the provision of information, that is, the impact is overlapping between Electronic Accounting and Electronic Commerce (omer amin, 2007, p.70-72).

Fourth: The impact of e-commerce on the (predictive value) of accounting information: The predictive value of accounting information is related to the ability of the Company to develop future plans of relatively high accuracy. Electronic commerce emphasizes this feature and increases the quality of accounting information for the availability of business processes within a specific speed format, including all ongoing operations and then continuous overlap to draw a formula

expressing the future plans of the company and strengthen the decision taken within this budget and plans.

Fifth: The impact of e-commerce on the (efficiency) of accounting information: The efficiency of accounting information is linked to the economic value of information (cost-benefit). This economy is realized in the use of resources in electronic commerce by restricting the accounting work in the introduction, processing and production of information automatically, resulting in accuracy and limited time without the need for any paper or written information to provide this information (Abdullah, 2007.p. 62-72).

Sixth: The impact of e-commerce on the (reverse feedback) of accounting information: Immediate feedback can be achieved where the communication via internet will contribute to the rapid communication of users, their feedback and the results of their decisions in the light of the data and information provided by the reports and financial statements posted on the Internet.

Seventh: The impact of e-commerce on the (neutrality) of accounting information: The neutrality of data and information contained in reports and financial statements is achieved by ensuring that they are delivered to all parties and in the same form, content and time.

Eighth: The impact of e-commerce on the (comparative advantage) of accounting information: Facilitate comparisons between the data contained in the financial reports and financial statements published on the network, whether the data available for previous years of the company or the data contained in the reports and financial statements published on the network of another company for the same period of time, which achieves the comparative advantage (Hussein, et al., 2006).

CHAPTER FOUR METHODOLOGY AND DATA ANALYSIS

4.1. REASERCH METHODOLOGY

The Research methodology process involves activities that need to be done. These are set to conduct research and complete the research work. The research to achieve the objectives and hypotheses of the research and access to the best techniques and methods the electronic commerce effects on improving accounting information system. The data analyzed through the use of descriptive analytical method by collecting data from:

Primary data: Through the distribution of a questionnaire and analyze the results, with the participants.

Secondary data: Using books, research, articles, magazine, and previous studies, websites, etc. Research methodology consists the following steps:

4.1.1. Population and sample study

This research use of quantitative analysis . This is a valuable kind of sampling too obtain data from a specific respondent who can provide the paramount data in answering the research questions . In order to select the appropriate sample.

The population of the study is among the employees of the companies and institutions in the Kurdistan region of Iraq, the city of Erbil and the people who participated in this study, the main part includes accounting directors, business managers, financial managers, accountants and the Financial auditor, and a few others, such as economists and Statistics, who distributed (130) copies and (110) were replayed for statistical analysis purposes.

4.1.2. collection of the data

This study used descriptive analytical method .The provenance of data for the study was the primary data collected by use of questionnaires. This study aims to study the reality of the use of e-commerce aplication and the improving accounting information system and in addition the have a better system in the companies on the Kurdistan region/Erbil.

The questionnaire is the main tool in data collection and the designed for the study the collection of data and the distribution of questionnaires for inventory and collect the necessary information on the subject of the research, that questionnaire consists two section:

The first section includes information about study sample such as their age, gender, academic achievement, and years of experience.

The first section includes personal information that includes:

- ✓ gender (male ,female)
- ✓ age (20-30 years,30-40 years,40-50 years, more than 50 years).
- ✓ Qualification (Diploma, Bachelor degree, Master degree, PH degree).
- ✓ Specialization (Accounting, Business administration, Financial,Economic, other, Identity...).
- ✓ Job Description (Accountant manager, Commerical manager, financial manager, Accountant, financial auditor and other, Identity...).

The second section of the questionnaire included (25) a set of closed questions aims electronic commerce aplication and measure the level of electronic commerce on the improving accounting information system " development , properties, components" for different companies and Five Likert scale will by used for measuring the questionnaire attitudes.

4.1.3. Statistical Treatment

To analyze data gathered by study variables, the statistical methods used included: Means and standard deviations to identify extent to which respondents responded to instrument items.

Internal-consistency Cronbach Alpha: to verify reliability of the instrument.

standard deviation Frequencies and mean: to describe and identify the variables studied.

Simple Correlation Coefficient: To determine the correlation between the variables studied.

Regression Analysis: in order to examine and determine the effect of independent variables on the dependent variable.

Factor Analysis: is an explorative analysis it does not distinguish between independent and dependent variables

4.1.4. Data Measurement

Collected data will be analysed through SPSS program. Those questionnaires bring been coded under the data sheets by apointing each answer a numeric quality. Five Likert scale will by used for measuring the questionnaire attitudes as shown below.

has been used where 1 is used as a lowest value and is assigned to the lowest or worst option were as 5 is the highest value, assigned to highest or the best option

Table 4.1 Likert scale

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
5	4	3	2	1

furthermore, the values of mean of variables were measured according to Univariate analysis for the purpose of evaluating the attributes of variables individually based on the responses.

Table 4.2 Rang

Rang	Decision rule
1- 2,49	Low level
2,5- 3,49	Moderate level
3,5 – 5	High level

4.1.5. Reliability Statistics

To verify the reliability of the questionnaire, the researcher depends on the Cronbach's alpha coefficient. The results between (0.00) and (0.50) are considered as weak coefficients of validity, results between (0.90 to 1.0) is considered to be excellent coefficients of reliability, however, results between (0.50 to 0.70) is considered to be a moderate coefficient of reliability, Finally, the results are considered (0.70 to 0.90) to be considered a high coefficient.

Table (4.3) shows the values of Cronbach's Alpha for the entire questionnaire, that, we can see that Cronbach's alpha is 0.794, which indicates a good level of internal consistency for our scale with this specific sample.

Table 4.3 Cronbach's alpha for the entire questionnaire

Number of item	Cronbach's alpha
30	0.794

4.2. THE RESULT OF DATA ANALYSIS

4.2.1. The Demographic Characteristics of Respondents

✓ Gender

The results of classification of respondent by gender represented that, 59% of the respondents are male, while the remained 41% were female

The results of classification of respondent by Gender represented that, 72.7% of the respondents are male, while the remained 27.3% were female. (Figure 4.1)

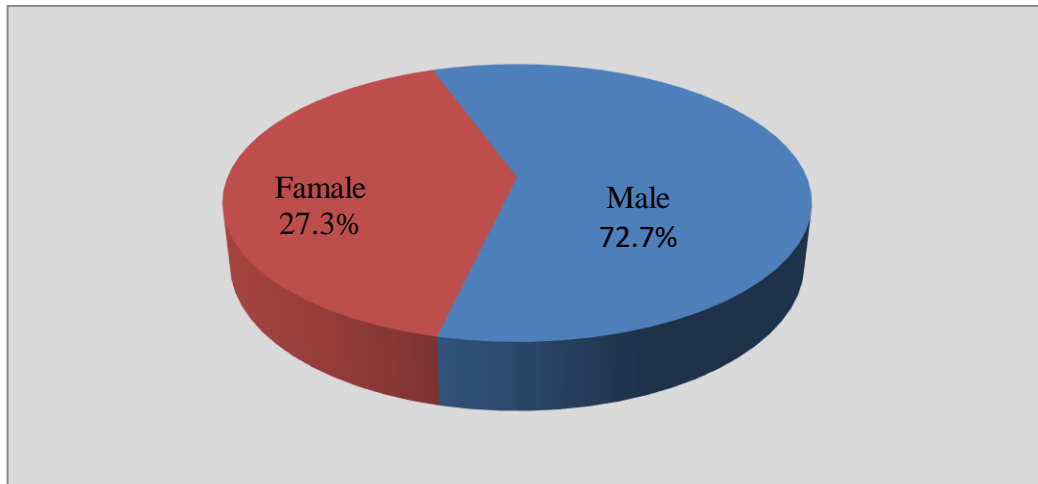


Figure 4.1 Gender of respondents

✓ **Age**

The results of classification of respondent by Age represented that, 43.2% 20 – 30 years, 37.8% 30-40, 12.6% 40 – 50 years and 6.3% More than 50 years. As well as to more respondents are aged 20-30 years old and that they represent the majority.

Table 4.4 Age of respondents

Age group	Frequency	Percentage (%)
20-30	48	43.3
30-40	42	37.8
40-50	14	12.6
More Than 50	7	6.3
Total	110	100
Mean (1.82)		

✓ Qualification

(Figure 4.2) shows that, 4% of the sample are "Diploma" holders, 63% of the sample "Bachelor" holders, 22% of the sample are "Master" and 11% of the sample "PH degree" holders.

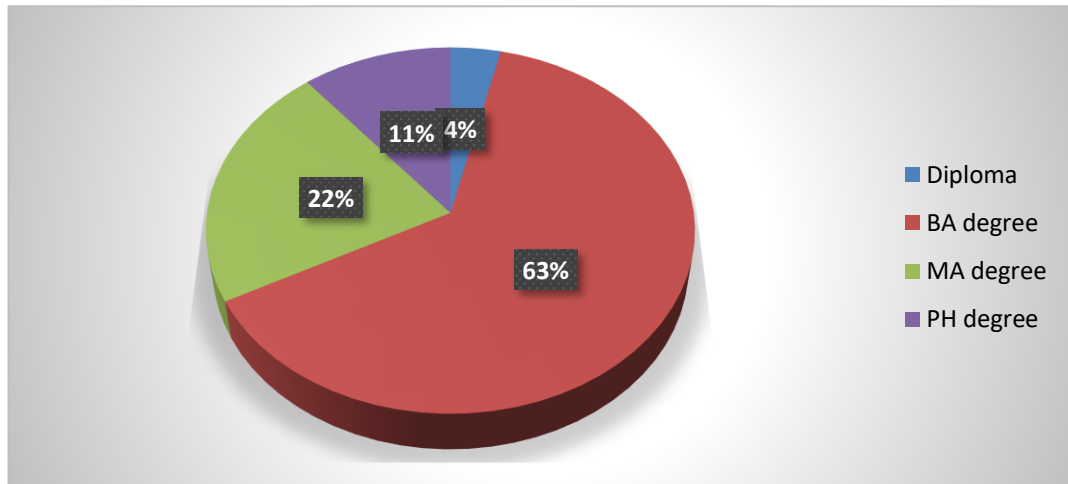


Figure 4.2 Education of respondents

✓ Specialization

The finding of classification of respondent by Specialization represented that, %47 Accounting, 32% business administration, %9 financial, 6% economic and 6% other. Also, the more respondents are Accounting is a Specialization and that they represent the majority.

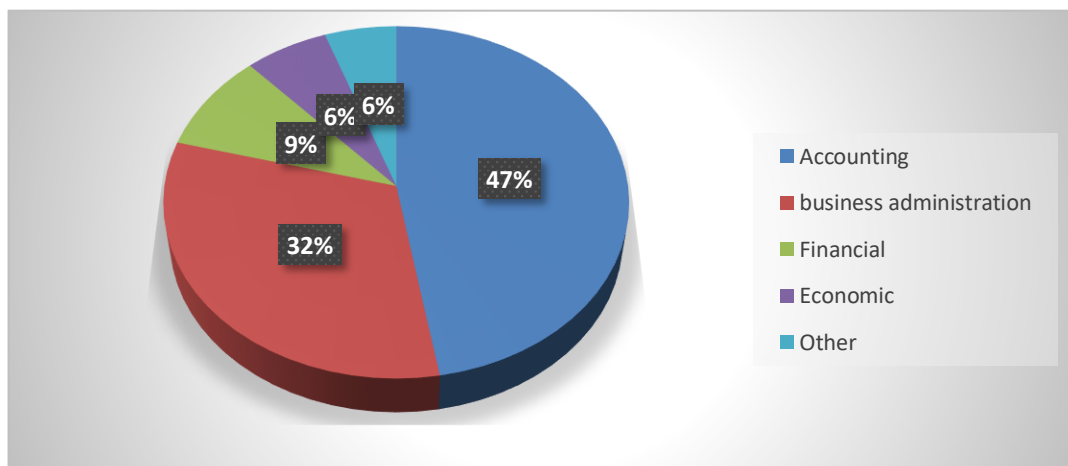


Figure 4.3 Specialization of respondents

✓ Job Description

According to the result, 8% of the respondents have job description of an Accountant Manager, 22% commercial Manager, 10% financial manager, 27% Accountant, 10% financial Auditor and %23 other.

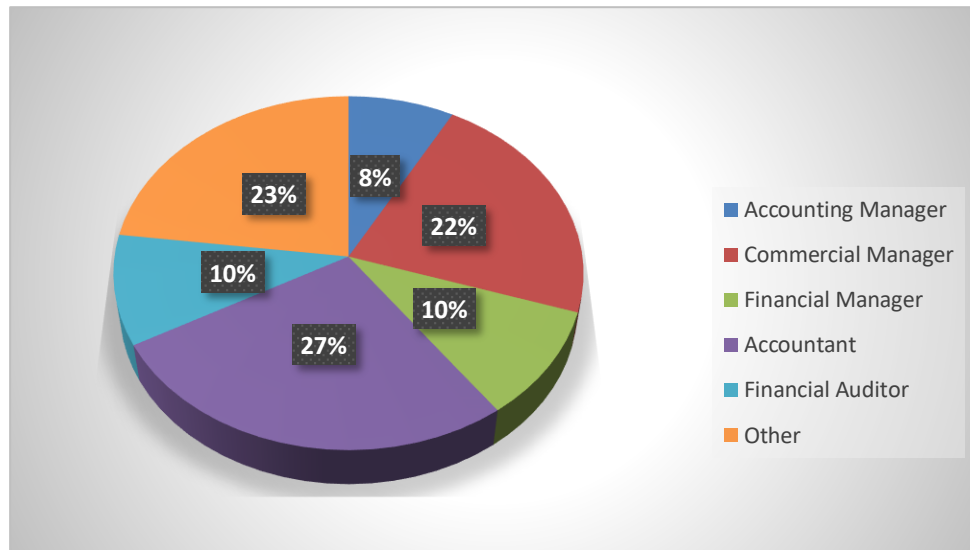


Figure 4.4 Job Description

4.2.2. Descriptive analysis of dissertation variables

4.2.2.1. E-commerce

E-commerce represents the independent variable in this dissertation that have been examined through one dimension. means, Frequency distribution and standard deviations that are as follows:

Electronic commerce applications:

Table (4.5) demonstrates the application e-commerce questions analysis (Q1 – Q13) depending on the frequency distribution, means, in addition to standard deviations. Through the general average of the mean (3.906) the e-commerce applications questions (Q1- Q13) reached a high level of contribution.

In addition, the table (4.5) indicates that question (Q8) that states "the E-commerce a strategy to enter the international markets" that have a mean and standard deviation of (4.08), (0.706) respectively is the most significant question. Comes secondly the question (Q1) that states (e-commerce provide general information

about the company's products and services) that have a mean and standard deviation of (4.07), (0.5) respectively.

In return, the question (Q10) that states " The lack of scientific expertise to deal with electronic devices leads to fear of being used " that have a mean and standard deviation of (3.70), (0.724) respectively has the lowest contribute to the electronic commerce applications.

Table 4.5 Analyzing e-commerce (Application) questions

Q	Strongly disagree		Disagree		Uncertain		Agree		Strongly Agree		Mean	SD
	N	%	N	%	N	%	N	%	N	%		
Q1	0	0	1	0.9	11	10.0	77	70.0	21	19.1	4.07	0.570
Q2	0	0	4	3.6	12	10.9	71	64.5	23	20.9	4.03	0.683
Q3	0	0	4	3.6	21	19.1	66	60.0	19	17.3	3.91	0.711
Q4	0	0	6	5.5	13	11.8	61	55.5	30	27.3	4.05	0.783
Q5	3	2.7	5	4.5	19	17.3	54	49.1	29	26.4	3.92	0.930
Q6	1	0.9	5	4.5	20	18.2	56	50.9	28	25.5	3.95	0.839
Q7	2	1.8	4	3.6	23	20.9	48	43.7	33	30.0	3.96	0.908
Q8	0	0	1	0.9	20	18.2	58	52.7	31	28.2	4.08	0.706
Q9	0	0	5	4.5	20	18.2	57	51.8	28	25.5	3.98	0.790
Q10	1	0.9	4	3.6	32	29.1	63	57.3	10	9.1	3.70	0.724
Q11	0	0	7	6.4	22	20.0	68	61.8	13	11.8	3.79	0.731
Q12	2	1.8	9	8.2	31	28.2	54	49.1	14	12.7	3.63	0.876
Q13	4	3.6	11	10	20	18.2	53	48.2	22	20.0	3.71	1.017
Average											3.906	0.789

4.2.2.2. Accounting information system (AIS)

In this thesis, In this dissertation, AIS achievement represents the dependent variable that have been examined through three dimensions, namely (development, properties ,components) that are as follows:

A. The development of AIS:

Table (4.6) shows the analysis of the development of AIS questions(Q14 – Q19) depending on the frequency distribution, means, in addition to standard deviations. Through the general average of the mean (3.81) the e-commerce applications questions (Q14- Q19) reached a high level of contribution.

However, the table (4.6) indicates that question (Q16) that states (Electronic commerce has affected the flexibility of the AIS) that have a mean and standard deviation of (4.05), (0.822) respectively is the most significant question and the highest contribute to the development of AIS. In return, the question (Q15) that states (Impact of the presence of electronic commerce on AIS). that have a mean and standard deviation of (3.60), (0.921) respectively has the lowest contribute to the development of AIS.

Table 4.6 Analyzing development of AIS questions

Q	Strongly Disagree		Disagree		Uncertain		Agree		Strongly Agree		Mean	SD
	N	%	N	%	N	%	N	%	N	%		
Q14	3	2.7	9	8.2	20	18.2	58	52.7	20	18.2	3.75	0.940
Q15	2	1.8	13	11.8	26	23.7	55	50.0	14	12.7	3.60	0.921
Q16	0	0	6	5.5	16	14.5	54	49.1	34	30.9	4.05	0.822
Q17	2	1.8	6	5.2	16	14.5	62	56.4	24	21.8	3.91	0.863
Q18	1	0.9	9	8.2	22	20.0	57	51.8	21	19.1	3.80	0.876
Q19	1	0.9	4	3.6	40	36.4	41	37.3	24	21.8	3.75	0.869
Average											3.81	0.881

B. The properties of AIS:

Table (4.7) illustrates the questions analysis of cost dimension through questions (Q20 – Q24) depending on the frequency distribution, means, in addition to standard deviations. Through the general average of the mean (3.816) the cost dimension questions (Y1 – Y10) reached a high level.

AS well as, table (4.7) shows that question (Q22) that states "Using e-commerce provides appropriate accounting information for the decision makers?." that have a mean and standard deviation of (3.88), (0.926) the most significant question that contributes to properties of AIS.

But, the question (Q23) that states (Using e- commerce restores stored data accurately) that have a mean and standard deviation of (3.74), (0.925) the lowest contribute.

Table 4.7 Analyzing properties of AIS questions

Q	Strongly disagree		Disagree		Uncertain		Agree		Strongly Agree		Mean	SD
	N	%	N	%	N	%	N	%	N	%		
Q20	1	0.9	10	9.1	24	21.8	53	48.2	22	20.0	3.77	0.905
Q21	2	1.8	9	8.2	20	18.2	54	49.1	25	22.7	3.83	0.937
Q22	3	2.7	5	4.5	21	19.1	54	49.2	27	24.5	3.88	0.926
Q23	4	3.6	8	7.3	17	15.5	65	59.1	16	14.5	3.74	0.925
Q24	0	0	3	2.7	35	31.8	46	41.8	26	23.7	3.86	0.807
Average											3.816	0.900

C. componentes of AIS:

Table (4.8) shows the analysis of component of AIS questions(Q25 – Q30) depending on the frequency distribution, means, in addition to standard deviations. Through the general average of the mean (3.94) the e-commerce applications questions (Q25- Q30) reached a high level of contribution.

However, that question (Q26) that states "Electronic commerce helps to categorize data accurately" that have a mean and standard deviation of (4.02), (0.835) respectively is the most significant question and the highest contribute to the components of AIS.

In return, the question (Q30) that states "e- commerce provides accounting information based on Primary data supported by documents or objective facts". that have a mean and standard deviation of (3.80), (0.833) respectively has the lowest contribute to the components of AIS.

Table 4.8 Analyzing components of AIS questions

Q	Strongly disagree		Disagree		Uncertain		Agree		Strongly Agree		Mean	SD
	N	%	N	%	N	%	N	%	N	%		
Q25	0	0	5	4.5	15	13.6	64	58.3	26	23.6	4.01	0.748
Q26	1	0.9	5	4.5	16	14.5	57	51.8	31	28.3	4.02	0.835
Q27	1	0.9	8	7.3	21	19.1	56	50.9	24	21.8	3.85	0.876
Q28	3	2.7	10	9.1	9	8.2	49	44.5	39	35.5	4.01	1.027
Q29	1	0.9	6	5.5	18	16.4	58	52.7	27	24.5	3.95	0.844
Q30	3	2.7	3	2.7	24	21.8	63	57.3	17	15.5	3.80	0.833
Average											3.94	0.860

4.2.3. Hypotheses Testing (Statistical Hypotheses)

4.2.3.1. Examining the first hypotheses of the dissertation

The Table (4.9) Shows that the one distance (E-commerce) middle positive correlation with (Development of AIS) value of person correlation equal to ($r = 0.502$) over with the significant value of (0.000), and two distance E-commerce applications a positive correlation but weak with (The properties of AIS and The components of AIS) value of person correlation equal to ($r = 0.324$), ($r = 0.261$) over with the significant value of (0.001), (0.006).

In addition, the table (4.9) that according to Person correlation value, the E-commerce accomplished the highest positive with correlation with Development of AIS as the value correlation between them is equal two (0.502).

The correlation between e-commerce and Development of AIS, correlation between e-commerce and The properties of AIS, correlation between e-commerce and The components of AIS, because P. Value (sig) < 0.05 (we reject H_0).

Correlation:

Table 4.9 Correlation between (Development of AIS, The properties of AIS, The components of AIS) and (E-Commerce)

Applications of E-Commerce			
Y	Pearson Correlation	Sig. (2-tailed)	N
Development of AIS	0.502	0.000	110
The properties of AIS	0.324	0.001	110
The components of AIS	0.261	0.006	110

Note: if (sig) ≤ 0.05 (reject H_0).

(sig) > 0.05 (not reject H_0).

4.2.3.2. Examining the second hypotheses of the dissertation

We use the simple linear regression analysis. The hypotheses accepted if the level of significance is lower than 0.05 and the value of F call is higher than the value of F tab.

there are statistically a significant e-commerce effect on development of AIS.

Table 4.10 the impact (E-commerce) independently on development of AIS

	R square s	F cal	sig. F change	F cal	sig. t cal
E-commerce	0.252	36.379	0.000	6.031	0.000

there are statistically a significant e-commerce effect on properties of AIS.

Table 4.11 the impact (E-commerce) independently on the properties of AIS

	R squares	F cal	sig. F change	T cal	sig. t cal
E-commerce	0.105	12.662	0.001	3.558	0.001

there are statistically a significant e-commerce effect on components of AIS.

Table 4.12 the impact (E-commerce) independently on the components of AIS

	R squares	F cal	sig. F change	T cal	sig. t cal
E-commerce	0.068	7.876	0.006	2.806	0.006

R square values for the three distances are (0.252), (0.105) (0.068). These result signalize that (25.2%), (10.5%) (6.8%), (Development of AIS, Properties of AIS and Components of AIS) variation are achieved by dissertation (electronic Commerce).

This means that the factors extracted from the analysis together explain 74.8% of the variance of the price variable. Of course, the higher the social value of the variable, the better.

The amount of variation is shown in the table below, A review of the contents of this table notes that 11 factors have been extracted, The standard used is called the distinctive root (Eigen Value), The characteristic root of the factor is the amount of total variation interpreted by the factor, It may be used when applying the limit (1), That is to ask the computer to consider the factor whose value is only 1 and above, If the value of the characteristic root of a factor is less than 1, this means that this factor is not really different from a single independent variable of the study variables and therefore cannot be considered a factor.

Table 4.14 Communalities

	Initial	Extraction
Q1	1.000	.748
Q2	1.000	.683
Q3	1.000	.694
Q4	1.000	.673
Q5	1.000	.784
Q6	1.000	.649
Q7	1.000	.488
Q8	1.000	.750
Q9	1.000	.691
Q10	1.000	.815
Q11	1.000	.638
Q12	1.000	.633
Q13	1.000	.785
Q14	1.000	.603
Q15	1.000	.622
Q16	1.000	.596
Q17	1.000	.678
Q18	1.000	.684
Q19	1.000	.611
Q20	1.000	.705
Q21	1.000	.724
Q22	1.000	.657

Q23	1.000	.668
Q24	1.000	.749
Q25	1.000	.677
Q26	1.000	.591
Q27	1.000	.711
Q28	1.000	.756
Q29	1.000	.715
Q30	1.000	.658

4.2.4.3. Rotated Component Matrix^a

Variance Explained

The explanatory amount is shown in the table below. By reviewing this table, (4.15) workers were extracted. The user standard is called the Eigen value, and the characteristic root of the factor is the total amount of the variance interpreted by the factor. , I.e. a request from the computer to consider a factor whose value is only 1 and above, but if the value of the root characteristic of the factor is less than 1, this means that this factor is not really different from a single independent variable of study variables and therefore cannot be considered a factor. Note that there are 11 factors, the characteristic root value of the first factor of 4.75, and the second is 2.55 and so on ... and factor 11 has a distinctive root of 1.08.

It is also noted that the first factor alone was able to explain 15.882% of the total variance, while the second factor explained 8.449% of the total variance and so, and by combining the number of factors 11 together we can see that they interpreted 68.119% High value, and this means to benefit from the global analysis in the interpretation of most of the variance in the phenomenon with fewer variables and therefore fewer questions.

The ideal situation for the researcher is that the variable has high saturation on one of the factors and low projections on the rest of the factors, called variables that achieve this situation Marker Variables, which is very important in determining the nature of the factor directly and clearly, The non-ideal or complex that a person does not wish is that the variable is linked by factors and approximations, which makes it difficult to locate it, as we observed during the analysis steps, and this value can

change. As for the criterion used to estimate saturation, there is a criterion for the use of denunciations greater than 0.40, and another criterion is the Stevens (1996) standard, which is as follows: Considerations greater than (0.40) are acceptable, and the grading greater than (0.40) is significant, while the variations greater than (0.50) are essential; we use Gretna than (0.4).

Table 4.15 Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.75	15.882	15.882	4.76	15.882	15.882	2.21	7.538	7.538
2	2.55	8.449	24.331	2.55	8.449	24.331	2.16	7.219	14.758
3	2.15	7.149	31.480	2.15	7.149	31.480	2.09	6.998	21.755
4	1.95	6.549	38.029	1.95	6.549	38.029	1.96	6.587	28.342
5	1.62	5.440	43.469	1.62	5.440	43.469	1.99	6.531	34.873
6	1.54	5.080	48.549	1.54	5.080	48.549	1.87	6.224	41.097
7	1.24	4.314	52.863	1.24	4.314	52.863	1.86	6.086	47.182
8	1.27	4.090	56.954	1.27	4.090	56.954	1.80	6.034	53.216
9	1.19	3.864	60.817	1.19	3.864	60.817	1.73	5.845	59.061
10	1.13	3.808	64.626	1.13	3.808	64.626	1.45	4.751	63.812
11	1.08	3.493	68.119	1.08	3.493	68.119	1.22	4.306	68.119
12	.972	3.239	71.358						
13	.846	2.819	74.177						
14	.815	2.718	76.895						
15	.736	2.453	79.348						
16	.670	2.235	81.583						
17	.608	2.025	83.609						
18	.588	1.960	85.568						
19	.536	1.785	87.353						
20	.512	1.707	89.060						
21	.492	1.638	90.698						
22	.456	1.521	92.219						
23	.403	1.342	93.561						
24	.363	1.208	94.770						
25	.341	1.136	95.906						
26	.307	1.022	96.929						
27	.285	.949	97.877						
28	.261	.872	98.749						
29	.189	.630	99.379						
30	.186	.621	100.000						

Table 4.16 Rotated Component Matrix^a

	Component										
	1	2	3	4	5	6	7	8	9	10	11
Q1											.835
Q2							-.426	.470			
Q3								.750			
Q4		.567									
Q5		.696									
Q6		.704									
Q7						.426					
Q8						.801					
Q9							-.769				
Q10										.805	
Q11			.464							.529	
Q12			.700								
Q13			.773								
Q14		.648									
Q15	.417										
Q16						.581					
Q17	.443					.437					
Q18	.754										
Q19	.513							-.446			
Q20					.725						
Q21					.784						
Q22							.674				
Q23			.482		.504						
Q24									.731		
Q25									.739		
Q26				.428					.469		
Q27				.760							
Q28				.790							
Q29	.686										
Q30			.472								

The first factor

This factor is very significant and significant in influencing the practice of running in Kurdistan region iraq/Erbil as it explains (15.882%) of the total variance, and saturation of this factor is a significant saturation of the following variables in sequence:

(Q15) (Impact of the presence of electronic commerce on AIS) By (.417), (17) (Using e- commerce provides accounting information in the appropriate time for the decision makers?) by (.443), (Q18) (Electronic commerce has changed the way financial of Companies) by (.754), (Q19) (Affecting electronic commerce on the speed and capacity of the work of the accounting system) by (.513), (Q29) (E-commerce helps to code the data exists on the accounting information system) by (.686).

The second factor

This factor comes in second place in terms of importance, it explains (8.449%) of the total variance, and satisfies this factor by the significant saturation of the following variables in sequence:

(Q4) (Provide a system for the client to pay the price through a credit card) By (.567), (Q5) (Provide a system for how to request customers to the company's products and services electronically) by (.696), (Q6) (Selling products and services through the Web site) by (.704), (Q14) (Using e- commerce facilitates obtaining accounting data) by (.648).

The third factor

This factor comes in third place in terms of importance, it explains (7.149%) of the total variance, and satisfies this factor by the significant saturation of the following variables in sequence:

(Q11) (Training on the use of electronic equipment can increase the scope of use in your work) By (.464), (Q12) (The existence of phantom companies is preventing electronic transactions) by (.700), (Q13) (The freshness of the experience leads to uncertainty in entering the field of e-commerce) by (.773), (Q23) (Using e-commerce restores stored data accurately) by (.482), (Q30) (e-commerce provides

accounting information based on Primary data supported documents or objective facts) by (.472).

The fourth factor

This factor comes in fourth place in terms of importance, which explains (6.549%), of the total variance, and meets this factor through the great saturation of the following variables sequentially:

(Q26) (Electronic commerce helps to categorize data accurately) By (.527), (Q27) (Electronic commerce helps to increase and diversify the pattern of outputs of accounting information systems) by (.760), (Q28) (Electronic commerce helps to reduce the time between the date of preparation of financial statements and the date of publication of these lists) by (.790).

The Fifth factor

This factor comes in fifth place in terms of importance, which explains (5.440%), of the total variance, and meets this factor through the great saturation of the following variables sequentially:

(Q20) (commerce applications supports the predictive value of accounting information) by (.725), (Q21) (Electronic commerce links the efficiency of accounting information with the economic value of the information(cost versus benefit) by (.748), (Q23) (Using e- commerce restores stored data accurately) by (.504).

The Sixth factor

This factor comes in sixth place in terms of importance, which explains (5.080%), of the total variance, and meets this factor through the great saturation of the following variables sequentially:

(Q7) (E-commerce is useful for those who work individually) by (.426), (Q8) (the E-commerce an entry strategy for international markets) by (.801), (Q16) (Electronic commerce has affected the flexibility of the AIS) BY (.581), (Q17) (Using e- commerce provides accounting information in the appropriate time for the decision makers?) by (.437).

The seventh factor

This factor comes in eighth place in terms of importance, which explains (4.314%), of the total variance, and meet this factor through the large saturation of the following variables sequentially:

(Q2) (Provide e-mail service for customers) by (-.426), (Q9) (The lack of scientific expertise to deal with electronic devices leads to fear of being used) by (-.769), (Q22) (Using e- commerce provides appropriate accounting information for the decision makers?) by (.674).

The Eighth factor

This factor comes in eighth place in terms of importance, which explains (4.090%), of the total variance, and meet this factor through the large saturation of the following variables sequentially:

(Q2) (Provide e-mail service for customers) by (.470), (Q3) (Provide a system for direct query for any information needed by the client) by (.750), (Q19) (Affecting electronic commerce on the speed and capacity of the work of the accounting system) by (-.446).

The Ninth Factor

This factor comes in ninth place in terms of importance, which explains (3.864%), of the total variance, and meets this factor through the large saturation of the following variables sequentially:

(Q24) (Using e- commerce provides totally accurate information) by (.518), (Q25) (Electronic commerce affects how data is entered into documents) by (.739), (Q26) (Electronic commerce helps to categorize data accurately) by (.469).

The Tenth Factor

This factor comes in tenth place in terms of importance, which explains (3.808%), of the total variance, and meets this factor through the large saturation of the following variables sequentially:

(Q10) (The lack of scientific expertise to deal with electronic devices leads to fear of being used) by (.805), (Q11) (Training on the use of electronic equipment can increase the scope of use in your work) by (.529).

The Eleventh Factor

This factor is ranked 11th in terms of importance, which explains (3.493%), of the total variance, and meets this factor through the large saturation of the following variables sequentially:

(Q1) (Provide general information about the company's products and services) by (.835).

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1. CONCLUSION

The targets of this study were to identify the effect of electronic commerce on improving accounting information system. This study comes to the following results and conclusions.

1. There was a positive relationship between the electronic commerce and development of AIS.

There was a positive relationship between the electronic commerce and properties of AIS as well. There was a positive relationship between the electronic commerce and components of AIS. However, there was a positive relationship between the electronic commerce and of AIS.

The selection e-commerce and development of AIS was found to be at the highest positive correlation.

2. In addition, there was statistically the electronic Commerce effect of Development of AIS with the highest positive effect. The electronic Commerce effect of Properties of AIS because it was statistically significant. The electronic Commerce effect of the components of AIS was statistically significant.

3. Statistically, respectively, these three questions having the greatest impact on improving accounting information system;

A) Electronic commerce has changed the way of financial Companies.

B) E-commerce helps to code the data exists on the accounting information system

C) Affecting electronic commerce on the speed and capacity of the work of the accounting system.

4. Electronic commerce has affected the flexibility of the AIS that provides appropriate accounting information for the decision makers and helps to categorize data accurately.

5. Working on the context of electronic commerce will affect the basic components of the accounting information systems represented by: the documentary group, the book collection, the accounting manual, the set of reports and financial statements, which requires consideration of these effects and their implications for the process of designing accounting information systems.

6. Electronic commerce has been a highly sophisticated technology, affecting all professional fields in general and the accounting profession in particular.

5.2. RECOMMENDATION

Based on the theoretical study, the results of the field study and statistical analysis of the questionnaire, we can come up with a number of recommendations:

1. Adapting the accounting theory and modernizing its concepts in line with the new trading environment, namely the e-commerce environment.

2. Every company in the Kurdistan Region Iraq /Erbil operating in an e-commerce environment should have an integrated information security system, and its regulatory systems should achieve the goal of providing confidence in information systems.

3. The need to contain the study materials, especially the accounting information systems, on the vocabulary of using ICT methods in general and e-commerce in particular, in order to prepare the accounting staff to be graduated from colleges and scientific institutes on how to understand the nature of these methods and how to use them in the work of accounting information systems.

4. Financial services must be developed, enhance the credit system and upholding standards of financial transfers that can facilitate the adjustments of accounts and payments resulting from e-commerce.

5. The necessity for the accountants to update their professional information about newer E-Commerce in the modern technology and its requirements, so that accountants can deal with this type of activities efficiently and effectively.

6. The need to alert the Government to contribute to the establishment of international legislation governing electronic commerce transactions, the revision of domestic and international accounting standards, their formulation in line with the changes introduced by electronic commerce and the development of an accounting standard that includes a specific range of e-commerce transactions.

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APPENDIXES

QUESTIONNAIRE

PART 1: DEMOGRAPHIC

Please answer the questionnaire by put a mark () based on your personal information:

1. Gender:

Male

Female

2. Age:

Less than 30 years 30-less than 40 years

40-less than 50 years More than 50 years

3. Qualification:

Diploma BA degree MA degree PH degree

5. Specialization

Accounting business administration Financial

Economic Other, Identity

5. Job Description

Accountant manager commercial manager financial manager

Accountant Financial auditor other, Identity

PART 2: ELECTRONIC COMMERCE

Electronic commerce Applications

NO	Statement	Strongly agree	Agree	Uncertain	Disagree	Strongly Disagree
1	Provide general information about the company's products and services.					
2	Provide e-mail service for customers					
3	Provide a system for direct query for any information needed by the client					
4	Provide a system for the client to pay the price through a credit card.					
5	Provide a system for how to request customers to the company's products and services electronically.					
6	Selling products and services through the Web site.					
7	E-commerce is useful for those who work individually.					
8	the E-commerce an entry strategy for international markets					
9	Using e-commerce improves the performance of users within the company.					

10	The lack of scientific expertise to deal with electronic devices leads to fear of being used.					
11	Training on the use of electronic equipment can increase the scope of use in your work.					
12	The existence of phantom companies is preventing electronic transactions.					
13	The freshness of the experience leads to uncertainty in entering the field of e-commerce.					

PART 3: Accounting information system

1. development of AIS

NO	Statement	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
14	Using e-commerce facilitates obtaining accounting data					
15	Impact of the presence of electronic commerce on AIS					
16	Electronic commerce has affected the flexibility of the AIS					
17	Using e-commerce provides accounting information in the appropriate time for the decision makers?					

18	Electronic commerce has changed the way financial of Companies.					
19	Affecting electronic commerce on the speed and capacity of the work of the accounting system.					

2. properties of accounting information systems

NO	Statement	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
20	The use of e-commerce applications supports the predictive value of accounting information					
21	Electronic commerce links the efficiency of accounting information with the economic value of the information(cost versus benefit)					
22	Using e-commerce provides appropriate accounting information for the decision makers?					
23	Using e-commerce restores stored data accurately					
24	Using e-commerce provides totally accurate information					

3. components of accounting information system

NO	Statement	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
25	Electronic commerce affects how data is entered into documents					
26	Electronic commerce helps to categorize data accurately					
27	Electronic commerce helps to increase and diversify the pattern of outputs of accounting information systems					
28	Electronic commerce helps to reduce the time between the date of preparation of financial statements and the date of publication of these lists					
29	E-commerce helps to code the data exists on the accounting information system					
30	e- commerce provides accounting information based on Primary data supported by documents or objective facts					

PERSONAL INFORMATION

Personal Information	Name & Surname	JAWAD SADQ SAEED
	Place and Date of Birth	Erbil / Iraq/ 1987
	Nationality	Iraqi, Kurdish
	E-mail	Jawadsadeqs@gmail.com
Education Level	University	SELAHADIN University- Erbil
	College	ADMINISTRATION AND ECONOMIC
	Department	ACCOUNTING
Language Skills	Kurdish	Mother Tongue
	English	Good
	Turkish	Little
	Arabic	Good
	Persian	Very good
Work Experience:	ACCOUNTANT	

