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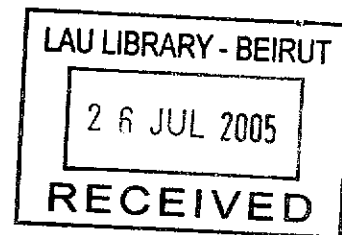
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LEBANESE AMERICAN UNIVERSITY
School of Business

**An assessment of Electronic Commerce: A consumer
perception point of view**

Abir Machaco

June, 2002



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**An assessment of Electronic Commerce: A consumer
perception point of view**

**By
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Submitted in partial fulfillment of the requirements for the degree of
Master of Business Administration

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Lebanese American University
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June, 2002

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Approval of research Topic

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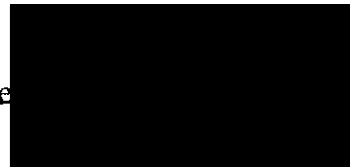
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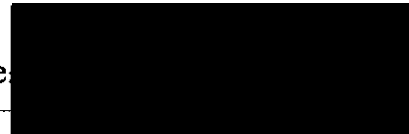
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June, 2002

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*To the symbols of Love, forgiveness, help, and patience:
To my caring father Sami and my tender mother Samira*

To Chadi, Ibrahim and lovely Rosa.

To the man I will always love, Hasan

Abstract

Electronic Commerce is becoming an area of strategic concern to most organizations. Enabled by new, networked technology, e-commerce is rapidly becoming an integral part of the many different ways people and organizations do business and manage information.

The Internet economy is expanding very rapidly and the pace of change is speeding up. While E-commerce is growing rapidly in the world, E-commerce in Lebanon is still in its embryonic stage. In fact, only 2% of the population is online.

This study is done in order to shed light on electronic commerce in the world and all the business models since its initiation till our days. But the most important is to analyze to what extent the Lebanese customers as well as the businesses accept the Internet as a means of doing business.

A descriptive analysis is adopted to present the study results and analyze the findings in a way that enables the researcher objectives, which are the assessment of E-commerce implementation in Lebanon

Data has been collected and acquired from three sources: secondary sources, and primary sources.

The primary data are divided between a questionnaire analysis and a case study about a Lebanese online organization followed by an interview with Mrs. Rola Moussa, the manager.

Another interview was also held with Dr. Salah Rustum, CEO of GlobalSign to shed light on electronic commerce in Lebanon as well as the security issues and digital signatures.

The questionnaires were filled by students from (LAU), (AUB), (AUST), and (USJ) as well as Faculty from LAU. Employees came from a broad variety of ~~organizations belonging to various sectors and from different managerial~~ sectors and functional divisions such as banks, Medical Institution, and Trading Companies. More than two hundred and ten questionnaires were distributed to students and employees. Only one hundred fifty one questionnaires were filled and returned. That is, 72% was the response rate.

The analysis of data was done through the facilities of a statistical package of social science (SPSS)

The concepts to be assessed are as follows: Internet Literacy, Electronic Commerce Literacy, and attitude toward electronic commerce.

Lebanese users do accept all new technologies and electronic commerce is being accepted in a way or another by the educated people first and it will be widespread among the majority of the Lebanese users. Thus, implementing new education systems that enhance Internet literacy and reducing the cost of

going online, will encourage the use of the Internet and consequently will increase Electronic commerce and its applications.

Accepting Electronic commerce as the most effective way to do business is finally related to patterns of future life and the mentality of people.

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CHAPTER I

Introduction

1.1 Dynamism of the Environment

At the turn of the twenty-first century, global communications is changing the fabric of society at a rate never experienced before. The Internet, in particular, has redrawn the map of the global economy. To be competitive in today's marketplace, companies need to expand commercial activities beyond national borders. The global network of electronic infrastructure has played a significant role in this expansion but the technology itself is not the factor driving the business revolution. The changes are driven by the interaction of information technology and customer demand. Customers are not only adapting to new technologies, they are demanding more and more global competition (Gibeily, 2000, 33).

In many ways, the term "new economy" does not do justice to the changes going on in the world today. The most obvious differences between now and a few years ago include lower unemployment rates, an absence of inflation, startlingly low interest rates, and the amazing growth of new industries such as electronic commerce (Internet: Mandel, 1998). At the same time, the increasing globalization of economic activity has brought new risks. Besides the recent economic forces, changes are labeled technological, political, institutional, and organizational as well.

The entire global economy will turn out to be Silicon Valley. In this view, understanding networks will turn out to be the key to success. Communication is not just a sector of the economy; communication is the economy. Companies should then focus on networks and connections.

But while the chip and the Net are important, there are big chunks of the economy-- health care, education, government, financial services-- that at least so far seem to work on different principles. So while it may be true on the Internet that prices move inexorably toward the free, there is no reason to expect hospitals to start giving away health-care services, for example (Internet: Mandel, 1998).

According to Michael Mandel, Electronic commerce, therefore, is arguably the most important economic trend of our time. Its presence on the Internet, in particular, is becoming crucial to the effective functioning of organizations, especially in a world where companies need to deal with suppliers, customers, partners and their own units distributed across the world.

1.2 Globalization Requirements

Globalization is becoming:

- 1- A destiny thanks to the technology and mass communication as well as getting the world smaller.
- 2- A political, economical, and cultural project: capitalization dominance, money dominance, creativity dominance,...

Globalization is, on the other side, a project or fact that possesses economic, cultural and political tools but the question is what serves what in that globalized world?

Does the economy serve the politics? Or culture is serving the economy? Or does politics serve economy? Which one is really prioritized?

In fact, Lebanon is highly affected by all those factors. Of course, isn't anyone talking about globalization? And all global factors actually affect anyone (Internet: O'Connor et al, 2000).

Everything is being globalized. So, it is now time for the Lebanese organizations to ~~start forming an understanding of globalization, including its informal conditions, and~~ should develop and market a product or service in which they might have a competitive advantage in it. It is not how many products one has, it is how much are they successful throughout the world, and to what extent they really satisfy global needs. For instance, the economy of Finland depends on a single main global product; Nokia (a product they have competitive advantage in it).

That means that only countries that succeed to develop competencies in a product or service are the only ones to survive in the globalization trend.

In fact, Lebanon should benefit from the fact that no single government or country is directing the global economy and market. That means Lebanon is not obliged to get approval or be connected to a government.

Under globalization, each one can benefit if he really knows what to choose and to find the way to international competition. Lebanon has its little opportunities in the global market.

1.3 Dynamics of Technology and Growth of Electronic Commerce

Fay Sudweeks (Sudweeks, 1998, 65-77), introduces the launch of the Internet and its evolution in the business world: "The take-up of the Internet was accelerated by the invention of the World Wide Web in 1991 at European Organization for Nuclear Research (CERN) by Tim Berners-Lee and Robert Caillau, and the subsequent development of browsers like Mosaic, Netscape and Explorer." This "Killer" technology combined the worldwide-accepted computer-to-computer communication protocol TCP/Internet Protocol (TCP/IP), which gives access in a uniform and simple way to the Internet as a "network of networks", with a straightforward visual way to access information from any of those sources.

According to Elisabeth Gerle (2000), it is sometimes argued that globalization is nothing new. During the last centuries the world has always been interconnected and interdependent. Yet, most analysts agree that the revolution in technology and its relationship to time and space are new. Never before has it been possible to communicate around the globe in a fraction of a second.

Electronic Commerce is now developing rapidly on the basis of the Internet and the WWW. However, much more is needed than access to information to make electronic commerce work. Essential functionality first of all includes reliable and high-capacity communications infrastructure. The Internet is still too congested; making users reluctant to commit to electronic commerce or even leading to them turn away. It also includes electronic payment in all its modalities, from electronic checks to digital money for micro-payments, security for privacy protection and the protection of copyrights on digital content, application-to-application communication, search and navigation to deal with large amounts of information, and user interface design.

1.4 Electronic Commerce History

1.4.1 Definition & Markets

Electronic commerce was defined by Nabil Adam (1999, 57) as the enablement of a business vision supported by advanced information technology to improve efficiency and effectiveness within the trading process.

In other words, Electronic commerce or e-commerce covers the range of online business activities for products and services, both business-to-business and business-to-consumer, through the Internet. Elias Awad (2000) has divided E-commerce into:

- **Online Shopping** the scope of information and activities that provides the customer with the information he/she needs to conduct business with you and make an informed buying decision.
- **Online Purchasing** the technology infrastructure for the exchange of data and the purchase of a product over the Internet.

Online shopping provides information and activities that give the customers the knowledge to make informed buying decisions. A consumer who is interested in purchasing a car may research the prices and features of cars online. The Internet provides him with an easy way to shop for different products so he can compare features, functionality, and price online. For business-to-business transactions, online shopping may entail an Extranet that includes information that business partners may need to conduct business. Online shopping for business-to-business transactions speeds up the information gathering and access process, providing timely access to accurate information.

According to Awad, Online purchasing is defined as the infrastructure to allow the purchase of products over the Internet. The effect of E-Commerce on Global Enterprises can be summarized in the following five points:

- ▶ Competition on a global basis: 24 hours a day, 7 days a week
- ▶ Connected to customers, suppliers, Partners
- ▶ Decentralized, Empowered workforce

- ▶ Technology used as a competitive Differentiator
- ▶ Sophisticated investors focused on real economic value

1.4.2 Goals

Many businesses have gone online. Moreover, many new and international businesses have started as virtual organizations in order to reach many goals and strategies. In other words, reaching the following goals would be easier and more efficient if the business transactions are going online.

Seamless integration of business-to-business transaction and information processing.

- Shorten life cycles
- Cut costs
- Accelerate collaboration
- Improve information quality
- Reach global markets.

1.4.3 Size

The Internet economy is expanding very rapidly and the pace of change is speeding up. A study done by International Data Corporation shows the evolution of different Internet products and services through a comparison of revenues during 1996 and 2000, as depicted in Table 1.1

Table 1.1 Worldwide Internet and Intranet products and services, 1996 and 2000

Product / Service	1996 (\$M)	2000 (\$M)	Growth (%)
Internet Access	3,149	11,300	37.6
Personal Computers	5,511	16,200	30.9
Network Computers	706	15,440	116.3
Servers	2,247	13,150	55.5
Network Equipment	3,500	10,300	31.0
Software	916	12,221	91.1
Services	2,477	13,770	53.6
Total	18,506	92,381	49.5

Source: International Data Corporation, 1997, "How big the Internet/Intranet Market?"

1.4.4 Applications & Uses

Using the Internet is helpful in different fields. Electronic commerce applications are the following:

- Sales
- Teleworking/ Telecommuting
- Consumer Services (entertainment, banking, shopping, support)
- Professional services (consultation, information exchange)
- Local services (education, training, facilities management, transportation)

Electronic commerce applications are growing thanks to the technological innovations. If one compares the start of the electronic commerce and its applications with the current years, he can easily see the increase of the electronic commerce transactions. The market researcher Gartner Group has done a study and a forecast of the business-to-business online transactions from 1999 till the year 2004 (Internet: Gartner, 1999).

The evolution of Internet through the last few years and more information about the business-to-business transactions are shown in Exhibit 1.1.

Exhibit 1.1 Electronic Commerce Today

The amount of business-to-business electronic commerce is set to soar, according to a new study from market researcher Gartner Group. The value of e-commerce is projected to nearly triple in January 2000, to \$403 billion, and then surge to \$7.39 trillion. A key component in the boom will be electronic market makers, or organizations that develop Internet marketplaces for particular industries or geographic regions. By creating markets on the Net, these e-market makers create compelling reasons for corporations to conduct business over the Net

The Value of Business-to-Business

Electronic commerce transactions (in billions):

1999	145
2000	403
2001	953
2002	2,180
2003	3,950
2004	7,290

Source: Market Researcher Gartner Group: Internet, 2000

Business-to-Business electronic commerce is booming, and the growth isn't going to slow down anytime soon. Total trade between companies is projected to soar to \$1.33 trillion in 2003 from \$109.3 billion in march 2000, according to Forrester Research. That's an annual growth rate of 99%. So which industries are going to be most impacted by the B-to-B boom? The answer to this question is shown in Table 1.2 next;

Table 1.2 The most impacted Industries by the B-to-B boom.

	1999	2000	2001	2002	2003	
Computing & electronics		\$50.4	121.4	229.1	319.1	395.3
Motor Vehicles	9.3	22.7	53.2	114.3	212.9	
Petrochemicals	10.3	22.6	48.0	96.8	178.3	
Utilities	15.4	32.2	62.9	110.6	169.5	
Paper & Office Products		2.9	6.4	14.3	31.1	65.2

Source: Forrester Research (Internet Publications, 2001)

More and more people are coming online to shop, and the number of purchases that they're making each year has been increasing exponentially. Those new to e-shopping are making 9 purchases a year, and those with more web experience (5+ years online) are making 20 purchases a year (Forrester Research: Internet, 2001)

1.4.5 Growth of Electronic Business

Online Shopping has grown a staggering 580% between 1998 and 2001.

It is true. Forrester Research reported growth from \$7.8 billion US in 1998 to \$45 billion US in 2000. Online spending is growing at fantastic speeds. E-shopping is becoming a routine part of consumer life. In fact, online shopping has increased by 580% in the past two years and shopping online is becoming a regular part of consumer life.

However, going online does not provide success for any business. Every business management has to plan and well-organize its online business strategies.

The following exhibit shows what mistakes some businesses commit when going online

Exhibit 1.2 Top Three Mistakes Made by Dot-coms gone Dot-Bomb

These mistakes are the unsuccessful strategies made by some businesses

Mistake #1: Tried to be everything to everyone.

Mistake #2: Threw millions of dollars of venture capital at an unproved business plan that required years of blood, sweat and tears to reach profitability.

Mistake #3: Invested buckets of cash in unprofitable advertising.

Source: (Internet: Wildstorm, 2000)

Al Gore, U.S Ex-vice president, was interviewed about the electronic commerce issues and the privacy. A summary of the interview is shown in Exhibit 1.3

Exhibit 1.3 Al Gore on Electronic Commerce (www.businessweek.com/bwdaily)

Al Gore on Electronic Commerce

Ex-Vice President Al Gore is always happy to discuss the emerging issues of the 21st century economy. On a recent jaunt to San Francisco and Silicon Valley, Gore talked about tech-- and other issues-- at the roundtable discussion with Business Week White House correspondent.

Al Gore said that Electronic commerce did better than anybody expected in the year 1999. But the dilemma here is that the government does not want, in any way, to stifle the most rapid possible development of E-commerce. It is an exciting wave of the future. At the same time, everybody understands that local and state governments have a strong and legitimate interest in not seeing the destruction of the revenue base upon which they depend. Somehow, we need to achieve both of those goals. To their credit both groups have worked very well together in trying to come up with innovative solutions on how to reconcile these matters. the moratorium is designed in part to give them a grace period to come up with a solution.

Concerning the electronic privacy issues, Al Gore outlined and presented an electronic privacy bill of rights to give new guarantees to private citizens. However, Al gore thinks that the current balance is inadequate and that he should do more to protect privacy.

Source: (Internet: Harbrecht, 2000)

1.5 Electronic Commerce in Lebanon

Electronic commerce applications are mushrooming in Lebanon. Many organizations have established a web presence and increasingly their home pages include facilities to buy, book or contract. With all this activity there is one thing missing- sales. It is true that sales are slightly increasing and that a select few e-vendors have grown very

rapidly but overall, e-commerce business, conducted via the Internet, remains a minute fraction of total retail sales. From Elmazad to SoukLebanon, everything from microwaves to CDs to medical chairs are being sold over the internet. But e-commerce is still in its embryonic stage. According to a study done by Atallah (2000, 8) only 2% of the population is online. Electronic commerce sales are estimated to be around \$20 million yearly, most of which is business to business. But e-commerce is more than just buying goods at the click of a mouse. It is changing the way of life, work and business. The sooner one unlocks its power, the faster one can reap the benefits.

Some of these benefits are summarized below in Exhibit 1.4.

Exhibit 1.4 E-Commerce benefits

i) Cost Reduction

E-commerce reduces the price of goods and service. In this physical world, goods move from manufacturers to wholesalers to distributors and finally to consumers. E-commerce gives consumers the opportunity to buy goods straight from the manufacturer, avoiding the markups charged by intermediaries. Consumers are the winners. With the Internet, they are armed with more options and information to find lower prices.

ii) Customized Goods and Services

E-Commerce provides consumers with customized goods and services. Suppliers produce product lines that they believe will appeal to buyers. Thanks to e-commerce, consumers can design their own products by selecting from a menu of attributes, components, prices and delivery options. With this power, companies can secure the loyalty of their customers like never before. More importantly, with each transaction, a company becomes more aware of the customer's needs and wants. Hence it is better able to anticipate and fulfill them.

iii) Accessibility

E-commerce also gives people access to the global marketplace. Businesses are no longer restricted to geographic locations. But the government must foster an environment that encourages the use of the Internet. It must ensure that the telecommunications infrastructure is high quality, reasonably priced and up-to-date. Since the end of the civil war, the government has rehabilitated and expanded its telephone network. Today there are more than 976,000 phone lines. The number of Internet service providers (ISPs) has increased from two in 1996 to 15 in 2000 (Atallah, 2000, 8). Intense competition has brought monthly connection fees down from \$250 in 1996 to \$10 today. Also, cable connections are becoming popular where the subscription costs from \$30 to \$45 per month including the telephone bill. But there are still 84,000 Internet users in Lebanon.

Source: (Atallah, 2000, 9)

Internet use and electronic commerce awareness have been highly increased in Lebanon through the last years; however, there are several suggested steps to enhance the Lebanese electronic commerce interest:

Step 1: Access must be increased and prices must decline further.

Step 2: In order to maintain and improve technology, it may be best to privatize telecommunications.

Step 3: Beyond privatization, the government must build Internet access capabilities.

Step 4: At the same time, the financial sector must be able to handle online transactions, by providing easy-to-use payment tools that permit the rapid transfer of electronic funds across borders. The security and authentication of those funds must also be ensured.

However, Lebanon's dynamic banking sector should have little trouble meeting this challenge. But bottlenecks remain. Although credit and debit cards are spreading, people are reluctant to make purchases over the net because they fear fraud and abuse.

Step 5: An efficient distribution and delivery system must also be assured. Without this, all the benefits of e-commerce will erode. These include transportation, customs and postal infrastructure. Lebanon's record has been dismal in this regard. Transportation into Lebanon is relatively expensive (Atallah, 2000, 9).

1.5.1 Online Banking in Lebanon

Banks have long been looking to the web to help them reach customers. Similar to automatic cash machines, computers allow customers to bank without taking up expensive bank teller time. But so far- and unlike online stock trading that is practiced by a growing core of private Lebanese entrepreneurs- online banking has not been a Killer application. Consumers have been just as slow as the banks to accept the Internet as a medium for managing everyday money matters. This isn't just a local syndrome. Even in the US, the Internet backbone and trailblazer for e-

models, of the 37% of US homes that have Internet access, less than 20% of that figure actually bank online (Gibeily, 2000, 23).

Lebanese banks are starting to approach the Internet and online banking as, globally, clients become more secure with online financial transactions and e-business models. In fact, Lebanese banks are aware of the rapidly increasing interest in the Internet by consumers. While surfing the web, the customers will check out the bank's website and what it has to offer and begin making transactions via the Net.

According to Gibeily, Banks could even play a leading role in transforming e-commerce in the region from a curiosity to a mass phenomenon. At the moment, most Lebanese banks have a wait-and-see strategy for the age of digital commerce and they are reluctant to follow initiatives taken by the Western banks and international credit card and associations. This may change soon because of pressure from new commercial interests establishing themselves on the Internet. Many of the merchants, especially those selling digital content like software, need the banks to ask them their help to prevent fraud and expensive losses. Banks have been slow to see the huge potential. The market place is showing that the banks can provide tangible value also in cyberspace.

In the west, online banking is really taking off because banks are the trusted brands that can guarantee consumers and merchants a safe environment on the Internet without the risk of fraud. However, the smaller Lebanese banks need to get a system so secure that they are willing to cover losses on the merchants' side. Because of consumer skepticism payment over the Internet will remain a curiosity – or at best, a business-to-business province. Security remains the chief hurdle to the growth of online structures.

Online Banking in Lebanon is a new trend; however, Credit Libanais was a pioneer in the online banking services. Exhibit 1.5 presents the experience of Credit Libanais Bank in Online Banking (Gibeily,2000, 35).

Exhibit 1.5: A Lebanese Experience in Online Banking

Amid a flurry of high-profile advertising to boost online banking, Credit Libanais rolled out its Internet service at the end of July. More than 2,500 of a customer base of around 90,000, or 3%, are already using that service today. Lebanese consumers want speed and the key benefit of always knowing in real time where their finances stand. That's the initial attraction of online banking.

On paper, at least, Credit Libanais' online adventure has the stamp of success. Without divulging any exact figures as to the number of accounts and the extra deposits that their e-bank has brought them. They are pleased by the results in October and November 2000. But there are a number of financial institutions and banks that have yet to get to first base, and many have had to put off their Internet ambitions until they update their computer systems.

Credit Libanais, with sensitive online services that include money transfers and treasury and capital markets, are firm adepts of Secure Sockets Layer (SSL). The conservative buyers and sellers- which is most of the market- need this kind of assurance before they accept payment over the Internet. If it is not provided by the banks with the Secure Sockets Layer (SSL) standard, it has to be done something very similar to it. And card holders can be assured that they don't have to worry about abuse of their card numbers on the Internet.

Given adequate security, will all banking services turn online one day? Probably not. The reality is, there aren't many customers who want to do everything on the Net. When it comes to their savings, most people demand that there be some vault somewhere in the physical world where their physical money may be stashed, and while electronic banks may offer better interest rates on deposits and loans because they have virtually no overhead compared with traditional banks, the costly clusters of branches are still valuable assets. The fact that a bank has a physical branch in the vicinity of a client is an enormous advantage and will remain as such. The faith that most consumers place in traditional banks is a powerful competitive advantage to offline banks.

The problem Lebanese banks have had historically is that they rely on loyalty and so they could take their sweet time to get electronic, but it's apparent that Lebanese

banks are already fine-tuning their strategies to capitalize on the booming demand for accessing information from anywhere.

Making account information available electronically is certainly a step toward offering what customers really want: a single, online source of up-to-date information about their finances, including savings and checking accounts, credit cards and other investments.

The Internet does offer great opportunities for banks. But if they are to get the greatest benefits from e-business, they must ensure that their brands stand out in cyberspace- not just that their sites are well built and easy to use.

With most major Lebanese banks rushing to perfect online services, use of the Internet as a key channel for financial transactions is expected to grow dramatically over the next several years.

Lebanese banks must therefore take steps to establish their identity if they are to develop a strong presence and thrive in a digital environment.

Other than Credit Libanais there are many Lebanese banks that have gone online (being Internet or on phone). Table 1.3 shows 12 Lebanese Banks or Lebanese-branch banks that went online or not. Table 1.3 was updated on the 10th of June 2002 by the researcher.

Table 1.2 Lebanese Banks Going Online

Bank	Online Banking	Phone Banking
Credit Libanais	Yes	Yes
HSBC	Yes	No
Byblos bank	No	No
Banque Audi	Yes	Yes
Banque du Liban et d'Outre Mer	Yes	No
Arab Bank	Yes	Yes
Bank of Beirut	No	No
Fransabank	No	Yes
BBAC	No	No
Banque Saradar	Yes	Yes

BNPI	Yes	Yes
Beirut-Riyad bank	No	Yes

Electronic commerce in Lebanon is not limited to online banking; the Lebanese government is considering the Internet and the information technology.

1.5.2 Government's Business will go Online.

Government officials are starting to take a much closer look at the World Wide Web. Thanks in part to the Widespread appeal of the Net, the government is becoming much smarter about information technology systems and processes, and it is now directing that knowledge to Internet efforts.

The Lebanese government is still far from having its computer systems set up. "Our research indicates we should spend at least \$100 million a year for the next three to four years to establish a functioning e-government system," says Raymond Khoury, Information Technology (IT) strategy advisor for the government. The initiative seeks to create a virtual government field office that would serve as a single resource for citizens to search for information and eliminate the limit to stand in lines. Moreover, once up and running, the system would enable the public to conduct government business online, such as applying for a passport or paying a fine.

Ideally, the government would also streamline the payment clearing process so that businesses seeking licenses from various ministries could clear payments electronically through one source instead of several. But there are several obstacles that could slow such initiatives- the biggest of which is lack of funds. But finding appropriate private-sector partners and changing the business culture within the government so that e-commerce can be adopted may be just as difficult as raising the necessary money. Companies - especially dot coms- may find that doing business with the government will require two things Internet companies lack: time and patience.

To have a broader look at electronic commerce, it is important to have an overview on advertising in the Middle East...

1.5.3 Electronic Advertising in the Middle East

Advertisers and their agencies face new problems concerning planning and content when they use the Internet for marketing communications. The problems they face are those of practical planning problems caused by the fact that the audience is virtually anonymous. Not being able to know who can or who does receive the message makes classic target marketing, impracticable in terms of segmentation, reach and frequency. One cannot afford to display products in cyberspace in a way that offends or insults those who want to acquire it.

Internet advertising began in 1994, when the first banner ads were sold and the first commercially available Web Browser, Netscape Navigator 1.0, was released. The adoption rate of the Internet was examined and contrasted to the three other media: radio, network television and cable TV. Those in Internet publishing realize the Internet is, therefore, no exception. The challenge must be acknowledged and efforts made to include the Internet in their media plans. The World Wide Web will be one of the strongest brand building tools available.

The question remains as to the online effectiveness of e-advertising. In an effort to understand e-advertising's effectiveness, a study was done in an attempt to understand what was known and predicted about the medium within the context of direct marketing. The study was concerned with testing the medium's ability to move the traditional marketing communications measures of advertisement awareness, product attribute communication and purchase intent.

1.6 Conclusion

The previous five sections already discussed in chapter I analyzed the concept of Electronic commerce from the most general terms as the initiation of electronic commerce going through globalization and the growth of electronic commerce. In addition, chapter I discussed the history of electronic commerce in details including its markets, goals, size, applications and uses. In fact, the most important section in the previous chapter is the applications of electronic commerce in Lebanon.

1.7. Need of the Study

There is a significant increase of e-commerce and specially e-shopping in Lebanon. While this topic is becoming increasingly popular, there is a lack of Lebanese research on this topic. Thus, this study is needed for two reasons:

- (1) there are few researches done analyzing all the topics included in this study
- (2) Data and statistics on this topic are rapidly changing from year to year and this study provides the latest data and statistics.

Therefore, One area of special interest to this paper is assessing the growth the E-commerce in Lebanon as well as the customers' awareness towards this topic.

1.8. Purpose of the Study

Electronic Commerce is becoming an area of strategic concern to most organizations. Enabled by new, networked technology, e-commerce is rapidly becoming an integral part of the many different ways people and organizations do business and manage information.

In the current competitive climate, senior managers seek practical techniques to guide their management of e-commerce and to help them to decide where best to allocate costly company resources. However, many of its key qualities, such as convenience, variety and ease of access to information, are difficult to measure. For this, Electronic commerce is the most important business theme these days.

This study is done in order to shed light on electronic commerce concepts and the associated business models since its initiation till our days. But the most important is to analyze to what extent the Lebanese customers as well as the businesses accept the Internet as a means of doing business.

Concerning the Lebanese market, this study covers the familiarity of a sample of Lebanese customers with online shopping, online banking, online business models, and online advertising.

1.9. Methodology

Primary data is mainly collected through the use of structured questionnaires filled by students and employees since Electronic commerce involves everybody in Lebanon. More than 150 questionnaires are filled from universities and several organizations mainly banks then the data collected are analyzed through the use of SPSS.

The first step in working with SPSS is to enter the data and to create an SPSS data file. The next step is to compute means and standard deviations; once the data are typed and the data file is created performing statistical procedures is relatively simple. In addition to the means and the standard deviations for the collected variables other tests can be analyzed and the output will be highly detailed.

1.10. Structure of the study

This study is divided into five parts each part is a whole chapter.

Chapter one introduces the initiation of electronic commerce as the consequence of globalization and technology growth as well as a brief explanation of the definition, goals, size, applications, services, and requirements of electronic commerce in general. This chapter also includes an overview of the applications of electronic commerce in Lebanon from online banking to advertising to government use of the Internet. Several exhibits serve as examples for the topics discussed.

Chapter two consists of the literature review of this study. It covers almost all the ~~topics of electronic commerce from the components to the reasons for electronic~~ commerce initiations and a detailed review of the business models for electronic commerce. In addition, this chapter includes the security issue for E-business, as well as the marketing and management side for electronic commerce.

Chapter Three shows the research design and the methodology used in collecting the primary and secondary data.

The fourth chapter covers the detailed analysis of the results of the primary data. Results will be analyzed in a way that best describes the acceptability, application, and awareness of electronic commerce in Lebanon from a consumer and a business point of view.

Chapter Five presents the conclusion derived from the analysis output of all primary data as well as the limitations of this study, and the recommendations suggested by the researcher.

After mentioning the purpose of the study, the method used, and the structure of the study, the next section of this study is about the three components of EC and the reasons for initiation. However, the main section of chapter II is about the business models for electronic commerce as well as other issues like security for E-business and managing business web.

CHAPTER II

Literature Review

2. Introduction

This chapter explores the fast-changing world of electronic business and components as well as the e-commerce business models from different points of view for different writers.

E-commerce companies exchange “real products for real money through online channels”. This chapter discusses the security issues and the marketing strategies of E-commerce. The last section of this chapter covers the management side of E-commerce as well as the legal framework.

2.1 Electronic Business Components

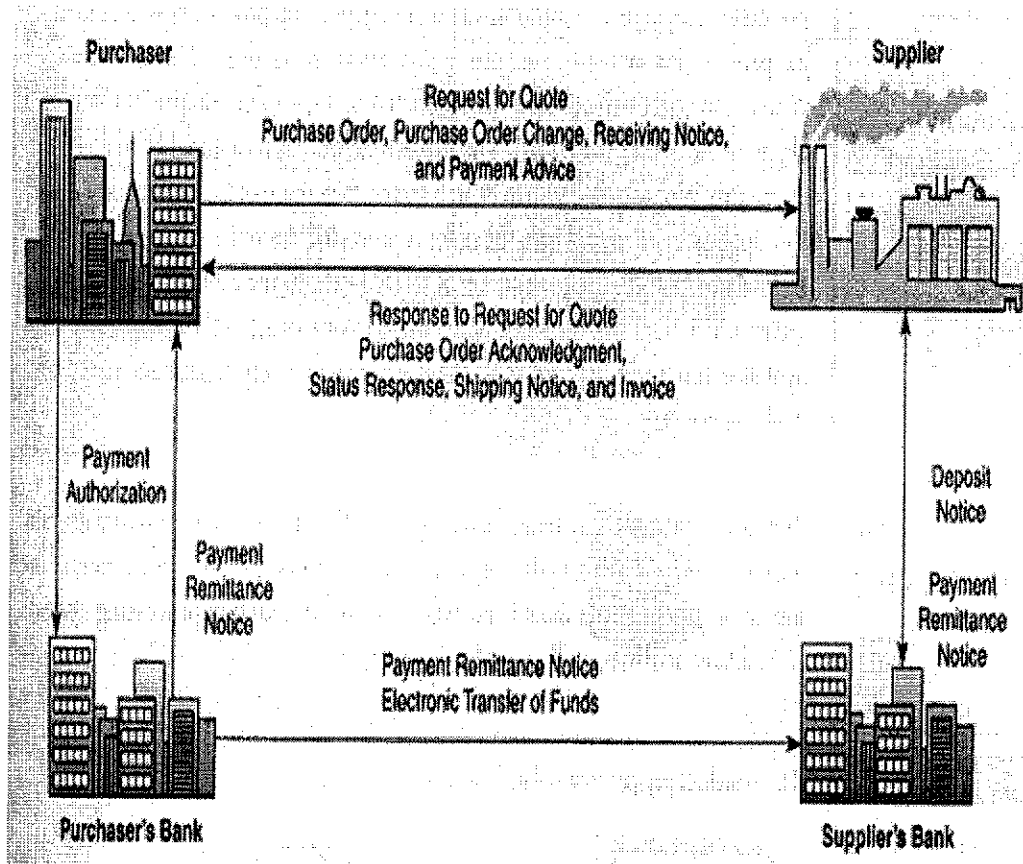
Electronic business is composed of three components: Electronic Data Interchange (EDI), Digital Currencies, Intranets and Extranets (McLaren, 2000, 65).

2.1.1 Electronic Data Interchange (EDI)

Electronic Data interchange (EDI) is defined as the interorganizational computer-to-computer exchange of structured information in a standard, machine-processable format. EDI is a type of electronic commerce by definition and has been around in the same form for over twenty years. Only recently have developments begun to take place to improve on EDI technologies and implementations. The premise of EDI is to facilitate commerce by tying business applications between trading partners together. EDI improves the manual process of exchanging information with other businesses in several ways (McLaren, 2000,78-88).

Formatted transaction data are transmitted over network links directly between computers without paper documents or human intervention. Many EDI service providers now offer secure, lower cost EDI services over the Internet (O'Brien, 2001, 328). Figure 2.1 illustrates a typical EDI system.

Figure 2.1 A typical example of electronic data interchange activities, an important form of business-to-business electronic commerce. EDI over the Internet is a major B2B E-commerce application.



O'Brien, 2001, 328

EDI can be defined as an application-to-application layer protocol. There are four tasks that are required to create and deliver an EDI message: mapping, extraction, translation, and communication.

According to McLaren, there are four major components of the EDI standards. Exhibit 2.1 shows the details of these components.

Exhibit 2.1. EDI components

- 1- **Data Element:** A data element is an individual piece of data, a price, or an organization's name. Each data element is identified by a reference number. For each data element, the dictionary specifies the title, description, type, number, and minimum/maximum length.

- 2- **Data Segment:** Each line is referred to as a segment and each item within the segment represents an element. For example, a purchase order line item segment is made up of a part number, a part description, a quantity, a unit of measure, and an item cost.
- 3- **Transaction set:** A transaction set is a specific document, such as a purchase order. Within a transaction set, there are three main areas: header area, detail area, and summary area.
- 4- **Functional Group:** this is a group of similar transaction sets. Transaction sets within a functional group are assigned the same functional identifier.

McLaren (2000, 92-95)

In this light, EDI seems to be a valuable component of Electronic commerce (EC) creating numerous benefits and advantages. However, the disadvantages associated with Internet EDI are found in two areas: security and the quality of service. Security over open networks relies on the strength of the encryption being long. Using the Internet for e-commerce applications still needs to acquire a satisfactory trust level among participants for widespread use of this medium for commercial activities (Afuah, 2001, 23).

2.1.2 Digital Currency

Digital currencies are intended to permit their users to move funds electronically within an environment. Furthermore, digital currencies are designed to serve as the electronic version of paper cash, carrying the same attributes as the physical medium-anonymity and liquidity.

First, Digital currencies rely on advanced information technologies and high-speed communications networks to store, transmit, and receive representations of value.

Second, digital currencies for the most part depend upon technological developments in cryptography to provide security in an open network environment.

Third, they rely on reduced costs and economies of scale created by technological advances (McLaren, 2000, 65-67).

Digital currency systems differ from other forms of electronic payment systems; digital currency schemes are currently the only electronic payment system that offer a fundamentally new system to facilitate payments. Electronic debit/credit systems and

credit cards systems for e-commerce over the Internet and similar open networks are functionally equivalent to their traditional systems (McLaren, 2000, 69).

When addressing digital currency systems, the media, the public and private sectors, and academia are all focusing on developments within these schemes.

These schemes share a few fundamental properties:

1. They represent monetary value.
2. They are exchangeable as payments for goods and services, currency and coin and other tokens.
3. They are stored and retrieved.
4. They are tamper-resistant in that they are difficult to copy or forge.

Beyond these characteristics though, the systems differ to some degree. Stored-value, or smart cards, retain value on a microchip embedded on a card, and are used in the "physical" world at the point-of-sale. Electronic cash refers to digital money systems that use computers to transfer value over networked environments, such as the Internet. Generally, stored-value cards have been more developed and further tested than electronic cash schemes.

These characteristics make smart cards a viable medium for a digital currency payment system.

2.1.3 Intranet and Extranet

Businesses are becoming internet-worked E-businesses enterprises. The Internet and Internet-like networks- inside the enterprise (intranets), and between an enterprise and its trading partners (extranets)-have become the primary information technology infrastructure that supports the business operations of many companies (O'Brien, 2001, 25).

According to McLaren, the definition of Intranet is: "a secure corporate network with rich functional features of Local Area Networks interconnected by the Internet and/or its technologies and applications".

One can broadly classify three types of benefits that incorporating Intranets into business practices can bring about. These are:

- 1- Streamlining business processes

- 2- Facilitating information dissemination
- 3- Enhancing communications and collaboration.

Currently most intranets are nothing more than a secure collection of web sites belonging to a group (usually a corporation) that are accessible only to members within that group, and with proper authorization. An extranet is an even more recently coined term and refers to an "extended Intranet". Current applications involve two or more Intranets that are linked together and accessible to each other's group members, and made possible by some sort of business agreement between partners. In another sense, extranets are certain areas of Intranets made accessible to outside members of the Intranet's group with proper authorization.

According to O'Brien, Intranets are designed to be open, but secure, internal networks whose web browsing software provides easy point-and-click access by end users to multimedia information on internal websites. For example, a human resources department may establish an intranet website so employees can easily access up-to-the-minute information on the status of their benefits accounts, as well as the latest information on company benefits options.

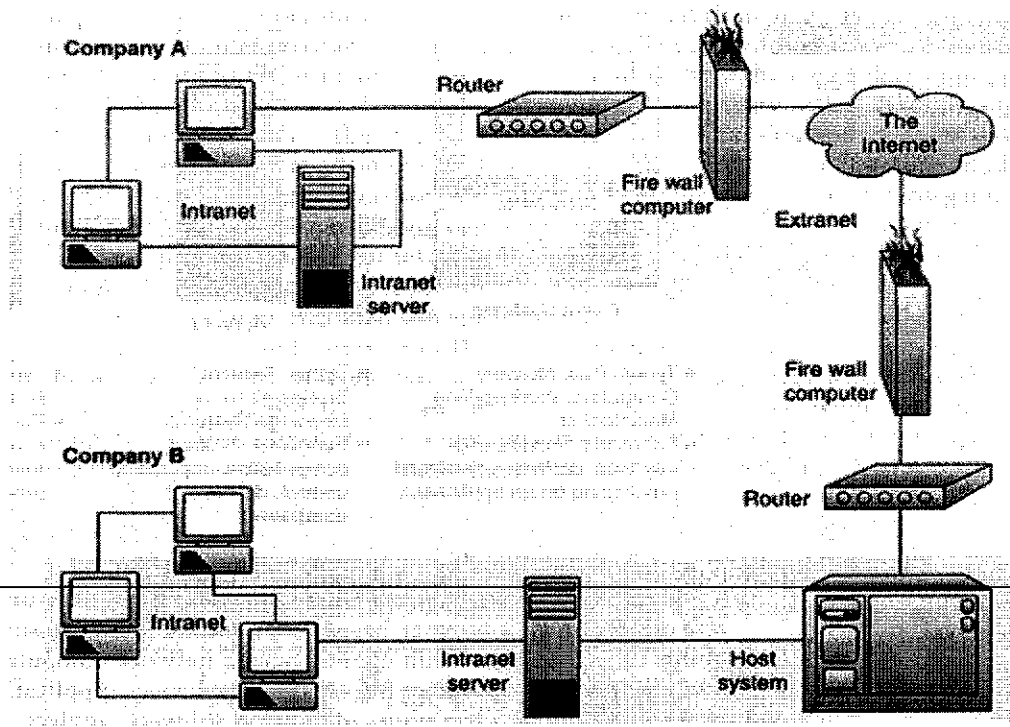
However, Extranets are networks that link some of the intranet resources of a company with other organizations and individuals (O'Brien, 2001, 217).

For example, extranets enable customers, suppliers, subcontractors, consultants, and others to access selected intranet websites and other company database. See figure 2.2 A breakdown of the specific benefits of implementing an Intranet or Extranet may distinguish between direct and indirect benefits that the organization incurs. The direct, tangible benefits created by implementing an Intranet or Extranet, even with its limited current functionality, are numerous. They can include: distributed, just-in-time access to a wide range of information and services; superior communication among employees; and reduced administrative work for the IT department, relative to other groupware applications.

Intranet and Extranet applications can be used in a number of a specific functional areas including: (1) Sales and marketing applications, (2) Human Resources Services, (3) Research and development applications, (4) Customer Service applications, (5) Finance and Accounting applications, (6) Manufacturing and Operations applications, and (7) Supply-Chain management (McLaren, 2000, 66).

Security issues are currently the biggest drawback impeding the widespread implementation of Intranet and Extranets systems. The nature of the information and data that passes over these networks (financial data, and specifications for new products) makes them an attractive target for hackers. Currently, Intranets and Extranets use firewalls to protect the security of information within their networks. Firewalls, proxy servers, and encryption currently provide the best protection from unauthorized access to sensitive company and transaction information (McLaren, 2000, 69).

Figure 2.2 An Example of Intranets and Extranets



2.2 The Reasons for E-Commerce Initiations

Companies have been marketing products to consumers through traditional media-TV, magazines, billboards, etc.- for decades. Marketing managers take advantage of the characteristics of each medium in implementing their marketing plan. Now

marketers have a new medium with its own unique qualities; the Internet (Rosen, 2000, 108).

2.2.1 The Electronic Commerce Business Case

When deciding whether or not to begin a new initiative, organizations formulate what is known as a business case to help analyze the pros and cons of that decision.

A business case is a tool that supports planning and decision making including decisions about whether to buy, which vendor to choose, and when to implement. Business cases are generally designed to answer the question: what will be the financial consequences if we choose X or do Y? (Rosen, 2000, 113)

For starters, the business case for e-commerce should: (1) identify processes that can exploit e-commerce technologies and applications; (2) ensure that operational, tactical and strategic benefits are considered; and (3) align with existing department strategies and technical policies when possible.

A business case for electronic commerce should recognize potential areas EC may empower. Moreover, participants need to consistently remind themselves that EC exists for business and not the other way around; it involves the use of technology within a business process, not just technology for technology's sake (McLaren, 2000, 72).

2.2.2 Difficulties in Establishing the Electronic Commerce Business Case

Assessing the business case for Information Technology (IT) implementation is not always cut and dry. IT investments are often criticized for their inability to create a solid business case. Implementing technology as a business solution is often cited as a result of "soft" incentives, such as competitive and strategic advantages. IT initiatives in business have difficulty deriving their financial justification because the benefits and effects involved in the initiatives are often beyond the immediate scope of the implementation (Rosen, 2000, 116-118).

While there has been a growing amount of information regarding the business value of IT projects in general, the business case specifically for electronic commerce is less well documented. In fact, what is well documented thus far, are the difficulties involved in creating a business case for EC. Still, some businesses are established successful business cases for their EC projects, and the business case for EC is improving as the industry matures (Rosen, 2000, 112).

2.2.3 Reasons for Electronic commerce growth

According to Martin and Gibeily, Internet commerce is growing so fast for the following reasons:

- Internet commerce has a low entry cost compared to other solutions such as EDI. A Web presence does not need to cost more than a few hundred dollars per year. For that amount one can have a Web page hosted on a server and online access for maintenance. Of course, a Web presence on its own does not deliver much competitive advantage when a massive presence of companies on the Web becomes a reality in the next few years (Martin, 1997,47).
- With low entry cost, a fast return on investment is also possible. A supplier who puts a catalogue online can build in direct support for regular customers with electronic ordering. Therefore Internet commerce can offer immediate cost savings. Internet electronic commerce start-ups can also reach break-even quickly. Several of the new Internet companies presented during an Internet electronic commerce contest in France early 1999, eLectrophées, were already profitable within a year. On average, they expected to break even in two years' time (Gibeily, 2000, 32).
- Internet commerce has the promise of protecting investment. Whereas EDI-based systems have a tendency to be specific to the trading or supply-chain relationship, it is the hope that web-based systems will be interoperable among suppliers. In this way switching costs are low and there is no need to buy multiple

systems. Internet commerce is based on open networks and standards, thereby helping to avoid lock-in (Gibeily, 2000,33).

- Internet commerce offers connectivity and communication. Getting access to the Internet usually means having an e-mail account and being able to browse the www. E-mail can bring immediate benefits in business-to-business commerce. Time can be saved by sending (simple) advertisements, order and delivery confirmations and enquiries via e-mail rather than by normal mail or even fax (Gibeily, 2000,34).
- Internet commerce meets information needs. to meet information needs it is sufficient to have a browser and surf the web. It is not necessary to create a presence on the web for the company itself (Martin, 1997,47).
- Internet commerce has already built up a critical mass, which attracts even more users and providers of the technology and business solutions (Gibeily, 2000, 34).
- Internet commerce is in a technology-driven "virtuous innovation cycle" of constant opportunity creation as a consequence of the very rapid progress of electronic commerce technologies (Gibeily, 2000, 34).

2.2.4 Advantages of E-Commerce

Internet commerce offers a range of advantages that collectively have been shown to be important enough to attract massive interest on the part of businesses, both as users of the technology and as providers of technology and solutions.

Exhibit 2.2 shows some of the advantages of E-commerce

Exhibit 2.2 E-commerce Advantages

- | |
|---|
| <ul style="list-style-type: none">• Availability. "Normal" business hours time constraints do not exist any more with online, 24-hours per day and immediate access. |
|---|

- **Ubiquity.** For most companies and customers there is no reason not to have Internet access- so assume that in the near future most will have it, just as we now assume that they have a phone and a fax.
- **Global.** With no physical borders for access (but not always for delivery), our mental map of what "near" and "far" will radically change.
- **Local.** Paradoxically, the Internet not only enables global commerce, but is also a perfect vehicle to reinforce local physical presence and local-to-local business relationships.
- **Digitization.** The real business will increasingly be happening in information space, even for physical products. Convergence is leading to the shake-up of major industries like telecommunications and broadcasting, as well as different thinking about the "natural" laws of economics, like increasing rather than decreasing returns of scale.
- **Multimedia.** A long-awaited combination of technologies is finally coming to business, not only to gain a competitive edge in information provision during buying and selling but also to provide completely new opportunities in consultancy, design and entertainment in combination with interactivity and networking.
- **Interactivity.** Interactivity is a challenge, namely to overcome the virtuality of the business relationship, as well as an opportunity for greatly improving traditional customer service at an affordable price.
- **One-to-One.** Based on data processing and customer profiling, possibly based on enriched interactivity, one-to-one marketing is a natural companion of doing business on the Internet business relationships.
- **Network effects and Network externalities.** Low cost and fast growth in the number of relationships enable business models that require a significant number of parties in the network and whose benefits increase faster with a growing number of parties. That is, these business models exhibit networks effects and/or network externalities. Examples are implementations of open market concepts such as virtual communities and third-party marketplaces.
- **Integration.** It has long been argued and to some extent demonstrated that the value of combined information across steps of the value chain is more than the sum of its parts. The Internet now provides at least part of the technology for value-chain functional and information integration. Advanced electronic commerce companies show how to exploit the added value.

Source: Gibeily, 2000, 36-37

According to O'Brien, most companies are building E-commerce websites to achieve six major business values:

- Generate new revenue from online sales.
- Reduce costs through online sales and customer support.
- Attract new customers via web marketing and advertising and online sales.

- Increase the loyalty of existing customers via improved web customer service and support.
- Develop new web-based markets and distribution channels for existing products.
- Develop new information-based products accessible on the web.

However, there is still hesitation among many companies about committing any major effort to electronic commerce, let alone about fundamentally rethinking their business strategy in line with the new opportunities. The reasons for this hesitation are summarized below.

- Lack of *awareness* and understanding of the opportunities and implications and uncertainty about the appropriate *business model*.
- Concerns about total costs, including the costs of retraining and the telecommunications (Internet: Wildstorm, 2000).
- Concerns about security of sensitive data, such as credit-card numbers, personal data and business confidential data.
- Concerns about interoperability and the risk that competition between major suppliers (e.g. Microsoft and Netscape) will lead to incompatible sets of standards (Gibeily, 2000, 38).
- Uncertainty about applicable law and the appropriateness of the legal framework.
- Lack of usability of the technology, difficulties in performing slightly more complicated electronic commerce than merely being present with a web page (Internet: Wildstorm, 2000).

3. Business Models For Electronic Markets

Business models are perhaps the most discussed and least understood aspects of the web. There is so much talk about how the web changes traditional business models. In the most basic sense, a business model is the method of doing business by which a company can sustain itself-- that is, generate revenue. Some models are quite simple. A Company produces a good or service that sells it to customers. If all goes well

revenues from sales exceeds the cost of operation and the company realizes a profit. Other models can be more intricately woven (Internet: Rappa, 2000).

3.1 Definition

According to Timmers, Electronic business over the Internet may be either complementary to traditional business or represent a whole new line of business. In either case, in view of the new features of the Internet, critical questions to be answered include:

- What are the emerging business models
- Which strategic marketing approaches are applied, or emerging.

However, before embarking upon an approach to construct business models, first a definition is given for what is meant by a business model.

A Business Model can be defined as follows (Internet: Timmers,2000):

- *An architecture for the product, service and information flows, including a description of the various business actors and their roles; and*
- *A description of the potential benefits for the various business actors; and*
- *A description of the sources of revenues.*

A business model in itself does not yet provide understanding of how it will contribute to realize the business mission of any of the companies who is an actor within the model. One needs to know the marketing strategy of the company in order to assess the commercial viability and to answer questions like: how is competitive advantage being built, what is the positioning, what is the marketing mix, which product-market strategy is followed. Therefore it is useful to identify beyond business models also “marketing models” (Internet: Frerichs, 2001).

A marketing model can be defined as:

- *A Business Model; and*
- *The marketing strategy of the business actor under consideration*
(Internet: Timmers, 2000).

3.2 Value Chains and Business Models

A systematic approach to identifying architectures for business models can be based on value-chain de-construction and re-construction, that is identifying value chain elements, and identifying possible ways of integrating information along the chain. It also takes into account the possible creation of electronic markets.

Exhibit 2.3 shows the details of the classification developed for business models

Exhibit 2.3 value chains and business models

A. Value Chain De-construction means identifying the elements of the value chain. We can identify seven value chain elements, marketing and sales, procurement, human resource management, corporate infrastructure, inbound logistics, operations, outbound logistics.

B. Interaction Patterns which can be 1-1, 1-many, many-1, many-many. Here 1-to-1 is not the “one-to-one marketing sense”, however, it is enumerating the number of parties involved. It is also understood that “many” means that information from several actors is being combined.

C. Value Chain Re-construction, that is integration of information processing across a number of steps of the value chain.

Possible architectures for business models are then constructed by combining interaction patterns with value chain integration. For example, an electronic shop is “single actor- to – single actor” marketing and sales. A basic electronic mall consists of N times an e-shop. An electronic mall having a common brand offers many-to-1 marketing and sales (brand information is common across “many” suppliers in the mall). An electronic auction where multiple buyers are bidding for the sales offer of one supplier at a time with the procurement of multiple buyers, while combining the bid information from the multiple buyers.

Source: Internet: Frerichs, 1999

The implementation of any business model depends on the technology. One can then observe from actual business on the Internet that:

- Information and communication technology enables a wide range of business models;

- Technology in itself provides no guidelines for selecting a model in commercial terms;
- Guidance to technology development can come from the definition of new models;
- Many of the conceivable models have not yet been experimented with commercially.

3.3 Current Business Models

Internet business models abound and vary not only from industry to industry but also from firm to firm within the same industry. Moreover, they are still evolving. Micheal Rappa, Paul Timmers, and Allan Afuah have identified several generic business models: brokerage, advertising, infomediary, merchant, manufacturer, affiliate, community, subscription, and utility.

3.3.1 Brokerage Model: Brokers are market makers. They bring buyers and seller together and facilitate transactions. Those can be business-to-business, business-to-consumer, or consumer-to-consumer markets. A broker makes money by charging a fee for each transaction it enables. Brokerage models can take a number of forms such as the ones shown in Exhibit 2.4

Exhibit 2.4 Brokerage models

Buy/Sell Fulfillment-- Customers place, buy and sell orders from transacting financial instruments.

Market Exchange-- The pricing mechanism can be a simple offer/buy, offer/negotiated buy, or an auction offer/ bid approach.

Business Trading Community-- or "vertical web community", it acts as an essential comprehensive source of information and dialogue for a particular vertical market.

Buyer aggregator-- it describes buyer aggregation as the process of bringing together individual purchasers from across the Internet to transact as a group so they can receive the same values traditionally afforded to organizations who purchase in volume.

Distributor-- A catalogue type operator that connects a large number of product manufacturers with volume and retail buyers. For buyers, it enables faster time to market

and time to volume as well as reducing the cost of procurement. For distributors, it decreases the cost of sales by performing quoting, order processing, tracking order status, and changes more quickly and with less labor.

Virtual Mall-- A site that hosts many online merchants. The mall typically charges setup, monthly listing, and/or per transaction fees. The virtual mall model may be most effectively realized when combined with a generalized portal. Also, more sophisticated malls will provide automated transaction services and relationship marketing opportunities.

Metamediary-- A business that brings buyers and online merchants together and provides transaction services such as financial settlement and quality assurance.

Auction Broker-- A site that conducts auctions for sellers (individuals or merchants). Broker charges the seller a fee, which is typically scaled with the value of the transaction. Sellers takes highest bid(s) from buyers above a minimum. Auctions can vary in terms of the offering and bidding rules.

Reserve Auction-- the "name-you-price" business model, also called "demand collection" and "shopping by request". Prospective buyer makes a final (sometimes bidding) bid for a specified good or services, and the broker seeks fulfillment.

Classifieds-- A listing of items for sale or wanted for purchase, typically run by local news content providers. Price may or may not be specified. Listing charges are incurred regardless of whether a transaction occurs.

Search Agent-- An agent (i.e. an intelligent software agent or "robot") used to search-out the best price for a good or service specified by the buyer, or to locate hard to find information. An employment agency can act as a search agent broker, finding work for job-seekers or finding people to fill open positions listed by an employer.

3.3.2 Advertising Model: The web advertising model is an extension of the traditional media broadcasting model. The broadcaster, in this case, a web site, provides content (usually, but not necessarily, for free) and services (like e-mail, chat, forums) mixed with advertising messages in the form of banner ads. Advertising models are shown in Exhibit 2.5

Exhibit 2.5 Advertising models

Generalized Portal-- high-volume traffic-- typically tens of millions of visits per month-- driven by generic or diversified content or services (ex. Search engines and directories like excite). The high volume makes advertising profitable and permits further diversification of site services.

Personalized Portal-- The generic nature of a generalized portal undermines user loyalty. This has led to the creation of portals (ex. My. Yahoo) that allow customization of the interface and content. This increases loyalty through the user's own time investment in personalizing the site.

Specialized Portal-- Also called a "vortal" (i.e. vertical portal) for example, a site that attracts only golfers, or home buyers, or new parents, can be highly sought after as a venue for certain advertisers who are willing to pay a premium to reach that particular audience.

Attention/ Incentive Marketing-- The "pay for attention" model pays visitors for viewing content and completing forms. The attention marketing approach has the most appeal to companies with very complex product messages, which might otherwise find it hard to sustain customers looking to save. To facilitate transactions, the company developed and patented a micro payment system.

Free Model-- Give users something for free; site hosting, web services, Internet access, free hardware, electronic greeting cards. Freebies create a high volume site advertising opportunities.

Bargain Discounter-- The most notable example is buy.com, which sells its goods typically at or below cost, and seeks to make a profit largely through advertising.

3.3.3 Infomediary Model-- Data about consumers and their buying habits are extremely valuable. Especially when that information is carefully analyzed and used to target marketing campaigns. Some firms are able to function as infomediaries by collecting and selling information to other businesses. An infomediary may offer users free Internet access or free hardware in exchange for detailed information about their surfing and purchasing habits. This is more likely to succeed than the pure advertising model. The infomediary model can also work in the other direction: providing consumers with useful

information about the web sites in a market segment that compete for their dollar. Infomediary different models are shown in Exhibit 2.6

Exhibit 2.6 Infomediary Models

Recommender System-- is a site that allows user to exchange information with each other about the quality of products and services-- or the sellers with whom they have had a purchase experience (good or bad).(see deja.com)

Registration model-- Content-based sites that are free to view but requires users simply to register. Registration allows inter-session tracking of users' site usage patterns and thereby generates data of greater value in targeted advertising campaigns. This is the most basic form of infomediary model.

3.3.4 Merchant Model: Classic wholesalers and retailers of goods and services. Sales may be made on list prices or through auction. In some cases, the goods and services may be unique to the web and not have a traditional "brick-and-mortar" storefront. Examples of merchant model are shown in Exhibit 2.7

Exhibit 2.7 Examples of merchant model

Virtual Merchant-- a business that operates only over the web and offers either traditional or web-specific goods or services. The method of selling may be list price or auction.

Catalog Merchant-- the migration of mail-order to a web-based order business.

Surf-and-turf-- traditional brick-and-mortar establishment with web storefront. The model has the potential for channel conflict.

Bit Vendor-- a merchant that deals strictly in digital products and services, and conducts both sales and distribution over the web.

3.3.5 Manufacturer Model: this model is predictable on the power of the web to allow manufacturers to reach buyers directly and thereby compress the distribution channel. The manufacturer model can be based on efficiency, improved customer service, and a better understanding of customer preferences. Perishable products that benefit from fast distribution, like fresh flowers, may

prove advantageous by eliminating middlemen. The model has the potential for channel conflict with a manufacturer's established supply chain.

3.3.6 Affiliate Model: In contrast to the generalized portal, which seeks to drive a high volume of traffic to one site, the affiliate model, provides purchase opportunities wherever people may be surfing. It does this by offering financial incentives to affiliate partner sites. The affiliates provide purchase-point click-through to the merchant. It is a pay-for-performance model-- if an affiliate does not generate sales, it represents no cost to the merchant. The affiliate model is inherently well-suited to the web, which explains its popularity. Variations include, banner exchange, pay-per-click, and revenue sharing programs. Potential problems loom ahead that may inhibit the diffusion of the affiliate model due to the granting of a broad patent to Amazon.com.

3.3.7 Community Model: the viability of the community model is based on user loyalty. Users have a high investment in both time and emotion in the site. In some cases, users are regular contributors of content and/or money. Having users who visit continually offers advertising, infomediary or specialized portal opportunities. The community model may also run on a subscription fee for premium services. Community examples models are shown in Exhibit 2.8

Exhibit 2.8 Community models

Voluntary Contributor Model-- similar to the traditional public broadcasting model-- the listener or viewer contributor method used in not-for-profit radio and television broadcasting. The model is predicated on the creation of a community of users who support the site through voluntary donations. Non-profit organizations may also seek funding from charitable foundations and corporate sponsors that support the organization's mission.

Knowledge Networks-- or expert sites, that provide a source of information based on professional expertise or the experience of other users. Sites are typically run like a forum where persons seeking information can pose questions and receive answers from someone knowledgeable about the subject. The experts may be employed staff, a regular cadre of volunteers, or in some cases, simply anyone on the web who wishes to respond.

One can find that business models can be characterized in different ways. Presently, there is no single, comprehensive and cogent taxonomy of web business models one can point to.

Another form of business models observed on the web are included in Exhibit 2.9, while Table 2.1 shows a listing of advantages of electronic business models for companies as well as customers

Exhibit 2.9 Different characterization of business models on the Web

<p>According to Timmers, ten business models are currently in use or being experimented:</p> <p>1 E-SHOP</p> <p>This is web marketing of a company or a shop. It is done to promote the company and its goods and services. This includes the possibility to order and pay electronically often combined with traditional marketing channels.</p> <p>2 E-PROCUREMENT</p> <p>This electronic tendering and procurement of goods and services. Large companies or public authorities mainly use e-Procurement on the web.</p> <p>3 E-AUCTION</p> <p>Electronic auctions offer the possibility of electronic bidding of goods over the Internet.</p> <p>4. E-MALL</p> <p>It is an electronic collection of e-shops, for example of a well-known brand. The electronic mall gives entry to individual e-shops. Advantages for the E-Mall Members are Lower cost & complexity to be on the Web and revenues are from membership fee.</p> <p>5. THIRD PARTY MARKETPLACE</p> <p>The third party marketplace is a model used when a company leaves the Web marketing to a 3rd party. Usually the 3rd party offers a user interface to the suppliers' product catalogues.</p> <p>6. VIRTUAL COMMUNITIES</p> <p>The ultimate value of virtual communities is coming from the members (customers or partners), who add their information onto a basic environment provided by the virtual Community Company.</p> <p>7. VALUE CHAIN SERVICE PROVIDER</p> <p>Value chain provider is specialized in electronic payments or logistics, with the intention to make that into their distinct competitive advantage.</p> <p>8. VALUE CHAIN INTEGRATOR</p> <p>These focus on integrating multiple steps of the value chain, with the potential to exploit the information flow between those steps as further added value revenues are coming from consultancy fees or possibly transaction fees.</p> <p>9. COLLAORATION PLATFORMS</p>

These provide a set of tools and an information environment for collaboration between enterprises. Business opportunities are in managing the platform. (Membership/user fees), and in selling the specialist tools (e.g. for design, workflow, document management).

10. INFORMATION BROKERAGE, TRUST and other services

A whole range of new information services are emerging, to add value to the huge amounts of data available on the open networks or coming from integrated business operations, such as information search like Yahoo, customer profiling, business opportunities brokerage, investment advice, etc.

Source: Internet, Timmers, 2000

Table 2.1 Advantages of electronic business models.

	Advantages for Companies	Advantages for Customers
E-Shop	a-Increased demand b- a low-cost route to global presence c- cost-reduction of promotion and sales	a- lower prices b- wider choice c- better information d- convenience of selecting, buying, and delivery including 24 hrs availability.
E-Procurement	a- A wider choice leading to lower cost b- better quality c- Improved delivery d-Reduced cost of Procurement	
E-Auction	a-Increased Efficiency and time Savings. b-No need for physical transport until the deal has been established c- Global sourcing.	a-Time saving b-No need for physical transport until the deal has been established
E-Mall	Visiting one shop on the e-mall will lead to visits the neighboring shops.	Visiting more than one shop on the e-mall.

4. Technical issues for E-Commerce

Computer networks are vital for electronic commerce due to their usage by a wide range of users for a wide range of purposes. Furthermore, such networks must be able to transport a wide range of data types. Voice and data networks were integrated in the 1980s leading to the fusion of computers and communications technologies. With

the addition of consumer electronics into the equation in the 1990s, real-time interchange of multimedia data has become an essential functionality for e-commerce. One of the technologies that can support such requirements is predicted to be the asynchronous transfer mode (ATM) networks (Adam, 1999, 123).

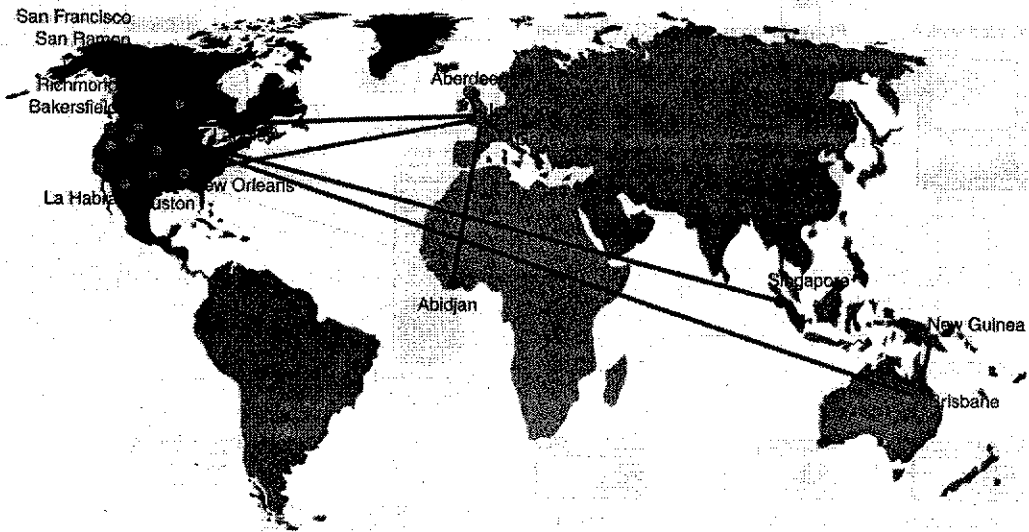
Generally, a communications network is any arrangement where a sender transmits a message to a receiver over a channel consisting of some type of medium. A simple conceptual model of a telecommunications network consists of five basic categories of components: (O'Brien, 2001, 215)

- Terminals: any input/output device that uses telecommunications networks to transmit or receive data.
- Telecommunications processors: it support data transmission and reception between terminals and computers, such as modems, switches, and routers.
- Telecommunications channels: data are transmitted and received over these channels.
- Computers
- Telecommunications control software: consists of programs that control telecommunications activities and manage the functions of telecommunications network.

According to O'Brien, There are many different types of telecommunications networks:

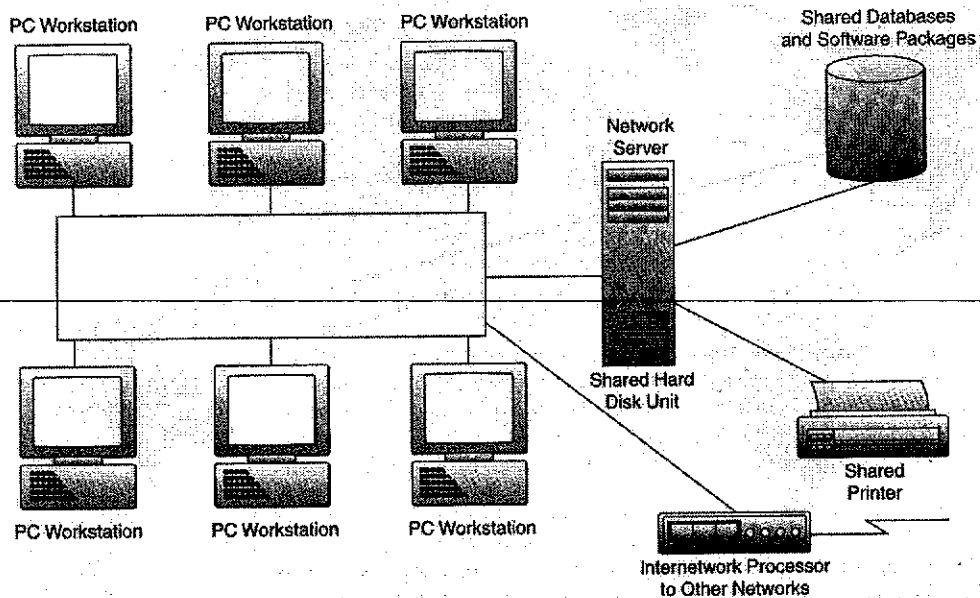
Wide Area Networks (WAN): telecommunications network covering a large geographic area used by many multinational companies to transmit and receive information among their employees, customers, suppliers,... Figure 2.3 illustrates an example of a global wide area network for a major multinational corporation.

Figure 2.3 Wide Area Networks



Local area networks (LAN): connect computers and other information processing devices within a limited physical area, such as an office or a building,... see figure 2.4

Figure 2.4 Local area Networks



Data warehousing refers to a collection of data that is subject-oriented, integrated, time varying, nonvolatile, and designed to support faster and better decision making. In contrast, operational databases are designed to support day-to-day business transactions used primarily for data entry and update operations (Adam, 1999, 125).

5. Security For E-Business

Ensuring security for electronic commerce (EC) is a fundamental prerequisite before any commercial activities involving sensitive information can take place. (Sudweeks, 1999, 104)

5.1 The Potential Threats

Security is defined as " measures taken to guard against espionage or sabotage, crime, attack, or escape." Security is further defined in an additional sense as " freedom and danger," and "freedom from fear or anxiety." Others add, " protection from unwanted attacks". (Sudweeks, 1999, 106)

Security for business is a fundamental requirement not only during transactions involving financial information, but corporate secrets and proprietary information must be protected, and unknown risks must be guarded against (Internet: Harbrecht, 2000).

It is clear that there are certain familiar security attributes that are not inherent to Electronic commerce technologies. Furthermore, even if this weren't the case, conducting commercial activities in a networked environment creates numerous security challenges that are specific to this environment. The threats and attacks to which commercial activities in networked environments may be susceptible:

- Accessing unauthorized network resources
- Destroying information and network resources
- Altering, inserting, or modifying information
- Disclosing information to unauthorized people
- Causing networking services disruptions or interruption
- Stealing information and network resources
- Denying services received, and denying information sent or received
- Claiming to have provided services that have not been administered and/or claiming to have sent or received information not given

Electronic commerce applications and technologies must address these security issues. Guaranteed security is an essential component of the factors that will enable widespread use and acceptance of commerce over open networked systems. Creating a secure environment for EC means protecting network resources and entities from potential threats, and guaranteeing at least the same level of security inherent in paper-based commerce.

5.2 Requirements

There are several requirements to creating a secure environment for EC. The required services that compose an overall secure framework can be segmented into five topics: (1) authentication, (2) authorization, (3) confidentiality, (4) integrity, and (5) nonrepudiation of origin. The principles of security for electronic commerce over an open network are based on these five requirements, and those requirements rely heavily on each other. These requirements for businesses are responsible for the greatest design challenges for secure EC systems; these challenges lie in the formulation, specification, and enforcement of comprehensive data protection policies to meet these requirements (Adam, 1999, 60-62).

5.2.1 Authentication

Authentication involves the ability of individual, organization, or computer to prove its identity. All parties involved in a transaction must feel comfortable that communications in a networked environment are between the parties, that they believe they are doing business with. Security systems accomplish authentication by verifying information that the user provides against what the system already knows about the user (Sudweeks, 1999, 113).

Authentication methods may be based upon the following factors:

- 1- Demonstration of knowledge of some type of proprietary information, such as a password.
- 2- Possession of some type of proprietary object, such as a key or card.
- 3- Demonstration of some type of biometric characteristic, such as fingerprint.

- 4- Evidence that a trusted third party has already established authentication of the claimant.

Some common methods of network security systems used to accomplish authentication include passwords, personal identification numbers (PINs), digital signatures, and certificates.

5.2.2 Authorization

Authorization involves the control of access to particular information once identity has been verified. Certain transactions may need to be partly accessible to certain parties, while the other transactions are not. Authorization is meant to limit the actions or operations that authenticated parties are able to perform in a networked environment. These limitations are based on the security level of the identified party. Authorization is comprised of access control mechanisms, which are network entities, network resources, and access rights (sudweeks, 1999, 65).

The access rights describe entity privileges or permissions under which conditions entities can access a network resource and how these entities are allowed to access the network resource. Examples of entity privileges or permissions are (Internet: Harbrecht, 2000):

- Creation or destruction
- ~~Reading, browsing, or writing~~
- Content addition, deletion, or modification
- Export or import
- Execution

Authorization is also closely associated with electronic publishing and the protection of intellectual property rights.

5.2.3 Confidentiality

Confidentiality involves the secrecy of data and/or information, and the protection of such information from unauthorized access. For electronic commerce, confidentiality

is of utmost importance in the protection of an organization or company's financial data, product development information, organization structures, and various other types of secret information from unauthorized access. In an electronic commerce environment, time-related information may also be a crucial aspect of confidential services. A price list or confidential report may be highly confidential until a certain time, and then freely available after that time. To accommodate these needs, policies regarding the release of information must also be included in confidentiality, as well as authorization services (Internet: Harbrecht, 2000).

Confidentiality must ensure that: (1) information can not be read, copied, modified, or disclosed without proper authorization; and (2) communications over networks can not be intercepted. Encryption techniques based on cryptography are designed to satisfy these requirements (Sudweeks, 1999, 76-77).

5.2.4 Integrity

Integrity involves the protection of data from modification either while in transit or in storage. Electronic commerce systems must have the capability of ensuring that data transmissions over networks arrive at their destinations in exactly the same form as they were sent. Changes in data that integrity services must protect against include not only modifications to the data, but additions, deletions, and reordering parts of the data (Sudweeks, 1999, 66).

5.2.5 Nonrepudiation of Origin

Nonrepudiation of Origin involves the protection against a party involved in a transaction or communication activity that later falsely denies that the transaction or activity occurred. Nonrepudiation services must be able to demonstrate to a third party proof of origin, delivery, submission, and transport of the data in question. The need of these services reflects the imperfections in any communication's environment, whether it is a networked one or not, and points to the fact that proper security mechanisms are needed for critical transactions and communications to take place smoothly, regardless of context (Adam, 1999, 62).

6. Markets & competition in E-Commerce

Economists who have studied online retailing have sometimes made a cogent if perhaps overstated point: That in a world of perfect competition, such as the web-- where every buyer and seller can see what everyone else is charging-- competition will be fierce, and no one will make much money.

It may be awhile before that day arrives. It was brought closer, however, by selling computers at cost-- and make money by tacking on a handling fee and pushing ads at the presumed horde of buyers who show up, and auction service that specializes in selling overstocked merchandise, mainly computer goods and consumer electronics (Internet: Eads, 1999).

6.1 Marketing Strategies

The take-up of electronic commerce is also still considered to be hampered by difficulties in easily deploying the available, let alone emerging, technology. When the technologies become easier to use and more powerful, they will become mainstream tools to implement competitive marketing strategies.

6.1.1 Segmentation & Targeting

Keeping in mind the broad and to some extent changing characteristics of industrial markets, the next step is to develop an understanding of customer base segmentation in B-to-B electronic commerce. From this it can be inferred that they apply product-market segmentation on the basis of the critical importance/ value of a good to the actual production at the purchaser and degree of structuring in the market in terms of organization around large purchasers (Internet: December, 1998).

6.1.2 Products & Services distribution over the Internet

Product and service development is driven by market pull rather than technology push. This is even more evident for the technology user companies (such as Amazon, FedEx,...) than for the technology provider companies.

The Internet and the Web can be used to contact potential customers and inform them about the product and service offer. In this sense it is a medium on which a message can be delivered. It is also a distribution channel to deliver the product or service. Furthermore, it provides the secure communication and interconnection infrastructure of the parties involved in transactions or remote collaboration (Internet: December, 1998).

The combination of a telecommunications connection with customers and interactive software, as in the case of the Internet performs in many respects the same function as a physical distribution channel. However, the Internet is more than just a medium used in direct producer-buyer contact. The Internet is often considered to be an additional channel to direct product delivery or delivery through agents and distributors (Awad, 2000).

6.1.3 Advertising

The Internet enables marketing communications and more specifically advertising to become more interactive, available on demand, targeted, or even individualized (one-to-one), and enabling differentiation that would help to reduce price competition.

According to Awad, Online advertising depends on the advertisements objectives, target audience, nature of the message, available communication channels and communication budget.

First of all, the advertising objective is closely related to global branding and the ability to supply electronic components globally.

Second of all, the target market is a key factor in designing marketing communications. It determines the choice of channels, as well as the nature of the message and the promotion mix. A large target audience will be addressed through PR and Web or newspaper/trade magazine advertising. The small audiences are dealt with on a personal basis.

Third, the communication channels change among the different types of businesses. In traditional business-to-business marketing personal contact is quite important. Direct contact is supported by traditional marketing communication means such as brochures, videos, journals, as well as in a number of cases by exhibitions (Internet: December, 1998).

7. Social & Economic Effects of E-Business

Electronic Commerce affects the business of organizations. There are seven advantages to business and five effects on consumers (Rosen, 2000, 160).

7.1 Advantages to Business

Electronic commerce provides more advantages to business than traditional commerce. These advantages are:

i. Less Physical establishment cost:

E-Commerce offers the company a global market place from single site, and hence less numbers of stores and fixed costs. The company can attain one store for its goods and this means that duplicate inventory costs are eliminated. Variable cost becomes smaller since this kind of business is more order-based.

ii. More Functioning Time:

The company is always open and the service is available 24-hour. Internet makes it possible for companies to function without their personal presence.

iii. Less staffing cost:

Using online shopping, the company needs less workers but more skilled. Online customer service saves 20,000 hires or 14% of total labor force. A study was done on the banks that are offering online banking in USA that proved this idea of decreasing costs. In fact, it resulted that Internet banking costs are 35% less than the costs of ordinary banking.

iv. Audience sizing and control:

Companies can learn more about their customers. They can know how many people visited their online site and how many stopped at particular places on the site. They can also get comments and responses from their customers without making the customer embarrassed from talking to the seller face to face. This helps them improve their offered products and ads.

Liquidating merchandise online is also much more effective than getting rid of it in the catalogues because once an item is gone, it can be removed from the web site. This leads to greater consumer satisfaction because customers know that what they see is what they get (Internet: Eads, 1999).

The auction is good for customers because they will be getting items sometimes for less than cost. It is good for business because they can move merchandise more cost-efficiently and consistently than if we offered it on sale in the stores. (Internet: Eads, 1999)

7.2 Effects on consumers

Electronic Commerce has the following effects on consumers (Internet:Eads,1999):

- a- Better quality and competitive products offered:
Products become more qualified and efficient leading to increasing competition between companies, and this in turn results in lowering prices of the products.
- b- Less Cost:
Similar offerings lead to lower prices, in addition to lower costs due to the absence of intermediaries' costs. Buying products over the Internet and delivering it directly to customers without intermediary services decreases the cost of product by around 6% in wholesaling and 9.6% in retailing.
- c- Less time spent on shopping:
The process of buying a product is quicker. No need to visit a shop and search for the required product. Using the Internet it is easy to retrieve the type of the product needed faster and finish the buying process in minimal time.
- d- Ease of Collecting Information:
Customers can easily find information about companies, products, competitors, prices, quality and availability of products.
- e- Fewer interactions and pressure of sales people:

Customers do not have to face sales people or open themselves up to persuasive and emotional factors.

8. Managing Business Web

Marketing products to consumers is a four-phase process:

1. Providing pre-sale information
2. Taking the order
3. Delivering the product
4. Providing post-sale customer service

The Internet offers some unique advantages for marketers in each phase of the marketing process (Atallah, 2000, 8-9).

8.1 The planning phase

The concept of planning is to evaluate a company's position and competition. The electronic commerce planning differs from the traditional one. In electronic commerce, what is needed is a short plan in a short time to not leave time to the competitors. However, there is no one e-commerce strategy that fits to all businesses (Atallah, 2000, 10-12).

An online retailer has to strategize that is to choose products that will meet the criteria of a new breed of web-based consumers and a sales medium that offers unique opportunities. In a way, the planning step is all about the product(s) that you sell and how you address the needs of that product's consumer. Retailer successful strategies are shown in Exhibit 2.10

Exhibit 2.10 planning stages for a retailer

<p>1- The online merchants should know first who will buy the product. A new online retailer must know the segment of the Web market his product is likely to attract and how well the product can conform to the specific needs of the customer.</p>

2- The online retailer has to be familiar with the Internet; the key to reducing the risk that every new business carries with it is to focus on what the retailer know.

3- The retailer has to decide if he is approaching entry on the entry for a quick killing or for sustained growth. He has to choose between (1) The long-term shot at online selling and (2) the short term selling such as baseball caps in season and other seasonal product.

4- knowing the competitor is highly essential.

5- In today's multimedia world, product(s) appearance on the monitor is important since customers cannot feel or touch the product. Other than the appearance, what is important is the range of product, the pricing, the substitution if an item is not in stock, and building customer orders. And finally how the product is going to be shipped.

6- The online retailer should decide how to handle unexpected change. On the web, unexpected change is a way of life for many online merchants. Planning should be made for maintenance, upgrade and improving the responsiveness of the sight round the clock. Web site owners should plan on fine-tuning the communication channel between the web site and the user for feedback and follow up.

Source: Internet: Hasan, 2000.

While on the planning phase, an important step to take is to decide on the type of e-commerce model to adopt that is in line with the products or services to be sold on the Internet. One way to classify e-commerce business models is by communities, content, and commerce.

After having a clear idea about the goals of the online business and figuring out who the customer is, what product are promoted, and the nature of the competition; comes the need of building the LAN, to decide on the software, Hardware and setup phase specifications needed to cruise the Web. Irrespective of how one approaches hardware and software and whether one buys from a small or a large computer firm, all of this comes down to a translation into quality, how well built the product is, how reliable and durable it will be, durability, and the quality customer support available round the clock.

8.2 The design phase

To be familiar with the basics of Web site design, there are resources on the Internet, through magazines, and via consultants that make it easier to do the planning.

First of all, the site should load quickly and be simple to navigate. The site should show credibility by providing lots of information about the "real" business. The design should consider three attributes:

- Customers should be able to find the product quickly. There is the 8-second guideline, which means that customers who can't find what they're looking for during that time, they click out of the site for alternative sites.
- The site should process the order and securely send the order to the fulfillment center for packing and shipping to the customer.
- Generate a summary of the order and produce a printable receipt
(Atallah, 2000, 8-9).

In planning the web site, the procedure begins with seeing what the competition has on the Internet, looking at some of the best sites and thinking about how the proposed site can improve, and generating a list of the features needed for the site. Once done, the next step is to locate an able designer. Other considerations in web design are shown in Exhibit 2.11

Exhibit 2.11 other considerations in web design

- User control and freedom. Users should be able to "undo" and "redo" paths they have taken by mistake and get back on track within your site.
- Consistency and Standards. Users should not have to wonder whether different words or actions mean different things on different Web pages.
- Recognition rather than Recall. Objects and options should be visible., requiring no memorization or explanation.
- Aesthetic Design. This means dialogs should not have information that is unrelated to segment or is rarely needed.
- Recovery from error. Error messages should be displayed in plain language and indicate the source of the problem and ways to correct them.
- Help desk. The web site should have a feature, where the user can go to it for help on activities related to the product, service, how to order, etc.

Awad, 2000

8.3 The marketing phase

Accurate information, a good reputation and appearance, stability of service, good advertising, and knowledge of the customers all contribute to the success of the online business. The essence of the marketing phase is providing good service, advertising before the sale, knowing the customer, selling the products or services, and following up on customer status after the sale. Inventory issues and stock control are also relevant items under the marketing phase (Awad, 2000).

8.4 The Post-Sale Phase

After the customers receive their products and in order to give the customers good services after the sale, the seller needs to provide directions at the site

Fulfillment is what happens after a sale is made. According to December, it includes:

- Packing up the merchandise
- Shipping the merchandise
- Answering questions about the order
- Sending out the bill
- Following up to see if the customer is satisfied.

Most e-business merchants are putting extraordinary pressure on their vendors and shippers to deliver merchandise "just-in-time". Customers also want to be able to initiate, track, and acknowledge their orders online. More and more of today's fulfillment effort is part of an integrated chain- customers, warehouses, suppliers, drivers, rail partners that make it possible to have online shipping information within seconds (Internet: December, 1998).

The critical aspect of the fulfillment phase is having real people in real warehouses to get products into customers' hands.

When it comes to shipping, all options should be described, the cost of each option, and how long each will take.

Finally, part of the fulfillment phase includes integrating the phase with inventory which includes product availability, matching the product for sale to the products in the inventory, out-of-stock notice, back orders, processing orders, and controls.

8.5 The upgrading & maintenance phase

Maintenance means keeping a system or a business on course based on the initial design or plan. While upgrading is enhancing the site and implementing changes that are designed to improve the system's productivity.

Regardless of the reasons or circumstances, the goal of maintenance is to stay the course-ensure usability of the Web site. The goal of enhancement is to upgrade the Web site and the business-to-consumer interface to the latest standards and expectations of the customer base. The bottom line is customer attraction and retention on the site.

Implied in maintenance and enhancement is managing the web site. Part of the management process is establishing online customer support that can help keep "fickle" Internet customers loyal. It can also make them less likely to pick up the phone that becomes time-consuming. Many companies are using their customer-service efforts as a selling point on the Internet. Some of the important tips on managing customer feedback are:

- Set up FAQs and post them in a prominent location on your home page.
- Make sure the information is easy and quick to access
- Visitors are short-tempered when it comes to download times. Eight seconds is the longest any page should take to load.
- Answer e-mail. It is fast and easy.

In terms of customer service, several items should be considered like updating orders, technical support, localization (multiple languages, currencies,...), and handling customer expectations.

9. Legal Frameworks

The growth of a global electronic marketplace has an impact on, and is affected by numerous legal and policy issues. These include the protection of intellectual property rights and copyrighted material in a digital environment, the protection of individual rights and privacy in a digital environment, currency management and tax issues in a borderless environment, the export of encryption products, and other legal issues such as the legality of electronic contracts, digital signatures and jurisdiction in cyberspace (Adam, 1999, 150-151).

9.1 Intellectual Property

Facilitating electronic commerce can involve the sale and licensing of intellectual property. The specific problems of conducting business electronically are highly dependent on the industry protection of intellectual property. Examples of the violations of the copyright law can be in the form of:

RAM or screen copies

Deleted but not erased copies

Copies in transition

Web cache copies

While the items mentioned above reflect indirect violations of intellectual property protections, networked communications environments make it easier for malicious copyright infringements to occur as well. Reproductions of digital products are unlike any attempts to copy an existing work throughout history, in that digital copies are as close to perfect copies as ever before possible (Rosen, 2000, 160-164).

Resolving the intellectual property issues related to electronic commerce is a top priority for continued progress in this industry.

There are some methods for on line copyright protection. One is to restrict access to the source of the work. This can include access control and authorization services for Web servers, or encryption methods to control access to individual documents. The second method involved is to restrict the ability to manipulate electronic files containing copyrighted works (Awad,1999,151).

9.2 Legal issues for Electronic Payment Systems

- i- **Taxation:** Electronic Commerce creates difficult problems for applying existing tax schemes to its activities. Governments and legislative bodies are beginning to address these issues since they have significant implications for revenue flow within countries and for the future of EC. Difficulties in tax issues for EC focus on the collection of use and sales taxes for transactions within networked environments. In fact, the Internet and electronic commerce change the jurisdiction framework that existing laws for the collection and payment of use and sales taxes are based on.

- ii- **Digital Currencies:** The international and borderless nature of electronic payment systems raises a number of other legal and governance issues that affect commerce. The current levels of transactions involving technologies could create new effects for currency management is not sufficiently high enough to cause concern. Although digital currency systems today are composed of tokens of value that are convertible to the actual cash that they represent in the physical world, it is conceivable that a company could introduce electronic money with no affiliation with existing financial institutions and make no provisions for its convertibility to actual money.

9.3 Computer Crime, Money Laundering, and Fraud

Computer crimes can be defined as "illegal acts in which the computer is either the vehicle used to commit the act or the target of the act". Computer Crime is defined by the association of Information Technology Professionals (AITP) as including (1) the unauthorized use, access, modification, and destruction of hardware, data or network resources; (2) the unauthorized release of information; (3) the unauthorized copying of software, (4) denying an end user access to his or her own software, hardware, data, or network resources; and (5) using or comprising to use computer or network resources to illegally obtain information or tangible property (O'Brien, 2001, 450). Furthermore, when these crimes are detected, current legal frameworks often do not set adequate parameters for

prosecuting them. Technology can heighten security risks and challenge existing legal frameworks' abilities to address these law enforcement threats.

9.4 Contractual and Legal Settlements

The majority of analysis regarding legal frameworks for electronic commerce has concentrated on content or access issues, rather than the contracting issues involved in Internet-related transactions. The issues raised by EC for contract law are numerous. Current frameworks are ambiguous as to whether or not a legally binding contract can be formed by the exchange of electronic communications. One issue that is involved in this area is whether an electronic message or offer of acceptance is enough to constitute a binding contract, or whether simply clicking on a "yes" or "accept" button will facilitate legal agreements as well. Another issue involved in this area is currently being perceived as one of the first legal gray areas that electronic commerce must address to continue its growth- the legal validity of digital signatures or certificates. Finally, frameworks establishing contractual legislation governing the sale of goods that are ordered and delivered electronically are also unclear as to the rights of the involved parties and controlling terms of the contract.

10. Conclusion

After presenting a general literature review about Electronic commerce in Lebanon, the next section of this study is about the research design and the methodology used in collecting the primary and secondary data.

CHAPTER III

3. Research Design and Methodology

3.1 Basic Approach

This research intends to increase the knowledge concerning E-commerce and to present its various concepts and practices through the use of many secondary and primary sources.

A descriptive analysis is adopted to present the study results and analyze the findings in a way that enables the researcher objectives which are the assessment of consumers' perceptions towards E-commerce implementation in Lebanon. The purpose is to widen the Lebanese knowledge concerning e-commerce and its concepts, to study the effects of electronic commerce, and to stress the fundamental factors which ensure a successful EC implementation.

In fact, this research study is based on presenting information from several sources, and from the results of 151 questionnaires for people in different fields, two case studies about private Lebanese implementation of electronic commerce and several methods have been used in the process of data collection.

As stated above, the data has been collected and acquired from two sources: secondary sources and primary sources. Primary sources relied on survey distribution and interviews

Evaluation of the data gathered is based on three criteria:

- 1) Referring to the body of literature as a guide regarding the E-commerce concepts, business models principles and implementation
- 2) Comparison between what is stated, whether in secondary or primary data and what is actually being done.
- 3) Determining consistent patterns and summarizing the appropriate details revealed in the research.

3.2 Methodology of Data Collection

Data was acquired from two main sources: primary sources and secondary sources.

3.2.1 Primary Sources

Primary data is mainly collected through the use of a structured questionnaire filled by students and employees since Electronic commerce involves everybody in Lebanon being students, employees or managers. The questionnaires were filled by students from the Lebanese American University (LAU), American University of Beirut (AUB), American University of Science and Technology (AUST), and Universite Saint Joseph (USJ) as well as Faculty from LAU. Employees came from a broad variety of organizations belonging to various sectors and from different managerial sectors and functional divisions such as banks (Fransabank, Byblos, HSBC), Medical Institution (Khalidy Hospital), and Trading Companies (Access International for Trading).

Before conducting the field survey, primary data was also collected by a personal interview held with Mrs. Rola Moussa (Owner, Netways) and Dr. Salah Rustum (CEO, GlobalSign) And backed up with field observation. The information received from these sources such as the figures highlighting E-commerce were used as a backbone to the research topic bearing in mind the results already found in the questionnaires results.

A- Measurement and design of the Questionnaire

The listed below subsections represent the measurement of the factors relevant to E-commerce in Lebanon. These were used in the design of the questionnaire displayed in Appendix A.

i. Demographic Characteristics

The demographic variables include the gender, age, level of education, the field of work and the occupation in specific; In addition to the

range of salary. The demographic variables include the first six questions.

ii. Internet Familiarity

The next four questions reveal the average time of using the Internet as well as the most frequent place of use. Furthermore, the questionnaire includes questions about the preference of using the web applications and which web application is frequently used.

iii. Electronic Commerce Familiarity

In this section, the questions were direct. They dealt with the familiarity of the Lebanese with the issue of electronic shopping and trade as well as the online business models.

iv. Moreover Technical details of electronic commerce

Some indirect questions were posed in order to test the accuracy of the responses. Two different questions were asked about online shopping and online purchasing as well as the type of product most frequently wanted and bought through the Internet.

At the end of the questionnaire, a space was granted for the respondents to express their opinions or to comment on something they thought to be important and worth mentioning.

Next in chapter four, results and findings will be exposed and explained. The problem questions will be answered.

B- Types of Questions

In constructing the questionnaire, four types of models* are used.

- a. The Likert-type scale items. These questions consist of different items. The respondents have to rank each item from strongly disagree to strongly agree or from Always to never.

- b. The category Scale. This procedure measure the respondents preference and attitude with respect to several items given in the questionnaire
- c. The Dichotomous Scale. This a measure of “yes” or “no” answer to the question asked.
- d. One open-ended question is adopted because there is no way to limit the answers. This question will be analyzed in frequency distributions to assist the survey objectives.

C- Analysis of Data Collected

The data collected was converted into a format which helps in answering the decision makers’ question. The data analysis on which the survey is based on is the descriptive analysis as well as the regression analysis of the responses provided by the interviewees.

The data was transformed into data easy to understand and interpret, in a way to provide descriptive information. Simple descriptive analysis determines consistent patterns and summarized the appropriate details revealed in the investigation.

The analysis of data was done through the facilities of a statistical package of social science (SPSS). Using this software, a descriptive analysis was conducted to define the following:

- Describe certain elements through statistical analysis such as the respondents’ familiarity, and acceptance of E-commerce.
- Build a regression equation to study the effect of various factors, such as beliefs on use of e-shopping, e-bidding, e-banking,...

D- Response Rate

More than two hundred and ten questionnaires were distributed to students and employees. Only one hundred fifty one questionnaires were filled and returned. That is, 72% was the response rate.

3.2.2 Secondary Sources

The researcher also adopted many sources as a reliable source of secondary data. Some of these sources are the professional journals, the business periodicals and magazines, recent articles and many books, etc... the secondary data is of great value especially in such descriptive research since it serves as a guideline out of which the researcher will be able to track the evolution of Electronic commerce since its inception, and to back up the evolution of its various concepts, principles and business models.

Several academic books, magazines, periodicals and reports were required to accomplish this research project. Secondary data is used for the three main reasons:

- To collect relevant information for the research study allowing the researcher to explore in more detail and analyze Electronic commerce use and applicability.
- To provide the researcher with guidelines for conducting the research with suggested improvements regarding the case study.
- To aid in backing up the information presented and the sequence of ideas as well as the different models and points.

In addition to the secondary data cited above, few exhibits and examples were adopted from literature review in order to support the electronic commerce evolution and application in Lebanon.

3.3 Conclusion

After the presentation of the design and methodology of this research, the variables to be included, and the analysis tools to be utilized, the findings will be displayed in Chapter IV and then the assumptions of the study will be evaluated in the light of the purpose of this research and the concepts proposed.

CHAPTER IV

Research Findings and Analysis

4. Introduction

Chapter I and II introduced and presented a literature review on electronic commerce. Chapter III discussed the research design and methodology used for analyzing the results. Furthermore, this chapter introduced the tools used for analyzing the data collected.

Chapter IV shows a detailed analysis of the results of the primary data. Results will be analyzed in a way that best describes the acceptability, application, and awareness of electronic commerce in Lebanon from a consumer and a business point of view.

The concepts to be assessed are as follows:

- The most preferable web application used by the Lebanese users.
- The understandability of the users of the models of electronic commerce as well as the understandability of the importance and advantages of electronic commerce in Lebanon.
- The factors that could affect users' decisions to go shopping online.
- The factors that could affect users' willingness to go shopping online in the future.
- The items that the users would buy if decided to buy from the Internet.
- The factors that could affect the users' decisions to do the following:
 - Go online banking
 - Reserve in a hotel through the Internet
 - Sell or buy stocks over the Internet
 - Go for e-bidding
 - Participate in forums, newsgroups, or bulletin board systems for commercial online services.

This chapter intends to present pros and cons to these concepts in the light of the results obtained and the analyzed findings.

The primary data are divided between a questionnaire analysis and a case study about a Lebanese online organization followed by an interview with Mrs. Rola Moussa, the manager.

Another interview was also held with Dr. Salah Rustum, CEO of GlobalSign to shed light on electronic commerce in Lebanon as well as the security issues and digital signatures.

4.1 Major Results and Findings

In order to study the use and application of electronic commerce in Lebanon as well as the acceptability of the Internet to be a different way to do business in the Lebanese market, 151 persons were conveniently selected from different fields, having different background to fill each a 6-page-questionnaire.

4.1.1 Respondents' profile

The demographic statistics of the respondents belonging to several universities (LAU, AUB, AUST, USJ) and Lebanese organizations are presented in Table 4.1

Table 4.1 Demographic Data of the respondents

Gender of the participant

	Frequency	Percent
Female	64	43
Male	86	57
Total	151	100

Age of participant

	Frequency	Percent
16-20	14	9
21-25	89	59
26-30	30	20
31-35	5	3

Above 35	13	9
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Level of Education

	Frequency	Percent
High school	7	5
Vocational school	5	3
BA/BS	85	56
MA/MS	44	29
PHD	9	6
Other	1	1

Field of Work

	Frequency	Percent
Education	19	13
Business	62	41
Engineering	11	7
Health care	15	10
Currently not employed	34	23
Other	10	7

Salary (in L.L.) / month

	Frequency	Percent
400,000 - 1,000,000	77	51
1,000,000- 1,500,000	35	23
1,500,000- 2,000,000	13	9
2,000,000- 3,000,000	7	5
Above 3,000,000	19	13

Male respondents are slightly more than female respondents (43% females, 57% males) and 59 percent of all respondents were from the young generation aged between 21 and 25 years old, 20 percent of the participants are between 26 and 30 years and the least percentage is for the participants aged between 30 and 35 years (3%). Similarly, most of the respondents are educated and holders of university degrees; 85 participants (56%) have a BA/BS degree and 29 percent have a MA/MS

degree. 6 percent of the respondents have a PhD in either medical, business and engineering fields, while all the other respondents have lower levels of education.

Concerning the field of work, 41 percent of the respondents are working in the business field, 23 percent are currently not employed; this is obvious knowing that 34 percent are university students. 13 percent are working in the education field. Most of them are instructors at LAU who were asked to fill the questionnaires. 10 percent are working in the health care field. These respondents are the nurses and doctors filling the questionnaires in a local hospital in Beirut. 7 percent are engineers and 7 percent work in other fields.

As for the salary findings, 51 percent of the respondents are paid between 400,000 and 1,000,000 Lebanese pounds. 23 percent are paid between 1,000,000 and 1,500,000 Lebanese pounds. All the other respondents are paid higher salaries.

The respondents' profile shows that the majority of the respondents are educated since most of them have a university degree, but most of them are paid low wages. This may be logic since most of the respondents are young and fresh graduates. However, the respondents work in different fields of work ranging from business to education, medical, engineering, and other fields of work.

4.1.2 Descriptive Analysis

~~Descriptive analysis of the results are divided into three areas: Internet Literacy, Electronic Commerce Literacy, and attitude toward electronic commerce.~~

A. Internet Literacy

The Internet has changed the way in which the world conducts business. Goods are purchased and sold, services are rendered, stocks are traded, newspaper and magazine subscriptions are sold, and up-to-the-minute news and financial information is readily available, all from the convenience of the consumer's home or office.

In order to be familiar with the Internet and the online world, the users have to be Internet literate.

Next, questions dealing with the measurement of Internet Literacy are stated with results obtained. These questions are:

Table 4.2 How much time do you spend using the Internet/month?

	Frequency	Percent	Cumulative Percent
1hr-7hr	51	34	34
8hr-14hr	27	18	52
15hr-21hr	29	19	71
>21hr	44	29	100
Total	151	100	

Table 4.2 shows that 34 percent of the participants spend only from 1 to 7 hours using the Internet per month while 29 percent use the Internet for more than 21 hours. Furthermore, 19 percent of the participants spend between 15 to 21 hours using the Internet and the remaining 17% spend between 8 to 14 hours. Figure 4.2 gives a graphical representation of these results.

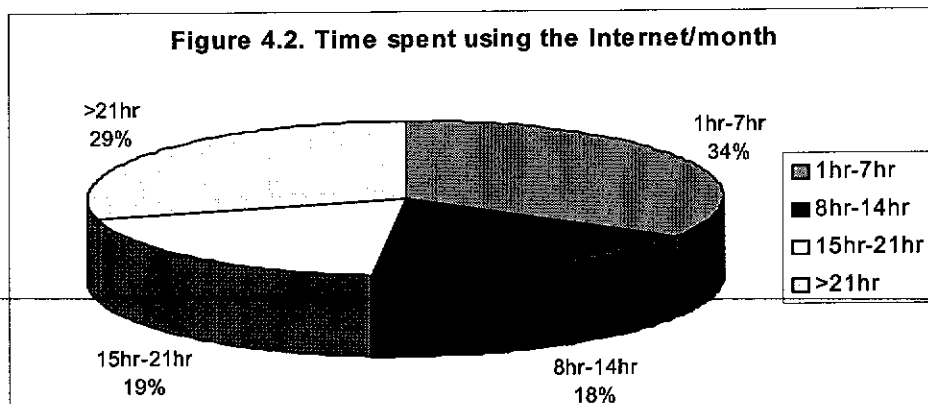
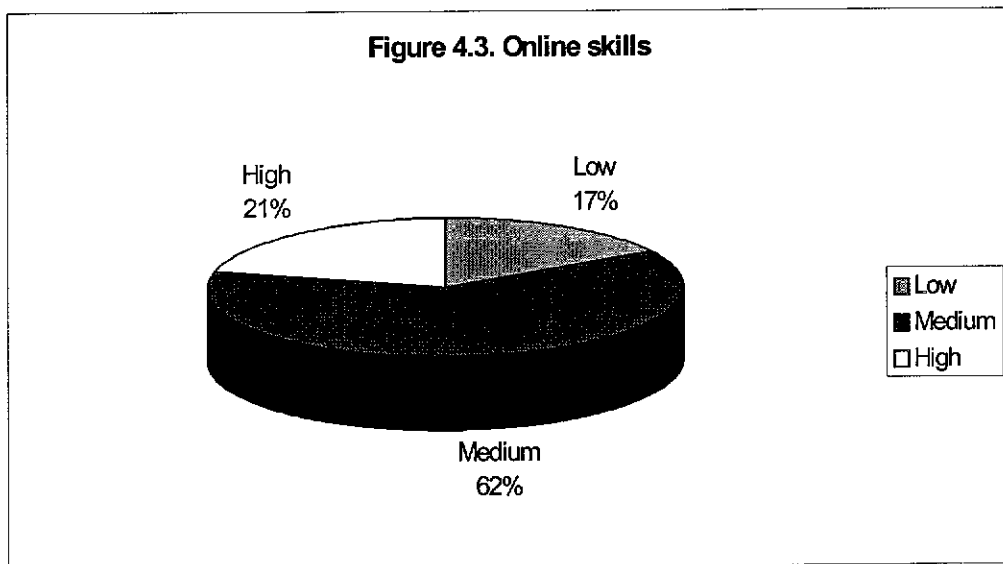


Table 4.3 How do you measure your online skills?

	Frequency	Percent	Cumulative Percent
Low	25	17	16.5
Medium	94	62	78.8
High	32	21	100
Total	151	100	

When asking the participants to rank their online skills; 62 percent of the participants rank their online skills as medium; whereas, 21% of them have high online skills and only 16% have low online skills.

Most people measure their online skills as medium. 62 percent of the respondents know more than just the basics of the Internet. These results are also shown in Figure 4.3



B. Electronic commerce Literacy

The dramatic growth of Internet commerce suggests equally dramatic opportunity for electronic commerce companies. However, unlike companies conducting business through more traditional means, electronic commerce companies are international from their inception, with websites exposing them to potential clients. Clients on the other hand have different knowledge and definitions of electronic commerce in Lebanon.

Table 4.4 Are you familiar with Electronic Commerce?

	Frequency	Percent	Cumulative Percent
Yes	110	73	73

No	41	27	100
Total	151	100	

The majority (73%) of the 151 participants filling the questionnaires are familiar with Electronic Commerce while only 27 percent are not familiar with this term.

The young generation is the Internet generation and since most of the respondents are young and educated people, it is logical that most of them are familiar with electronic commerce. However, one can observe that there still exists a group of educated people and university graduate who are not familiar with EC.

Furthermore, the questionnaire contains a section to measure Lebanese participants awareness concerning the different forms of Electronic Commerce;

Table 4.5 E-Bidding

	Frequency	Percent	Cumulative Percent
Strongly Agree	56	37	37
Agree	39	26	63
Don't know	51	34	97
Disagree	3	2	99
Strongly disagree	2	1	100
Total	151	100	

Referring to Table 4.5 and Figure 4.4, one can find that when asking if the participants think that electronic commerce includes E-Bidding, 62 percent agree or strongly agree while only 3.3% disagree. 33 percent of the participants don't know if E-bidding is a form of Electronic Commerce or if it is included in E-commerce.

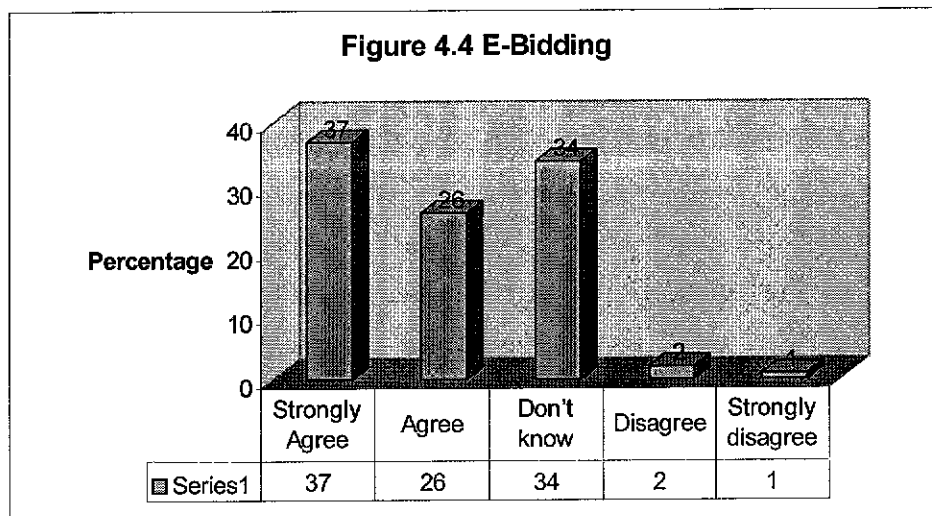


Table 4.6. Information brokers

	Frequency	Percent	Cumulative Percent
Strongly agree	49	32	32
Agree	43	28	60
Don't know	31	20	80
Disagree	22	14	95
Strongly disagree	6	5	100
Total	151	100	

Also, a total of 60 percent agree and strongly agree that E-Commerce includes Information Brokers. 19 percent disagree and exclude information brokers from E-commerce. On the other hand, 20% don't know if E-commerce includes Information brokers. These findings are depicted in Table 4.6 and Figure 4.5

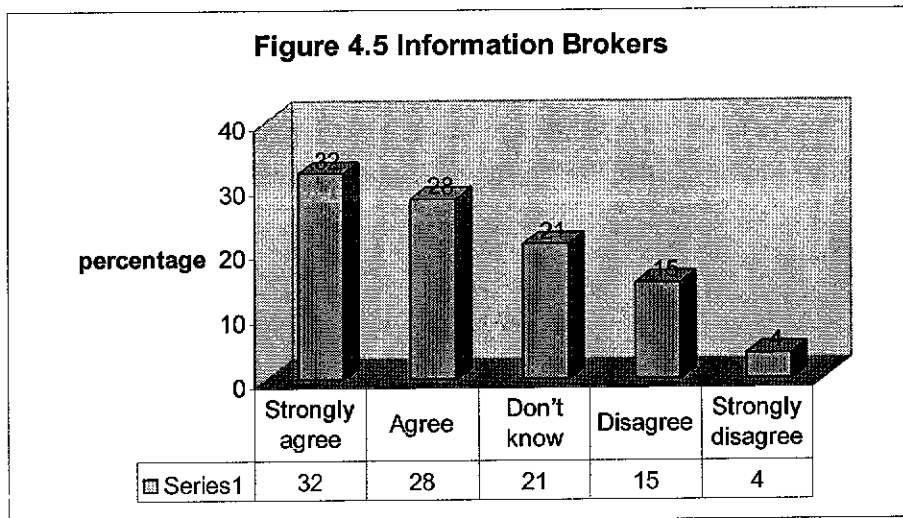


Table 4.7 Virtual Companies

	Frequency	Percent	Cumulative Percent
Strongly agree	63	42	42
Agree	46	30	72.18
Don't know	30	20	92.05
Disagree	7	5	96.68
Strongly disagree	5	3	100
Total	151	100	

Table 4.7 and Figure 4.6 show that most of the participants, 72% agree and strongly agree that E-commerce includes Virtual Companies, 20 percent don't know and the remaining 8 percent Disagree and strongly disagree that E-commerce includes Virtual companies.

Virtual companies are a relatively new concept in the new electronic business world. Also, virtual companies are not yet applied in Lebanon but surprisingly most of the respondents (72%) are familiar with virtual companies and agree that it is included in Electronic commerce.

These results show the increasing awareness of the Lebanese users concerning virtual companies (its definition and concepts). Most probably these users' familiarity with this kind of companies refers to the new topics discussed in an academic environment.

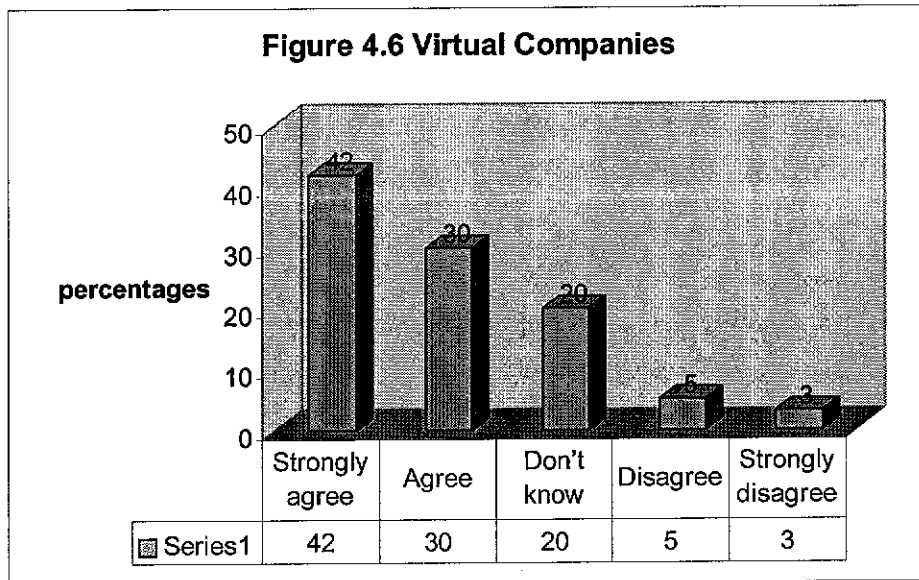


Table 4.8 Financial Institutions

	Frequency	Percent	Cumulative Percent
Strongly agree	57	38	38
Agree	51	34	71
Don't know	23	15	87
Disagree	13	9	95
Strongly disagree	7	5	100
Total	151	100	

When respondents were asked if financial institutions are also part of Electronic commerce, results shown in Table 4.8 and Figure 4.7 reflect that 72 percent of the respondents are familiar with financial institutions and agree (38% strongly agree) that financial institutions are included as a form of E-Commerce while only 14% disagree and 15% don't know.

These results also reflect the increasing awareness of the Lebanese users about financial institutions and that these institutions may be online institutions and all the transactions with these institutions can be done online.

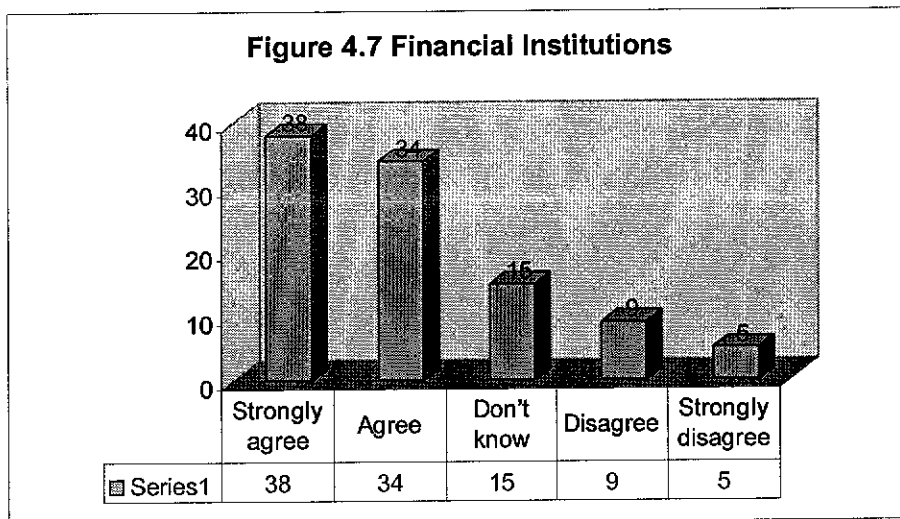
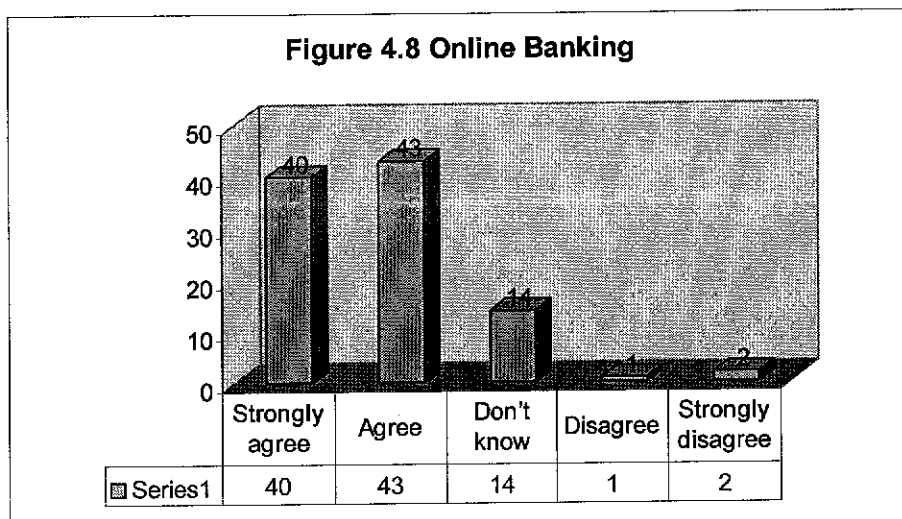


Table 4.9 Online Banking

	Frequency	Percent	Cumulative Percent
Strongly agree	61	40	40
Agree	65	43	83
Don't know	21	14	97
Disagree	1	1	98
Strongly disagree	3	2	100
Total	151	100	

According to Table 4.9 and Figure 4.8, almost all of the participants are mostly familiar with online banking. 83 percent agree and strongly agree that E-commerce includes online banking. Only 3 percent disagree and 14 percent don't know.

Online banking is becoming a known practice in Lebanon and the top twenty Lebanese banks are trying to go online. Lebanese banks are advertising and encouraging people to make online the available transactions that can be done over the Internet. People do find it easier sometimes to have some information about their bank account with a click of a mouse.



C. Attitude toward Electronic Commerce

Fewer online transactions are conducted by the Lebanese when compared with international activities. However, one way to assess our sample's attitude towards electronic commerce was to assess their attitude when asked about their preferences to use e-banking.

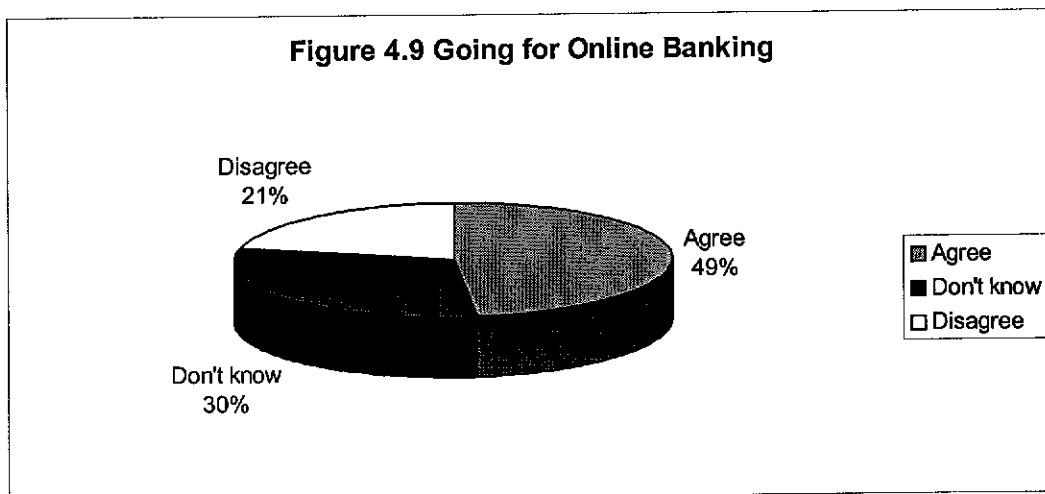
Table 4.10 Do you go for online banking?

	Frequency	Percent	Cumulative Percent
Agree	73	48	48
Don't know	46	30	79
Disagree	32	21	100
Total	151	100	

Numbers in Table 4.10 and the pie chart in Figure 4.9 indicate that 48 percent agree to make bank transactions online, while 30 percent don't know if they can go online with banking. On the other hand, other respondents (21%) disagree and would not go online with banking.

There are some obstacles that characterize the Lebanese users in their attitude towards online banking. First, users are highly concerned about the security issues and many

of them think that banking over the Internet is not secure. Second, Lebanese banks still do not have all transactions available online.



D. Internet Applications

Respondents were asked about their preferences when they go online. The results show that all respondents will either browse the Internet, send and receive E-mail, go for chatting, create personal web page, create business web page, or go on mailing list. Each web application will be analyzed according to the answers given by the respondents, then the web applications will be ranked from the most preferred to the least one.

Table 4.11 Browse or Surf the Web

	Frequency	Percent	Cumulative Percent
Strongly agree	81	54	54
Agree	56	36	90
Don't know	10	7	97
Disagree	4	3	100
Total	151	100	

According to Table 4.11, majority of the respondents or 90 percent browse or surf the Web, 7 percent don't know if they really want to surf the web when going online. Only 3 percent disagree to browse the Internet sites. This shows that most respondents are acquainted with browsing the Internet, however, for different reasons.

Table 4.12 Send and Receive E-mail

	Frequency	Percent	Cumulative Percent
Strongly agree	111	74	74
Agree	39	26	99
Don't know	1	1	100
Total	151	100	

Table 4.12 shows that 99 percent send and receive E-mails. 0% disagree and 1% don't know if they prefer to use the Email. Almost each of the 151 participants prefers to send and receive Emails. Most university students in Lebanon contact each other using the email. Many Lebanese organizations are using emails for customer services and most of their employees have and use their personal emails. In addition, nowadays many people contact their relatives and friends outside Lebanon using emails, which is considered less costly, faster for many, and more practical.

Table 4.13 Go For Chatting

	Frequency	Percent	Cumulative Percent
Strongly agree	24	16	16
Agree	44	29	45
Don't know	24	16	61
Disagree	31	21	81
Strongly disagree	28	19	100
Total	151	100	

45 percent agree to go for chatting when online. 39 percent disagree with the idea and do not prefer chatting as an application of the Internet. 16 percent don't know and don't prefer chatting at all. So, according to the results presented in Table 4.13, Chatting is less preferred than Email and browsing the web sites.

Table 4.14 Create Personal Web Page

	Frequency	Percent	Cumulative Percent
Strongly agree	11	7	7.28
Agree	27	18	25.16
Don't know	45	30	54.9

Disagree	30	20	74.8
Strongly disagree	38	25	100
Total	151	100	

25 percent prefer to create a personal web page and agree with this idea while 45 percent disagree with the idea and do not prefer such an application when going online. 30 percent are uncertain if they prefer creating personal web pages. This web application is less desirable than the previous ones. Professional people or fans of creating web pages mostly like to create personal web page. The above results are extracted from Table 4.14

Table 4.15 Create business Web page

	Frequency	Percent	Cumulative Percent
Strongly agree	10	7	7
Agree	23	15	22
Don't know	49	32	54
Disagree	31	21	75
Strongly disagree	38	25	100
Total	151	100	

According to Table 4.15, 22 percent of the respondents agree that they prefer to create a business web page. This percentage is less than the people who agree to create personal web pages. 32 percent are uncertain if they prefer to create business web pages while 46 percent disagree with this web application, which is considered a professional application and not used for personal needs.

Table 4.16 Go on mailing List

	Frequency	Percent	Cumulative Percent
Strongly agree	13	9	9
Agree	36	23	32
Don't know	50	33	66
Disagree	30	20	85
Strongly disagree	22	15	100
Total	151	100	

Results in Table 4.16 show almost an even distribution of opinions when respondents were asked if they want to be on a mailing list. 32 percent agree and strongly agree, 33 percent are uncertain and the next 34 percent disagree or strongly disagree. Here one observes some confusion around this topic. Usually, Each mailing list has subscribers that receive messages as part of an ongoing discussion of the list's topic.

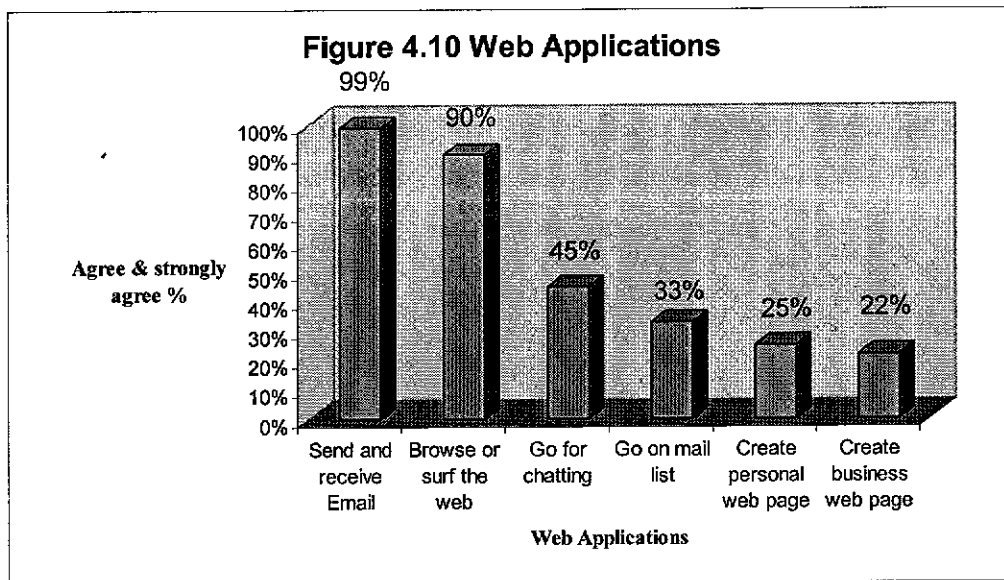
E. Web application results

All the previously mentioned web applications will be ranked from the most preferable application to the Lebanese users to the least preferable. Table 4.17 shows all the web applications and the percentages of the agree and strongly agree answers of the respondents.

Table 4.17 Ranking the web applications

Rank	Web Applications	Agree and Strongly agree percentage
1	Send and receive Email	99 %
2	Browse or surf the web	90 %
3	Go for chatting	45 %
4	Go on mailing list	33 %
5	Create personal web page	25 %
6	Create business web page	22 %

As expected almost all the respondents (99 percent) prefer to use the email and this is obvious since all users start with checking their emails whenever they open the Internet. Next, browsing and surfing the Internet ranked second with 90 percent. A lower percentage (45 percent) of respondents prefer to chat over the Internet which is also a widespread application among the youth. After chatting, going on mail list comes with a 33 percent because this application is also becoming widespread among university students. The last two web applications are creating personal web page then creating business web page which are less preferred for Lebanese users. Figure 4.10 shows a graphical presentation of results reported in Table 4.17.



After assessing Internet familiarity, E-commerce familiarity, Attitude towards E-commerce, and web applications ranking, the following section assess the respondents' preference of buying an item over the Internet.

F. The items that the users would buy if they decided from the Internet.

If you consider online shopping, do you search for the following products or line of product through the Internet?

151 respondents have answered this question. For every item the participants have to answer if they would always, frequently, rarely or never buy this item over the Internet. Table 4.18 shows a summary of the results.

Table 4.18 Respondents answers to their shopping preference

	Never	Rarely	Frequently	Always	TOTAL
Flowers	(77) 51%	(44) 29%	(21) 14%	(9) 6%	(151) 100
Books	(15) 10%	(43) 29%	(62) 41%	(31) 21%	(151) 100
Watches	(38) 25%	(48) 32%	(52) 34%	(13) 9%	(151) 100
Clothes	(57) 38%	(40) 27%	(33) 22%	(21) 14%	(151) 100
Jewelry	(85) 56%	(44) 29%	(15) 10%	(7) 5%	(151) 100
Makeup	(83) 55%	(40) 26%	(19) 13%	(9) 6%	(151) 100
Gifts	(32) 21%	(37) 25%	(57) 38%	(25) 17%	(151) 100
Software	(24) 16%	(35) 23%	(58) 38%	(34) 23%	(151) 100
Hardware	(37) 25%	(35) 23%	(49) 32%	(30) 20%	(151) 100
Average	33%	27%	27%	13%	

According to Table 4.18, 51 percent would never buy flowers online and 29 percent would rarely do it. This may be logical because of the nature and sensitivity of this product. Moreover, people would probably like to submit this gift on their own.

14 percent would frequently buy flowers and only 6 percent will always buy flowers over the Internet. The respondents would buy flowers online if they would like to send them to somebody outside Lebanon.

As for the books, 41 percent would like to buy books frequently and 20 percent would always buy books through the Internet. 29 percent would rarely buy books online. In fact, most web sites publish advertising of amazon.com and other famous books buyer sites for lower prices and fast delivery.

Watches are a controversial issue for the respondents since 25 percent would never buy watches over the Internet, 32 percent would rarely buy watches, 35 percent would frequently consider this product, and only 9 percent will always buy watches over the Internet.

Most watches are very expensive for the Lebanese and the fear of paying without getting the right product or not getting the product at all is the main reason why 56 percent would never or rarely buy this product online.

Clothes are also considered controversial product since 64 percent would never or rarely buy clothes over the Internet. Although clothes are displayed in the E-mails with all necessary description and size and a picture of the product, Lebanese users prefer to buy clothes from real stores for not getting the wrong size or the wrong model. Moreover, they like to touch the product.

On the other hand, 36 percent would frequently or always buy clothes over the Internet.

As for the jewelry, people become a little bit more concerned about costs, security, and privacy, ...For this reason almost all users are against buying jewelry over the Internet. 86 percent of the respondents would rarely or never buy any kind of jewels online. 10 percent would frequently buy this product online and 4.6 percent would always consider buying jewels from the Internet.

55 percent of the respondents would never search for make-up products on the Internet and 26 percent would rarely go to the Internet if they want to buy makeup. 13 percent would frequently buy makeup over the Internet and 6 percent will always do.

If the respondents consider buying gifts online, 54 percent of them would search for a gift over the Internet; 38 percent of them will frequently buy gifts online and 16 percent will always buy gifts from the Internet. Many people would like to send gifts to their relatives and friends abroad and the best thing is to buy, send, and pay the gift online.

However, 21 percent of the respondents would never buy gifts online and 24 percent would rarely look for any gift over the Internet.

Most of the respondents (61 percent) would frequently (38%) or always (23%) buy software from the Internet. 16 percent of the respondents will never do it for different reasons and 23 percent would rarely download software from the web sites.

Concerning the hardware, almost half of the respondents would never (25%) and rarely (23%) buy hardware from the Internet. People are sometimes afraid not to get the genuine and the best fitting product from the web sites. The other half would frequently (32%) and always (20%) look for the hardware through the Internet since they would get sometimes lower prices, better offers or better quality.

Shopping online is a highly tested topic in this study. Respondents have answered a question showing their willingness to buy different products over the Internet. The average result is that 33 percent of the respondents would never buy any product through the Internet as well as 27 percent who would rarely do. Another 27 percent would frequently go shopping online and the next 13 percent will always consider online shopping.

4.1.3 Statistical Analysis

In this study, data analysis showed some interesting findings concerning the Lebanese users' decisions to go shopping online, willingness to go online shopping in the future, Go online banking, Book the travel ticket over the Internet, Reserve in a hotel through the Internet, and Sell or buy stocks over the Internet and the factors affecting these decisions.

In order to test certain concepts and to add more validity to the findings reflected by the results obtained through the questionnaire analysis, a correlation followed by one-way ANOVA then a linear regression were implemented in order to test the significant differences in these users decisions across the different variables. This result was obtained at a significance level of 0.05.

The questions to be tested using computers by means of packaged statistical programs (SPSS) are the following:

- What are the factors that could affect participants' decisions to go shopping online?
- What are the factors that could affect participants' willingness to go shopping online in the future?

- What are the factors that could affect the users' decisions to do the following:
 - Sell or buy stocks over the Internet?
 - Participate in forums, newsgroups, or bulletin board systems for commercial online services?
 - Go for e-bidding?
 - Go online banking?
 - Reserve in a hotel through the Internet?

The correlation matrix.

In order to avoid multicollinearity among independent variables, and because multicollinearity could substantially affect the results of the multiple regression analysis, a correlation matrix was prepared to check the availability of large coefficients.

A. The factors that could affect the users' decision to go online shopping

Online shopping is an essential application of electronic commerce for Lebanese end users. Web sites that offer online shopping are becoming popular in Lebanon and mainly used to ship products abroad. Some people have taken this step and others are hesitant.

According to the correlation matrix, among the factors that could affect the users' decision to go online shopping are the users' belief that E-commerce include E-mall, users' belief that not all web sites are legitimate, going for online banking, and respondents' past experience using online shopping. Table 4.19 shows all the variables that affect the respondents' decisions.

Table 4.19 Variables Entered/Removed

Model	Variables Entered
	1 Did you ever booked your travel ticket over the Internet, E-mall, create business web page, Will you consider shopping through the internet in the future?, level of education, How do you measure your online skills?, Watches, Not all web sites are legitimate, Gender of the participant, Virtual companies, Do you think that EC is increasing?, Software, Do you think that e-c cut cost, Have you ever bought any product using online shopping? And what type of companies you deal with?, Have you ever participated in forums, newsgroups or bulletin board systems for commercial online services?, Do you go for online banking?, browse or surf the web, Salary, Did you ever reserved in a hotel

	through the Internet, E-bidding, Online Banking, Did you ever buy any product through the Internet?
--	---

a. All requested variables entered.

b. Dependent Variable: Have you ever tried to scan through Internet for shopping?

Statistical Tests and Evaluation

The typical linear regression computer program output presents certain statistical results that answer the questions:

- How well do variations in the independent variables explain variation in the dependent variable when taken individually and when taken together as a whole?
- Are the independent variables statistically significant?

For the regression as a whole, the test measures are:

1- **The coefficient of determination, R^2 .** R square = 0.54, meaning that 54 percent of the variation of online shopping is possibly explained by variation of all the variables stated above in the equation of best fit. That is, the increase in the trend of online shopping is 54 percent affected by the variables stated above.

Since the value of R^2 may range from zero to one and $R^2 = 0.54$ then there is also 46 percent of the variation of users' decisions of online shopping may be explained by other factors not included in the independent variables above. R square is shown in Table 4.20

2- **The F-Test for Overall Significance.** While R^2 shows whether the proportion of explained variation is high or low, these measures do not tell whether or not the explained variation is statistically significant. For that purpose, we use the ratio of variances known as the F-statistic. The F-statistic is shown in the regression table. $F = 6.839$. Table 4.21 shows that sig. is $0.00 < 0.05$ means that the F-statistic is accepted and the relation between shopping online and respondents' awareness of the presence of E-Mall, or going e-banking, or respondents' belief that not all web sites are legitimate, or past experience of online shopping are valid.

3- **The Standard Error of the Estimate.** It measures the dispersion of the observed data points from the regression plane of best fit. Given the standard error of the

estimate, $Se = 0.36$ one can calculate confidence intervals for the estimated value of online shopping for various level of confidence. Since Se is close to 0 there is a close relationship between users' decisions to go shopping online and all the independent variables stated as factors affecting online shopping. Se is shown in Table 4.20

Table 4.20 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.735	.540	.461	.36

a. Predictors: (Constant), Did you ever booked your travel ticket over the Internet, E-mall, create business web page, Will you consider shopping through the internet in the future?, level of education, How do you measure your online skills?, Watches, Not all web sites are legitimate, Gender of the participant, Virtual companies, Do you think that EC is increasing, Software, Do you think that EC cut cost, Have you ever bought any product using online shopping? And what type of companies you deal with?, Have you ever participated in forums, newsgroups or bulletin board systems for commercial online services?, Do you go for online banking?, browse or surf the web, Salary, Did you ever reserved in a hotel through the Internet, E-bidding, Online Banking, Did you ever buy any product through the Internet?

Table 4.21

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	19.646	22	.893	6.839	.000
	Residual	16.712	128	.131		
	Total	36.358	150			

a. Predictors: (Constant), Did you ever booked your travel ticket over the Internet, E-mall, create business web page, Will you consider shopping through the internet in the future?, level of education, How do you measure your online skills?, Watches, Not all web sites are legitimate, Gender of the participant, Virtual companies, Do you think that EC is increasing, Software, Do you think that EC cut cost, Have you ever bought any product using online shopping? And what type of companies you deal with?, Have you ever participated in forums, newsgroups or bulletin board systems for commercial online services?, Do you go for online banking?, browse or surf the web, Salary (in L.L) / month, Did you ever reserved in a hotel through the Internet, E-bidding, Online Banking, Did you ever buy any product through the Internet?

b. Dependent Variable: Have you ever tried to scan through Internet for shopping?

4- Testing Individual Parameters

So far we have tested for the reliability and significance of the independent variables as a group when all are allowed to vary simultaneously. It is also necessary to perform a separate test for the reliability and significance of each independent variable while all others are held constant. For these tests we use the standard error of the regression coefficient and the t-test ratio, both of which are included in Table 4.22

The next entry shows the regression coefficient for X, which is the b parameter in the estimated regression equation $Y_i = a + bX_i$, and for the regression constant, a. the remainder of the computer output is used in the evaluation of the regression analysis.

$$Y = -3.962 + 0.138EM + .135OB + .215L + .645B$$

$$(0.010) \quad (0.006) \quad (0.010) \quad (.000)$$

Where:

EM: respondents' belief that E-commerce includes E-mail

B: respondents' experience of buying products through the Internet

OB: respondents' willingness to go online banking

L: respondents' belief that not all web sites are legitimate

Table 4.22 Coefficients

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-3.962	3.542		-1.119	.265
E-mail	.138	.053	.241	2.608	.010
Do you go for online banking?	.135	.049	.217	2.779	.006
Not all web sites are legitimate	.215	.082	.184	2.632	.010
Did you ever buy any product through the Internet?	.645	.148	.589	4.372	.000

a. Dependent Variable: Have you ever tried to scan through Internet for shopping?

a- Standard Error of the regression coefficient. It measures the dispersion of values about the regression coefficient in the same way that standard deviation measures the dispersion of random variables about their means.

b- The Equation Interpretation. The interpretation of the equation is quite straightforward. As to "Respondents' belief that E-commerce includes E-Mall", the value of $b = 0.138$. The positive sign shows that there is a positive relation between

the belief that e-commerce includes E-mall and online shopping. The higher the Lebanese users' believe that there is E-Mall, the higher would they be willing to go online shopping.

The same interpretation method could be applied to the variable users' willingness to go e-banking. The positive beta coefficient for this variable suggests that the users that go e-banking, would be more encouraged to do online shopping. Hence, the more the Lebanese users go for online banking, the more likely will they go for shopping online.

However, this equation measures qualitatively and not quantitatively the relation of the dependent variable with the independent variables so that one could not measure quantitatively, for example, for how much unit there is an increase in online shopping for a unit increase in E-Mall.

c- Significance Analysis. A statistical significance test is performed to test the null hypothesis at a confidence level of 5 percent.

1. Sig. Of E-Mall = $0.01 < 0.05$ which means that the null hypothesis is rejected and one can be 95 percent sure that there is a relation between the respondents' belief that E-commerce includes E-mall and respondents' willingness to go online shopping. See Table 4.22
2. Sig. Of previous online shopping = $0.000 < 0.05$ which means the null hypothesis is also rejected and there is 95 percent assurance that there is a relation between the respondents' past experience in online shopping and the respondents' willingness to go online shopping.
3. Sig. Of respondents' willingness to go online banking = $0.006 < 0.05$ which means that one can be 95 percent sure that there is a relation between the respondents' willingness to go online banking and the respondents' willingness to go online shopping.
4. Sig. Of respondents' belief that not all web sites are legitimate = $0.010 < 0.05$ which means that 95 percent that there is a relation between the respondents' belief that not all web sites are legitimate and the respondents' willingness to go online shopping.

Overall Analysis

Online shopping is the most familiar E-commerce application among the Lebanese users. Online shopping is becoming more and more accepted and customers who are aware of the presence of E-malls as well as the customers who had previous experience in online shopping will be encouraged to go for online shopping. This is logical because the user who doesn't know that there are shops on the Internet as well as the user who does not have previous experience in online shopping will not be encouraged to go for online shopping. In addition, the respondents that go online banking will be also encouraged to go for online shopping. Thus, several factors influence the decision of going online shopping. However, there are also other factors that affect the decision to go online shopping not included in the regression equation.

B. The factors that could affect the respondents' willingness to go online shopping in the future.

According to the correlation matrix shown in Appendix B, the factors that could affect the respondents' willingness to go online shopping in the future are shown in Table 4.23. Among these variables, the researcher selects five variables to test if they affect the willingness of future online shopping. The variables are: creating a personal web page, buying books online, buying gifts online, going for online banking, thinking that E-commerce reaches global markets.

Table 4.23 Variables Entered/Removed

Model	Variables Entered
1	Did you ever buy any product through the Internet?, buying Gifts, Do you think that EC is badly managed, EC includes E-bidding, Age of participant, buy Books, Do you think that EC is increasing:, create a personal web page, Do you go for online banking?, Financial Institutions, Do you think that EC is easily used, Have you ever tried to scan through Internet for shopping?, E-commerce includes E-mall, Salary (in L.L) / month, Do you think that EC reach global markets, Do you think that EC is cheap.

a. All requested variables entered.

b. Dependent Variable: Will you consider shopping through the Internet in the future?

Statistical Tests and Evaluation

For the regression as a whole, the test measures are:

1- **The coefficient of determination, R^2 .** According to Table 4.24, R square = .412, meaning that 41.2 percent of the variation of respondents' willingness to go online shopping in the future is possibly explained by variation of all the variables stated above in the equation of best fit. That is, the increase in the trend of online shopping in the future is 41.2 percent is affected by creating personal web pages, buying books, gifts, going for online banking, and belief that E-commerce reaches global markets.

Since the value of R^2 may range from zero to one and $R^2 = 0.412$ then there is 58.8 percent of the variation of users' willingness to go online shopping in the future may be explained by other factors not included in the independent variables above.

2- **The F-Test for Overall Significance.** The F-statistic is shown in the regression table. $F = 5.869$. F-statistic is accepted since statistical significance is equal 0.000, which means that the relation between the respondents' willingness to go E-shopping in the future and all the independent variables is accepted at a significance level of 5 percent. See Table 4.25

3- **The Standard Error of the Estimate.** Given the standard error of the estimate, $Se = 0.29$, one can calculate confidence intervals for the estimated value of online shopping for various levels of confidence. Since Se is close to 0 there is a close relationship between users' willingness to go shopping online in the future and all the independent variables stated as factors affecting future online shopping. Se is shown in Table 4.24

Table 4.24 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.642	.412	.342	.29

a. Predictors: (Constant), Did you ever buy any product through the Internet?, buying Gifts, Do you think that EC is badly managed, E-bidding, Age of participant, buying Books, Do you think that EC is increasing, create personal web pages, Do you go for online banking?, Financial Institutions, Do you think that EC easily used, Have you ever tried to scan through Internet for shopping?, E-mail, Salary (in L.L) / month, Do you think that EC reach global markets, Do you think that EC is cheap.

Table 4.25

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	7.744	16	.484	5.869	.000
	Residual	11.051	134	8.247E-02		
	Total	18.795	150			

a. Predictors: (Constant), Did you ever buy any product through the Internet?, buying Gifts, Do you think that EC is badly managed, E-bidding, Age of participant, buying Books, Do you think that EC is increasing, create personal web page, Do you go for online banking?, Financial Institutions, Do you think that EC easily used, Have you ever tried to scan through Internet for shopping?, presence of E-mail, Salary (in L.L) / month, Do you think that EC reach, Do you think that EC is cheap
 b. Dependent Variable: Will you consider shopping through the Internet in the future?

4- Testing Individual Parameters

It is also necessary to perform a separate test for the reliability and significance of each independent variable while all others are held constant. For these tests the researcher used the standard error of the regression coefficient and the significant analysis, both of which are included in Table 4.26

Similarly, The next entry shows the regression coefficient for X, which is the b parameter in the estimated regression equation $Y_i = a + bX_i$, and for the regression constant, a.

$$Y = 4.133 - .101CP - .598B - .663G + 8.866E-02OB + .535R$$

(.000) (.039) (.014) (.014) (.032)

Where

CP: respondents' preference to a create personal web page

B: respondents' willingness to buy books online

G: respondents' willingness to buy gifts online

OB: respondents' willingness to go online banking

R: respondents' belief that EC reach global markets

Table 4.26 Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

Create personal web page	-.101	.021	-.353	-4.687	.000
Buying Books online	-.598	.287	-.153	-2.085	.039
Buying Gifts online	-.663	.265	-.188	-2.500	.014
Do you go for online banking?	8.866E-02	.036	.198	2.480	.014
Do you think that EC reach	.535	.247	.348	2.162	.032

a. Dependent Variable: Will you consider shopping through the Internet in the future?

a- The Equation Interpretation. The interpretation of the equation is quite straightforward. As to "Respondents' preference to create a personal web page", the value of $b = 0.101$. The negative sign shows that there is a negative relation between creating a personal web page and the willingness to go online shopping in the future. The higher the Lebanese users' preference to create a personal web page the less would they be willing to go online shopping in the future.

The same interpretation method could be applied to the variable users' willingness to buy books online. The negative beta coefficient for this variable suggests that the users that buy books online, would be less encouraged to do online shopping in the future.

Similarly, the more the users will consider online shopping in the future, the less they will consider buying a gift online and the more the respondents will go online banking, the more they will be encouraged to e-shopping in the future.

Finally, the more the users believe that E-commerce reaches global markets, the more they would consider shopping online in the future.

However, this equation measures qualitatively and not quantitatively the relation of the dependent variable with the independent variables so that one could not measure quantitatively, for example, for how much unit there is an increase in online shopping in the future for a unit increase in creating a personal web page.

b- Statistical Significance Analysis. If an individual variable is statistically significant, the true value of its parameter cannot be zero. Therefore, one must test the null hypothesis that the true parameter equals zero.

A significance analysis is performed to test the null hypothesis at a confidence level of 5 percent.

- 1- Significance of creating a personal web page is equal to .000 which is less than the level of significance, where $\alpha = 0.05$; means that one can be 95 percent sure that there is a statistically sound relation between creating a personal web page and the respondents' willingness to go online shopping in the future.
- 2- Significance of respondents' willingness to buy books through the Internet is equal to $0.039 < 0.05$ which means that the null hypothesis can be rejected and one can be 95 percent sure that there is a relation between the respondents' willingness to buy books through the Internet and the willingness to go online shopping in the future.
- 3- Significance of respondents' willingness to buy gifts through the Internet is equal to $0.014 < 0.05$ which means that the null hypothesis can be rejected and one can be 95 percent sure that there is a relation between the respondents' willingness to buy gifts through the Internet and the willingness to go online shopping in the future.
- 4- Significance of going e-banking is equal to $0.014 < 0.05$. This means that 95 percent there is a relation between going e-banking and willingness to online shopping in the future.
- 5- Significance of respondents' belief that E-commerce reaches global markets is equal to $.032 < .05$ then there is 95 percent certainty that there is a relation between reaching global markets and willingness to go online shopping in the future

Overall Analysis

Will you consider shopping through the Internet in the future? The statistical analysis of the questionnaires shows that there are five factors that affect the decision to shop online in the future as well as other factors not detected by the regression analysis. The willingness to go online shopping in the future is negatively affected by the respondents preference to create personal web page, buying books, gifts online, and is affected positively by going for online banking and the respondents' belief that E-commerce reach global markets.

Respondents who go for online banking will be more familiar using the Internet and will be more encouraged to go online shopping and consider online shopping in the future.

C. The factors that could affect the users' decisions to sell or buy stocks over the Internet

Trading with stocks over the Internet is one form of Electronic commerce. This issue was tested in the Lebanese market through the questionnaire.

Selling and buying stocks online is still a new trend in Lebanon where only University students are familiar with and participate sometimes.

According to the answers derived from the questionnaires and correlation matrix shown in Appendix B, the factors affecting trading with stocks over the Internet are presented in Table 4.27. The factor to be tested in relation with trading with stocks over the Internet is booking the travel ticket online.

Table 4.27 Variables Entered/Removed

Model	Variables Entered
	1 Did you go for an e-bidding?, Do you go for online banking?, Did you ever buy any product through the Internet?, Did you ever booked your travel ticket over the Internet

a. All requested variables entered.

b. Dependent Variable: Did you sell or buy stocks over the Internet?

Statistical Tests and Evaluation

For the regression as a whole, the test measures are:

- 1- **The coefficient of determination, R².** R square = .138, meaning that only 13.8 percent of the variation of respondents' willingness to sell or buy stocks online is possibly explained by variation of buying the travel ticket over the Internet. Similarly, there is 86.2 percent of the variation of users' decisions to go trade online with stocks may be explained by other factors than booking the travel ticket online. R square is shown in Table 4.28

2- **The F-Test for Overall Significance.** The F-statistic is shown in Table 4.29. $F = 5.828$. Significance of the regression is $0.000 < 0.05$, which means that the relation between trading with stocks over the Internet and booking the travel ticket online is accepted at a significance level of 5 percent.

3- **The Standard Error of the Estimate.** The standard error of the estimate, Se , is simply the standard deviation of the normal probability distribution of the residuals, or deviations, of the observed data points from the estimated regression line. That is to say, Se measures the spread of the possible observed values of online trading with stocks in a normal distribution about the estimated Y for any given value of booking the travel ticket online.

$Se = 0.35$ one can calculate confidence intervals for the estimated value of online selling and buying stocks for various level of confidence. Since Se is close to 0 there is a close relationship between users' trading with stocks and booking the travel ticket online. Se is shown in Table 4.28

Table 4.28 Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.371	.138	.114	.35

a. Predictors: (Constant), Did you go for an e-bidding?, Do you go for online banking?, Did you ever buy any product through the Internet?, Did you ever booked your travel ticket over the Internet

Table 4.29 Regression Table

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	2.910	4	.728	5.828	.000
Residual	18.226	146	.125		
Total	21.136	150			

a. Predictors: (Constant), Did you go for an e-bidding?, Do you go for online banking?, Did you ever buy any product through the Internet?, Did you ever booked your travel ticket over the Internet

b. Dependent Variable: Did you sell or buy stocks over the Internet?

4- Testing Individual Parameters

It is also necessary to perform a separate test for the reliability and significance of each independent variable while all others are held constant. For these tests the researcher used the standard error of the regression coefficient and the significant analysis, both of which are included in Table 4.30

The next entry shows the regression equation. The primary purpose of linear-regression analysis is to establish a linear equation that can be used to predict the value of trading with stocks online for any given value of all the independent variables.

Table 4.30 Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.098	.242		4.531	.000
Did you ever booked your travel ticket over the Internet	.261	.091	.236	2.866	.005

a. Dependent Variable: Did you sell or buy stocks over the Internet?

$$Y = 1.098 + .261T.T$$

(.005)

Where

T.T. is did you ever book your travel ticket over the Internet

a- The Equation Interpretation. Referring to the regression equation and Table 4.30, the value of $b = +0.101$. The positive sign shows that there is a positive relation between buying and selling stocks over the Internet and booking the travel ticket online. The higher the Lebanese users' book their travel ticket over the Internet, the more would they be willing to buy and sell stocks online.

This equation measures qualitatively the relation between buying and selling stocks over the Internet and booking the travel ticket online.

b- Statistical Significance Analysis. A significance analysis is performed to test the null hypothesis at a confidence level of 5 percent.

Sig. Of respondents' booking their travel tickets over the Internet = .005 < 0.05 which means that the null hypothesis is rejected and one can be 95 percent sure that there is a relation between the respondents' trading with stocks online and booking the travel ticket online.

Overall Analysis

Trading with stocks online seems to become more widespread among the young and educated users; however, buying and selling stocks online is less applied than online shopping. When trading with stocks is the issue, users are more concerned about risk and profit. There are 86 percent of the factors that affect trading with stocks over the Internet that are not detected in the regression analysis. However, there are factors like booking the travel ticket over the Internet that affect trading with stocks over the Internet.

D. The factors affecting the users' decisions to participate in newsgroups, forums, or bulletin board systems for commercial online services

According to the correlation results, the factors that affect the users' participations in newsgroups, forums, or bulletin board systems for commercial online services are shown in Table 4.31.

The factors that are tested in the regression equation are the age of the respondents, time spent using the Internet/month, the respondents' willingness to buy software over the Internet, and booking the travel ticket online.

Table 4.31 Variables Entered/Removed

Variables Entered	Method
Did you go for an e-bidding?, Age of participant, How much time do you spend using the Internet/month?, Do you go for online banking?, Do you think that e-c easily used, Software, Have you ever bought any product using online shopping? And what type of companies you deal with?, Did you ever booked your travel ticket over the Internet, Have you ever tried to scan through Internet for shopping?, How do you measure your online skills?, Did you ever reserved in a hotel through the Internet, Hardware, Did you	Enter

ever buy any product through the Internet?

a. All requested variables entered.

b. Dependent Variable: Have you ever participated in forums, newsgroups or bulletin board systems for commercial online services?

Statistical Tests and Evaluation

For the regression as a whole, the test measures are:

1- **Coefficient of Determination, R².** Table 4.32 shows that “R² = .327”. This indicates that about 32.7 percent of the variation in the dependent variable (participating in forums, newsgroups, or bulletin board for commercial online services) is possibly explained by variation in the independent variables listed as constant Table 4.31.

Since the value of R² may range from zero to one and R² = 0.327 then there is also 67 percent of the variation of users’ participation in forums, newsgroups, or bulletin board for commercial online services may be explained by other factors not included in the independent variables above.

2- **The F-Test for Overall Significance.** The F-statistic is shown in Table 4.33. F = 5.126. Significance of the regression is 0.000 < 0.05, which means that the relation between participating in forums, newsgroups, or bulletin board for commercial online services and the independent variables is accepted at a significance level of 5 percent.

3- **The standard error of the Estimate.** Se is the standard deviation of the normal probability distribution of the residuals, or deviations. Se = 0.32
There is only a 0.32 deviation of the observed values from the estimated values. Since Se is relatively close to 0, the more reliable will be the estimates of participating in forums, newsgroups or bulletin board systems for commercial online services that are calculated by the estimated regression equation for any given value of the independent variables listed above.

Table 4.32 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.572	.327	.263	.32

a- Predictors: (Constant), Did you go for an e-bidding?, Age of participant, How much time do you spend using the Internet/month?, Do you go for online banking?, Do you think that e-c easily used, Software, Have you ever bought any product using online shopping? And what type of companies you deal with?, Did you ever booked your travel ticket over the Internet, Have you ever tried to scan through Internet for shopping?, How do you measure your online skills?, Did you ever reserved in a hotel through the Internet, Hardware, Did you ever buy any product through the Internet?

Table 4.33 Regression Table

	Sum of Squares	df	Mean Square	F	Sig.
Regression	6.827	13	.525	5.126	.000
Residual	14.034	137	.102		
Total	20.861	150			

a- Predictors: (Constant), Did you go for an e-bidding?, Age of participant, How much time do you spend using the Internet/month?, Do you go for online banking?, Do you think that e-c easily used, Software, Have you ever bought any product using online shopping? And what type of companies you deal with?, Did you ever booked your travel ticket over the Internet, Have you ever tried to scan through Internet for shopping?, How do you measure your online skills?, Did you ever reserved in a hotel through the Internet, Hardware, Did you ever buy any product through the Internet?

b- Dependent Variable: Have you ever participated in forums, newsgroups or bulletin board systems for commercial online services?

4- Testing Individual Parameters

It is also necessary to perform a separate test for the reliability and significance of each independent variable while all others are held constant. For these tests the researcher use the standard error of the regression coefficient and the significant analysis, both of which are included in Table 4.34

The next entry shows the regression equation

$$Y = 2.905 + 7.902E-02A - 5.504E-02T - .775S + .342TT$$

(.007) (.039) (.034) (.001)

Where:

A: Age of the respondents

T: Time spent using the Internet /month

S: respondents' willingness to buy software online

TT: respondents' willingness to buy travel ticket online

Table 4.34 Coefficients

	UnstandardizeC oefficients	D Std. Error	Standardized Coefficients	t	Sig.
	B		Beta		
(Constant)	2.905	3.205		.907	.366
Age of participant	7.902E-02	.029	.214	2.757	.007
How much time do you spend using the Internet/month?	-5.504E-02	.026	-.182	-2.082	.039
Software	-.775	.362	-.207	-2.139	.034
Did you ever booked your travel ticket over the Internet	.342	.101	.312	3.376	.001

a. Dependent Variable: Have you ever participated in forums, newsgroups or bulletin board systems for commercial online services?

a- The Equation Interpretation. Referring to the regression equation and Table 4.34, the positive sign of "B" shows that there is a positive relation between participating in newsgroups, forums, or bulletin board systems and age of participants. However the negative sign of B shows that there is a negative relation between time spent using the Internet/month and participating in newsgroups, forums and bulletin board systems. Also, there is a negative relation between buying software and participating in newsgroups, forums or bulletin board systems.

Finally, there is a positive relation between booking the travel ticket online and participating in forums or newsgroups. The more the respondents are willing to book their travel ticket online, the more they will participate in newsgroups, forums, or bulletin board systems.

This equation measures qualitatively the relation between participating in newsgroups or forums and all the independent variables shown in Table 4.34

b- Significance Analysis. A significance analysis is performed to test the null hypothesis at a confidence level of 5 percent.

- 1- Significance of respondents' age is equal to $.007 < 0.05$ which means that the null hypothesis is rejected and one can be 95 percent sure that there is a relation between participating in forums, newsgroups, or bulletin boards and the age of the respondents
- 2- Significance of time spent using the Internet per month is equal to $.039 < .05$ which means that the null hypothesis is rejected and one can be 95 percent sure that there is a relation between how much time the respondents spent using the Internet per month and participating in forums, newsgroups, or bulletin boards.
- 3- Significance of buying a software online is equal to $.034 < .05$ which means that the null hypothesis is rejected and one can be 95 percent sure that there is a relation between buying a software online and participating in forums, newsgroups, or bulletin boards
- 4- There is also a positive relation between buying the travel ticket online and participating in newsgroups or forums. One can be 95 percent sure of this relation since significance of buying the travel ticket online is equal to $.001 < 0.05$

Overall Analysis

It is logical that participation in forums, newsgroups or bulletin board systems for ~~commercial online services~~ is the least applied application among all the Internet applications. Participating in forums, newsgroups or bulletin board is affected by several factors such as the age of the respondents, the time spent using the Internet, the decision to buy software online, and buying the travel ticket online.

However, there are also 67 percent of the variables that affect the decision to participate in newsgroups not included in the regression analysis.

E. The factors affecting the users' decisions to go E-bidding

According to the correlation results, the factors that affect the users' decisions to go E-bidding are shown in Table 4.35

Among these factors there are the respondents' decisions to buy watches online, respondents' belief that Electronic commerce is safe, booking the travel tickets over the Internet.

Table 4.35 Variables Entered

Variables Entered	Method
Did you sell or buy stocks over the Internet?, Do you think that EC is safe, Have you ever participated in forums, newsgroups or bulletin board systems for commercial online services?, Do you think that EC cut cost, buying watches, Have you ever bought any product using online shopping? And what type of companies you deal with?, Did you ever reserved in a hotel through the Internet, Did you ever booked your travel ticket over the Internet	Enter

a. All requested variables entered.

b. Dependent Variable: Did you go for an E-bidding?

Statistical Tests and Evaluation

For the regression as a whole, the test measures are:

- 1- **The coefficient of determination, R².** R square = .277, meaning that only 27.7 percent of the variation of respondents' willingness to go e-bidding is possibly explained by variation of all the independent variables. Similarly, there is 72.3 percent of the variation of users' decisions to go e-bidding may be explained by other independent factors not stated above. R square is shown in Table 4.36
- 2- **The F-Test for Overall Significance.** The F-statistic is shown in Table 4.37. F = 6.793. Significance of the regression is $0.000 < 0.05$, which means that the relation between going e-bidding and buying watches online, belief that E-commerce is safe, and booking the travel ticket online is accepted at a significance level of 5 percent.
- 3- **The Standard Error of the Estimate.** Se measures the spread of the possible observed values of going e-bidding in a normal distribution about the estimated Y for any given value of any of the independent variables.
Se = 0.24 one can calculate confidence intervals for the estimated value of online bidding for various level of confidence. Since Se is close to 0 there is a close relationship between e-bidding and all the independent variables like belief that

E-commerce is safe, buying watches online, booking the travel ticket online. Se is shown in Table 4.36

Table 4.36 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.526	.277	.236	.24

a. Predictors: (Constant), Did you sell or buy stocks over the Internet?, Do you think that Ec is safe, Have you ever participated in forums, newsgroups or bulletin board systems for commercial online services?, Do you think that EC cut cost, Watches, Have you ever bought any product using online shopping? and what type of companies you deal with?, Did you ever reserved in a hotel through the Internet, Did you ever booked your travel ticket over the Internet

Table 4.37

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	3.058	8	.382	6.793	.000
Residual	7.989	142	5.626E-02		
Total	11.046	150			

a. Predictors: (Constant), Did you sell or buy stocks over the Internet?, Do you think that EC is safe, Have you ever participated in forums, newsgroups or bulletin board systems for commercial online services?, Do you think that EC cut cost, Watches, Have you ever bought any product using online shopping? and what type of companies you deal with?, Did you ever reserved in a hotel through the Internet, Did you ever booked your travel ticket over the Internet
 b. Dependent Variable: Did you go for an e-bidding?

4- Testing Individual Parameters

It is also necessary to perform a separate test for the reliability and significance of each independent variable while all others are held constant. For these tests the researcher use the standard error of the regression coefficient and the significant analysis, both of which are included in Table 4.38

Similarly, The next entry shows the regression coefficient for X, which is the b parameter in the estimated regression equation $Y_i = a + bX_i$, and for the regression constant, a.

$$Y = 1.754 - .829W + .550S + .190TT$$

(,000) (,018) (,019)

Where,

CP: respondents' preference to a create personal web page

B: respondents' willingness to buy books online

G: respondents' willingness to buy gifts online

OB: respondents' willingness to go online banking

R: respondents' belief that EC reach global markets

Table 4.38 Coefficients

	Unstandardize d Coefficients	Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	1.754	1.151		1.524	.130
Watches	-.829	.223	-.286	-3.719	.000
Do you think that EC is safe	.550	.231	.180	2.387	.018
Did you ever booked your travel ticket over the Internet	.190	.080	.238	2.369	.019

a. Dependent Variable: Did you go for an e-bidding?

a- Standard Error of the regression coefficient. It measures the dispersion of values about the regression coefficient in the same way that standard deviation measures the dispersion of random variables about their means.

b- The Equation Interpretation. The interpretation of the equation is quite straightforward. As to "Respondents' willingness to buy watches online", the value of $b = -.829$. The negative sign shows that there is a negative relation between going e-bidding and buying watches online.

The same interpretation method could be applied to the variable users' belief that E-commerce is safe. The positive coefficient for this variable reflects that the users that believe that E-commerce is safe in Lebanon, would be more encouraged to do online bidding.

Similarly, the more the users book their travel ticket online will be more encouraged to do e-bidding.

However, this equation measures qualitatively and not quantitatively the relation of the dependent variable with the independent variables so that one could not measure quantitatively, for example, for how much unit there is an increase in e-bidding for a unit increase in buying watches online.

c- Significance Analysis

A significance test is performed to test the null hypothesis at a confidence level of 5 percent.

- 1- Sig. Of buying watches is equal to $0.000 < 0.05$ which means that the null hypothesis is rejected and one can be 95 percent sure that there is a relation between the respondents' willingness to buy watches online and going e-bidding. See Table 4.38
- 2- Sig. of belief that E-commerce is safe is equal to $0.018 < 0.05$ which means the null hypothesis is also rejected and there is 95 percent surety that there is a relation between the respondents' belief that E-commerce is safe and the respondents' willingness to go e-bidding. See Table 4.38
- 3- There is also a relation between booking the travel ticket online and going e-bidding at a significance level of 95 percent since significance of Buying the travel ticket online is equal to $.019 < .05$.

F. The factors that could affect the users' decisions to go online banking

Online banking is the most familiar Electronic commerce application in Lebanon after e-shopping.

According to the correlation matrix shown in Appendix B, the factors that could affect the respondents' willingness to go online banking in the future are shown in Table 4.39. Among these variables, the researcher selected four variables to test if they affect the willingness to go e-banking. The variables are: browsing or surfing the web, belief that E-commerce includes online banking, trying to shop from the Internet, and willingness to go online shopping in the future..

Table 4.39 Variables Entered/Removed

Variables Entered	Method
Do you think that EC is increasing?, How do you measure your online skills?, Will you consider shopping through the internet in the future?, Information brokers, Have you ever participated in forums, newsgroups or bulletin board systems for commercial online services?, E-mail, Do you think that EC cut cost, create business web page, browse or surf the web, Have you ever tried to scan through Internet for shopping?, Virtual companies, E-bidding, Online Banking, Financial Institutions	Enter

- a. All requested variables entered.
- b. Dependent Variable: Do you go for online banking?

Statistical Tests and Evaluation

The typical linear regression computer program output presents certain statistical results after certain tests are performed. These test measures are:

1- **The coefficient of determination, R².** R square = 0.395, meaning that only 39.5 percent of the variation of online banking is possibly explained by variation of all the variables stated above in the equation of best fit. That is, the increase in the trend of online banking is 39.5 percent affected by the variables stated above.

Since the value of R² may range from zero to one and R² = 0.54 then there is also 60.5 percent of the variation of users' decisions to go online banking may be explained by other factors not included in the independent variables above. R square is shown in Table 4.40

2- **The F-Test for Overall Significance.** While R² shows whether the proportion of explained variation is high or low, these measures do not tell whether or not the explained variation is statistically significant. For that purpose, the researcher used the ratio of variances known as the F-statistic. The F-statistic is shown in the regression table. F = 6.839. Table 4.41 shows that sig. is 0.000 < 0.05 means that the F-statistic is accepted and the relation between online banking and respondents' awareness of the presence of online banking, or browsing the Internet, or shopping on the Internet, or consider online shopping in the future may be accepted under the significance level of 5 percent.

3- **The Standard Error of the Estimate.** Given the standard error of the estimate, Se = 0.65 one can calculate confidence intervals for the estimated value of online banking for various level of confidence. Since Se is not very close to 0 there is

not a close relationship between users' decisions to go online banking and all the independent variables stated as factors affecting online banking. Se is shown in Table 4.40

Table 4.40 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.629	.395	.333	.65

a. Predictors: (Constant), Do you think that EC is increasing?, How do you measure your online skills?, Will you consider shopping through the internet in the future?, Information brokers, Have you ever participated in forums, newsgroups or bulletin board systems for commercial online services?, E-mail, Do you think that EC cut cost, create business web page, browse or surf the web, Have you ever tried to scan through Internet for shopping?, Virtual companies, E-bidding, Online Banking, Financial Institutions

Table 4.41 Regression Table

	Sum of Squares	df	Mean Square	F	Sig.
Regression	37.117	14	2.651	6.353	.000
Residual	56.751	136	.417		
Total	93.868	150			

a. Predictors: (Constant), Do you think that EC is increasing, How do you measure your online skills?, Will you consider shopping through the internet in the future?, Information brokers, Have you ever participated in forums, newsgroups or bulletin board systems for commercial online services?, E-mail, Do you think that EC cut cost, create business web page, browse or surf the web, Have you ever tried to scan through Internet for shopping?, Virtual companies, E-bidding, Online Banking, Financial Institutions

b. Dependent Variable: Do you go for online banking?

4- Testing Individual Parameters

In order to perform a separate test for the reliability and significance of each independent variable while all others are held constant, the researcher uses the standard error of the regression coefficient and the significant analysis, both of which are included in Table 4.42

The next entry shows the regression equation

$$Y = -1.877 + .209B + .245OB + .288S + .529C$$

(.020) (.014) (.033) (.001)

Where:

B: Brows or surf the Web

O.B: respondents' belief that E-commerce includes Online banking

S: buying products over the Internet

C: respondents' willingness to consider online shopping in the future

Table 4.42 Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-1.877	1.708		-1.099	.274
Browse or surf the web	.209	.089	.194	2.360	.020
Belief Online Banking	.245	.098	.262	2.486	.014
Have you ever tried to scan through Internet for shopping?	.288	.133	.179	2.156	.033
Will you consider shopping through the internet in the future?	.529	.162	.237	3.264	.001

a. Dependent Variable: Do you go for online banking?

a- The Equation Interpretation. The interpretation of the regression equation is as follows. As to "Respondents' preference to browse or surf the web", the value of $b = .209$. The positive sign shows that there is a positive relation between going for online banking and surfing the web.

The same interpretation method could be applied to the variable users' belief that E-commerce includes online banking. The positive coefficient for this variable reflects that the users that believe that E-commerce includes online banking in Lebanon, would be more encouraged to do online banking.

Similarly, the more the users go online shopping will be more encouraged to do e-banking.

However, this equation measures qualitatively and not quantitatively the relation of the dependent variable with the independent variables.

b-Significance Analysis. A significance test is performed to test the null hypothesis at a confidence level of 5 percent.

- 1- Significance of browsing the web is equal to $0.020 < 0.05$ which means that the null hypothesis is rejected and one can be 95 percent sure that there is a relation between the respondents' preference to browse or surf the web and going e-banking. See Table 4.42
 - 2- Significance of the respondents' belief that E-commerce includes online banking is equal to $0.014 < 0.05$ which means the null hypothesis is also rejected and there is 95 percent surety that there is a relation between the respondents' belief that E-commerce includes online banking and the respondents' willingness to go e-banking. See Table 4.42
 - 3- Significance of the respondents' willingness to go online shopping in the future is equal to $0.001 < 0.05$ which means the null hypothesis is also rejected and there is 95 percent surety that there is a relation between the respondents' willingness to go online shopping in the future and online banking. See Table 4.42
- Similarly, the same interpretation is applied to trying to shop using the Internet

Overall Analysis

Similar to automatic cash machines, computers allow customers to bank without taking up expensive bank teller time. Consumers have been just as slow as the banks to accept the Internet as a medium for managing everyday money matters.

However, there are factors that encourage the Lebanese users to go online banking. The respondents who browse the web, the respondents who are aware of the presence of online banking, and the respondents who go online shopping are encouraged more to go online banking. Thus, the more the users use the Internet and shop through the Internet, the more they will be familiar with the trend of doing the banking transactions online.

G. The factors that could affect the respondents' decisions to reserve in a hotel through the Internet

Using the Internet to look for and reserve in a hotel is increasingly widespread among the Lebanese travelers. What are the factors that influence the decision to reserve in a hotel through the Internet? According to the correlation matrix shown in Appendix B,

the factors that could affect the respondents' willingness to reserve in a hotel through the Internet are shown in Table in Table 4.43. Three of them will be tested and analyzed in order to test if they affect the decision to reserve online in a hotel. These variables are: the respondents' salary, the respondents' belief that E-commerce is increasing, booking the travel ticket over the Internet

Table 4.43 Variables Entered/Removed

Variables Entered	Method
Did you sell or buy stocks over the Internet?, Gender of the participant, Are you familiar with Electronic Commerce?, Have you ever participated in forums, newsgroups or bulletin board systems for commercial online services?, level of education, Watches, Hardware, E-bidding, Do you think that EC is increasing?, Have you ever bought any product using online shopping? and what type of companies you deal with?, How much time do you spend using the Internet/month?, Did you ever booked your travel ticket over the Internet, browse or surf the web, Have you ever tried to scan through Internet for shopping?, Software, Salary (in L.L) / month	Enter

a. All requested variables entered.

b. Dependent Variable: Did you ever reserved in a hotel through the Internet

Statistical Tests and Evaluation

The typical linear regression computer program output presents certain statistical results when certain measures are performed. These test measures are:

1- **The coefficient of determination, R².** R square = 0.537, meaning that only 53.7 percent of the variation of reserving in a hotel over the Internet is possibly explained by variation of all the variables stated above in the equation of best fit.

That is, the increase in the trend of reserving in a hotel online is 53.7 percent affected by the variables stated above.

Since the value of R² may range from zero to one and R² = 0.537 then there is also 52.7 percent of the variation of users' decisions to reserve in a hotel online may be explained by other factors not included in the independent variables above. R square is shown in Table 4.44

2- **The F-Test for Overall Significance.** In order to tell whether or not the explained variation is statistically significant, the researcher uses the ratio of variances known as the F-statistic. The F-statistic is shown in the regression table. F = 9.718. Table 4.45 shows that sig. is 0.000 < 0.05 means that the F-statistic is

accepted and the relation between reserving in a hotel over the Internet and salary/month, or belief that E-commerce is increasing, or booking the travel ticket over the Internet may be accepted under the significance level of 5 percent.

- 3- **The Standard Error of the Estimate.** Table 4.44 shows that the standard error of the estimate, $Se = 0.65$. One may calculate confidence intervals for the estimated value of reserving in a hotel over the Internet for various level of confidence. Since Se is not very close to 0 there is not a close relationship between users' decisions to reserve in a hotel over the Internet and all the independent variables stated as factors affecting online banking.

Table 4.44 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.733	.537	.482	.29

a. Predictors: (Constant), Did you sell or buy stocks over the Internet?, Gender of the participant, Are you familiar with Electronic Commerce?, Have you ever participated in forums, newsgroups or bulletin board systems for commercial online services?, level of education, Watches, Hardware, E-bidding, Do you think that ec is increasing:, Have you ever bought any product using online shopping? And what type of companies you deal with?, How much time do you spend using the Internet/month?, Did you ever booked your travel ticket over the Internet, browse or surf the web, Have you ever tried to scan through Internet for shopping?, Software, Salary (in L.L) / month

Table 4.45 Regression Table

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	12.912	16	.807	9.718	.000
Residual	11.128	134	8.304E-02		
Total	24.040	150			

a. Predictors: (Constant), Did you sell or buy stocks over the Internet?, Gender of the participant, Are you familiar with Electronic Commerce?, Have you ever participated in forums, newsgroups or bulletin board systems for commercial online services?, level of education, Watches, Hardware, E-bidding, Do you think that ec is increasing:, Have you ever bought any product using online shopping? and what type of companies you deal with?, How much time do you spend using the Internet/month?, Did you ever booked your travel ticket over the Internet, browse or surf the web, Have you ever tried to scan through Internet for shopping?, Software, Salary (in L.L) / month

b. Dependent Variable: Did you ever reserved in a hotel through the Internet

4- Testing Individual Parameters

In order to perform a separate test for the reliability and significance of each independent variable while all others are held constant, the researcher uses the standard error of the regression coefficient and the significant analysis, both of which are included in Table 4.46

The regression equation is the following:

$$Y = 8.315 - 8.599E-02S + .682I + .582TT$$

(0.001) (0.043) (0.000)

Where:

S: salary of the respondents

I: respondents' belief that E-commerce is increasing

TT: respondents' willingness to book the travel ticket online

Table 4.46 Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	8.315	3.019		2.754	.007
Salary (in L.L) / month	-8.599E-02	.026	-.298	-3.349	.001
Do you think that EC is increasing?	.682	.334	.137	2.044	.043
Did you ever booked your travel ticket over the Internet?	.582	.082	.494	7.113	.000

a. Dependent Variable: Did you ever reserved in a hotel through the Internet

a- The Equation Interpretation. The regression equation may be interpreted through the coefficient of the variables or the column B in Table 4.46. As to the variable “Salary”, the value of $b = -8.599E-02$. The negative sign shows that there is a negative relation between reserving in a hotel online and the salary of the user.

The same interpretation method could be applied to the variable users' belief that E-commerce is increasing. The positive coefficient for this variable reflects that the users that believe that E-commerce is increasing in Lebanon, would be more encouraged to reserve in a hotel online.

Similarly, the more the users are willing to book their travel ticket online, the more they will be more encouraged to reserve in a hotel online.

However, this equation measures qualitatively and not quantitatively the relation of the dependent variable with the independent variables.

b-Significance Analysis. A significance test is performed to test the null hypothesis at a confidence level of 5 percent.

- 1- Significance of the salary is equal to $0.001 < 0.05$ which means that the null hypothesis is rejected and one can be 95 percent sure that there is a relation between reserving in a hotel using the Internet and the salary. See Table 4.46
- 2- Significance of the respondents' belief that E-commerce is increasing is equal to $0.043 < 0.05$ which means the null hypothesis is also rejected and there is 95 percent surety that there is a relation between the respondents' belief that E-commerce is increasing and the salary. See Table 4.42
- 3- Significance of the respondents' willingness to book the travel ticket online is equal to $0.000 < 0.05$ which means the null hypothesis is also rejected and there is 95 percent surety that there is a relation between the respondents' willingness to book the travel ticket online and reserve in a hotel online. See Table 4.42

Overall Analysis

Reserving in a hotel through the Internet is becoming much more acceptable among users; however, more people are not willing to give their credit card numbers over the Internet to confirm their reservation for security reasons. This study shows that if one is to be encouraged to reserve in a hotel through the Internet, he should earn a higher salary. Also, if a user believes that E-commerce is increasing, he would be encouraged to use the Internet as a means to reserve in a hotel. This study shows another findings; if a person has a previous experience in shopping through the Internet, buying books more specifically, he would be also more encouraged to reserve in a hotel through the Internet.

After presenting the descriptive analysis and the statistical analysis of the questionnaires that show interesting findings about Lebanese consumers attitude and awareness to E-commerce and the related issues. The next section is a case study

about a Lebanese experience in E-commerce followed by an interview by the manager and the sales manager.

4.2. Netways: a Lebanese experience in E-Commerce

Netways: Let us build your e-Business site today!

4.2.1 Business Profile

A. Introduction

Conceived in the mid 1990's, right along the time of Lebanon and the region's first conception of the Internet and its early introduction to the Arabs and Lebanese masses, Netways has gone on to lead the growth and expansion of the World Wide Web in the Region. Thanks to its founders and visionaries, who are all experts and outstanding engineers, each using their individual talents, propelled Netways to provide full-service business solutions across a broad range of Internet, Intranet and Extranet products and services, leading the way in this millennium. From its early beginnings to its present Regional Network, Netways has expanded and is now operating in neighboring countries such as in Saudi Arabia, Syria, and the UAE, and soon to open branches in Egypt, Kuwait, France, and the USA.

Two innovative engineers founded Netways in April 1996. Netways has been providing technology-based marketing and operations solutions to leading companies in numerous categories and industry sectors. Their Portfolio includes the Lebanese Ministry of Environment, Ministry of Public Works, Ministry of Agriculture, Ministry of Public Research, National Council for Scientific Research, Internal Security Force, SNDP, Saudi Aramco, Saudi Passport, Khatib and Alami, Western Union, La Roche, Elie Saab, American Life, ABN AMRO, SEG, Holiday Inn, Wella, Howard Johnson, Pikasso, Rolf Benz, and Roche Bobois to name a few.

B. Their Approach

Netways believes and perseveres in providing the best solution, technology and support to its local and regional clients. Netways takes available global technology and apply it to suit its distinctive clients' needs.

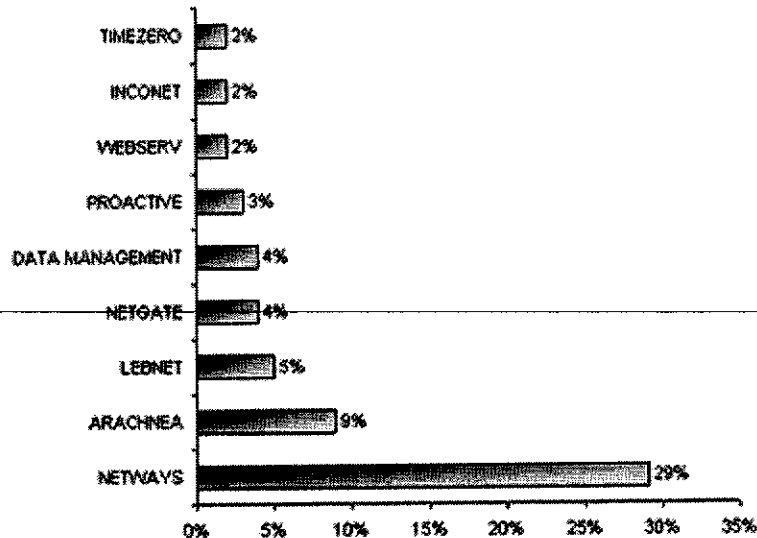
i. Management

Netways Top Management's Philosophy from the very beginning had always been Quality oriented. they are continuously evolving to fill client's needs and satisfaction. They strive from the sales phase, to product and services delivery to the finalization phase to assure and obtain clients' loyalty and commitment, as stated in our Company Quality Commitment: "Our customers, are not only our clients,- they are our partners, we help and stay with them on a long-term relationship to ensure their success in their business!"

The Top Management of Netways is committed to the Quality Program and because we surround ourselves with only the best, our employees are behind this program and are continually encouraged to achieve quality excellence.

Corporate > Our Success

DESIGNERS OF COMPANY HOMEPAGES



Source: InfoPro

FINDINGS EXTRACTED FROM INTERNET TRAK 2000, A STUDY BY INFOPRO RESEARCH

29% of the homepages designed by a web designing company were designed by Netways.

C. Examples of Netways Clients

www.aishti.com

www.alfurat.com

www.alrifai.com

www.bassile.com

www.maliaholding.com

www.legrandvert.com

Netways Address:

Beirut Office:

Ninth floor, al mathaf Center, Museum Region, Hotel Dieu Str.,

Tel: 00961-1-611110

Fax: 00961-1-611407

P.O.Box: 11-4181

Dubai Office:

Zalfa Bldg., Garhhood Road, Dubai, UAE

Tel: 00971-42-869993 / 00971-50-6969081

Fax: 00971-42-869994

Email: feedback@netways.com

D. Netways and Electronic Commerce application

Netways grew as technology advanced, by first offering traditional web site and hosting for companies to its present status as a full e-Commerce Service Provider

(CSP) firm, they are capable of providing the constancy as well as planning, management, training, marketing and operating, for any company's online e-Business. The idea for business-to-business and business to consumer electronic commerce involves an Internet centric service by which businesses can do business with businesses, or with consumer. The service involves "real time". It is the use of the global Internet for purchase and sale of goods and services, including maintenance and support after the sale. With the help of Intershop, they are able to provide E-Commerce solutions and elaborate them to meet the needs and requirements of our customers. With the help of the experts and the solutions, they are able to develop B2B and B2C solutions that are efficient, promising and profit generators. E-Commerce is wider than someone can imagine, it can be linking suppliers to large manufacturers or service organizations, and this forms a B2B solution. Since many companies are using the Internet as the communications basis for EDI applications, they specialize in creating EDI-Internet applications.

i. Intershop

Intershop is one of the world's leading providers of E-Commerce software solutions. Intershop is an E-Commerce pioneer, and has been a major driving force in promoting Internet-based business since 1994. As the true benefits of e-commerce become even clearer, intershop's vision of a digital economy holds huge promise for businesses that embrace the future. Intershop's customers operate in both the business-to-business and business-to-consumer arenas. Many are large companies operating their all e-commerce sites. Others are applications service providers (ASP)- intermediaries in abling e-commerce for businesses that choose to avail themselves of the best external expertise. For enterprise customers looking to sell anywhere on the Internet, Intershop developed Intershop infinity, a complete sell-side e-commerce application that offers advanced selling features combined with the ability to integrate with existing business systems. The elements of their products line-intershop e-pages, intershop hosting and intershop merchant -give Application Service Provider (ASP) state-of-that-art tools to realize the e-commerce aspirations of small and medium-sized businesses. To deliver maximum value to their customers, intershop offers professional services, consulting and support around the world. They also maintain global partnerships with leading system integrators, and more than 150 independent technology partners.

ii. D-Commerce

Netways has determined the strategic importance of Web auctions and other dynamic commerce opportunities through its vast experience in the field.

Consumers and businesses alike are demanding more personalized and enhanced purchasing experiences via e-commerce. In this new age, a variety of dynamic pricing applications can be utilized to help businesses acquire and retain customers. A number of these applications implemented by netways have proven successful online, including the auction, exchange, and automated bidding process. Implementing dynamic pricing applications help businesses decrease costs and increase revenues by creating more efficient markets. Online auctions and exchanges can costs and increase revenues by creating more efficient markets. Online auctions and exchanges can leverage every stage of the product life cycle and integrate with an overall pricing strategy.

As more and more industries adopt e-commerce strategies, every business needs to analyze how dynamic pricing can fit into their overall business plan.

iii. ASP

Netways has been recognized by its success stories in building ASP, Application Service Providers. These solutions have been designed and implemented carefully allowing external parties to connect to the ASP solution simultaneously. It is a cost effective solution where it combines multiple business units to perform online business by accessing one developed solution. By determining the proper integration among the different systems, we provide reliable and efficient interaction amongst the whole environment. This happens by means of permissions and authentication granted to each and every unit connected to the site. End-users will be granted different permissions depending on the Business Unit they are accessing. Application Service Provider Solutions fit for B-2-B and B-2-C applications and transactions regardless of he fields of business.

iv. Net Marketing

Many websites on the Internet are very well designed and developed, but still, are not making revenues or even being visited, as they should. Many reasons come up to

mind, but the main factor is the lack of the net marketing programs. The web designer should plan for an extremely efficient and useful campaign. They should set and apply marketing plans to many sites that came to be profit-making sites in no time. According to the objective of each site, different components may be used. Start by determining the target. Marketing on the Internet is the combination of communications with other recent applications of technology to marketing. Everyone can be a publisher on the Internet reaching the same worldwide audience as media firm. It is not limited to time or place. This property can be the basis of a marketing campaign that builds on the core capabilities of the network.

v. E-Business – Security

Businesses that accept transactions via the web can gain a competitive edge by reaching a worldwide audience, at very low cost. But the web poses a unique set of security issues, which businesses must address at the outset to minimize risk.

Customers will submit information via the web only if they are confident that their personal information, such as credit card numbers, financial data, or medical history, is secure.

Netways presents Technology Solutions that overcome security issue and are based on authentication and encryption. Authentication involves verifying the server and the client, while encryption involves coding the data sent over the Internet.

4.2.2 Interview

Netways is considered a Lebanese experience in Electronic commerce. Mrs. Rola Moussa, General manager and Mr. Youssef Zein, the sales manager were interviewed by the researcher in order to ask them about their experience in E-commerce in the Lebanese market.

A. Interview Questions and Answers

Q1-How do you evaluate the Lebanese Users' awareness towards E-Commerce?

A- Actually the Lebanese Users are relatively aware of what's related to E-Commerce. Awareness is rapidly increasing and especially among educated and young.

Q2- How do you evaluate the increase of E-Commerce in Lebanon?

A- E-commerce is increasing rapidly nowadays in Lebanon from consumers and businesses point of view.

Q3-What features do your customers stress in the web development of their sites?

A- They prefer Online Payments and simple accessible information.

Q4- Do you think e-commerce is:

- secure in Lebanon: Yes it is secure
- Less costly: Yes it's less Costly
- More effective than traditional commerce: Yes it is

Q5- Why are most Lebanese organizations developing their web pages?

A- In order to have an E-presence which is very important nowadays.

Q6- Do Lebanese customers accept the idea of e-shopping?

A- Since they are becoming aware of the E-commerce they are starting to accept the idea of e-shopping, but still they have some concerns about the security especially in the case of Credit card issue.

Q7- What is needed to encourage e-commerce activities?

- From end users side : Special discounts for online shoppers
- From Sellers side : effective distribution channels.
- From Government side : a percentage of the profit.

Q8- What recommendations do you give Lebanese businesses?

A- to go online

Q- Is the issue of security still a major issue to consider e-commerce?

A- actually no it's not classified as a major issue in E-commerce.

Q- What IT capabilities/ infrastructure are needed?

A- No IT capabilities are needed.

B. Interview Analysis

While questionnaire analysis reflects the customers points of view and thinking about E-commerce, this interview helps in analyzing the businesses point of view concerning some issues related to E-commerce.

The interviewees were asked about the Lebanese users' awareness and the increasing of E-commerce trend in Lebanon. According to the answers by the interviewees, E-commerce is increasing in Lebanon and users' are increasingly being aware of all the online activities. However, awareness about E-commerce and its use is becoming very widespread among the young generation and the educated people.

Concerning Lebanese businesses, more and more organizations are being aware of the importance of going online since e-presence is considered a competitive area nowadays. Referring to their experience with the Lebanese organizations that wanted to go online, the interviewees explained that the organizations prefer Online Payments and simple accessible information when developing their web sites. They want everything easy and clear so that customers with low online skills could go and use the online systems of the organization. In fact, most Lebanese organizations are stressing the online payment system in their web sites which is a step further in electronic commerce.

While Lebanese businesses seem to be enthusiastic with going online and establishing their E-presence, Lebanese customers are more concerned using the online systems. Despite the ease of use of the shopping sites, there is still a fear concerning the credit card issue. However, some people are accepting the idea of E-shopping without mentioning anything about e-bidding, or e-trade for example.

According to the interviewees, the security issue among their clients in Lebanon is not anymore considered a big issue or an obstacle for E-commerce. Electronic commerce in Lebanon is becoming more and more secure and customers have to bear some risks when going online. However, security is one of the advantages of E-commerce besides other advantages.

Other than being secure, the interviewees think that E-commerce is less costly as well as more effective than traditional commerce.

Some ideas need to be applied in order to encourage E-commerce activities in Lebanon. Referring to the interviewees, customers should be encouraged to do more online shopping by offering them good discounts when buying online. As for the sellers, they need to establish effective distribution channels. So that customers receive the products faster and safely.

Netways managers recommend that all Lebanese businesses go online and have their own web sites. Introducing their businesses on the Internet, and providing all the sales and payment services online is considered a competitive advantage for the Lebanese organizations especially because security issues are not any more a major issue for online businesses as well as customers. Businesses willing to go online may benefit from the fact that no infrastructure capabilities are needed as declared by the interviewees.

Finally, this interview reflects the increasing use and awareness of the Lebanese users for E-commerce applications and especially e-shopping. It also shows the advantages of E-commerce in Lebanon from security to cost to effectiveness. One can deduce that the interviewees are optimistic to what is related to E-commerce in Lebanon.

4.3 GlobalSign Lebanon

TRUST ON THE NET

4.3.1 Overview

GlobalSign operates as a neutral trusted third party. As such, GlobalSign Digital Certificates, enable individuals and corporations to secure personal and business communications across the Internet.

Digital Certificates are the electronic counterparts to drivers' licenses, passports and membership cards, providing a means of verifying a person's identity for electronic communications or transactions. A digital certificate binds an identity to a pair of electronic keys and is used to encrypt and sign digital information.

Globalsign was founded by the association of Chamber of Commerce Belgium and other leading banks and companies. In 1998, GlobalSign decided to go internationally and Lebanon was the first country. GlobalSign Lebanon started on December 15, 1998 and ever since they have been raising awareness at different levels in Lebanon and the region.

GlobalSign has helped in the draft law of digital signature that was presented to the government. In fact, GlobalSign is the only accredited company in Lebanon dealing with Global Signature and encryption..

The most powerful customers of GlobalSgin are MEA, Libancell, and Ministry of Foreign Affairs.

Future projects for globalSign would be in pursuing its role in raising awareness and using digital signature.

The obstacles that hinder GlobalSign way to more success are (1) Lack of political stability, (2) Digital Signature law still not approved by the government, (3) awareness still is not available and widespread.

4.3.2 Interview

GlobalSign is considered a Lebanese experience in Electronic commerce. Dr. Salah Rustum, Chairmain and CEO was interviewed by the researcher in order to ask him about his experience in E-commerce in the Lebanese market.

A. Interview Questions and Answers

Q1-How do you evaluate the Lebanese Users' awareness towards E-Commerce?

A. Lebanese Users are being more and more aware of E-Commerce. If we want to talk about university students or educated people, awareness percentage is the highest. Awareness is not the main issue, use and application of Electronic commerce is what counts. On the other hand, lots of graduate students are not aware of E-commerce applications because they don't like to read.

From the businesses side, most Lebanese companies are not aware of the advantages that E-commerce offers. They think it is an added expense.

Q2- How do you evaluate the increase of E-Commerce in Lebanon?

A. Awareness of E-commerce is highly increasing in Lebanon, but the use of E-commerce is from 2-3% at most among the Lebanese.

E-shopping is increasing in Lebanon but 75% of the purchases are products ranging from \$25-\$150, and 25% of the purchases are for more expensive products.

Q3- Do you think e-commerce is:

A. Totally secure in Lebanon: No, security is the main issue to consider when talking about E-commerce. Almost all the Lebanese organizations and banks that are going online are not providing security for the users. However, E-commerce is less risky than traditional business. Giving your credit card number online is not riskier than giving your credit card in real life.

Less costly: It is less Costly for the buyer but its very costly for the seller. The seller has to pay \$400 to the payment gateway and \$40

every month as well as 4% of every transactions. However, if secured E-commerce is applied in Lebanon, users can save more than 40% of their money.

More effective than traditional commerce: Yes it is.

Q4- What is needed to encourage e-commerce activities?

A. In order to enhance E-commerce, we should enhance users capabilities and in order to do that the government should reduce the cost of bandwidth as well as the cost of connection to encourage all Lebanese to go online.

The payment gateway should not be more than \$200.

More security is needed in order to encourage E-Commerce; all transactions should be digitally secure.

Q5- Do you think that the government is going forward in "E-government" efforts?

A. Yes, we shall somehow be positive about the steps the government is taking and the efforts in establishing E-government. In fact, the non-coherence or availability of inter ministerial collaboration is withholding E-government activities.

Q6- What recommendations do you give Lebanese businesses?

A. To go for automation but in the right way. They should think big, act small, and act fast. All organizations should consider transforming from traditional to paperless organizations. When going online in the right way, all organizations will save about 30 percent of their overheads. Then all organizations should consider using E-signatures to build trust with their customers and this will increase sales.

Q7- What recommendations do you give Lebanese customers?

A. Go using E-commerce applications and use e-signatures.

Q8- Why do you think most Lebanese customers are conservative using the E-commerce applications like online banking?

A. banks are not implementing security issues. Banks web sites should be authenticated even though it has an informative nature. This only creates trust which is the basis of confidence. Trust grows or diminishes because of the nature and results of activities. Here users are afraid to use these banking systems. Fear= lack of trust = hide money = no E-commerce

Q9- What IT capabilities/ infrastructure are needed?

A. A good postal office and a city organization.

We also need fiber-optic cables to cover all Lebanon.

Reduction in cost of bandwidth for ISP to render a good service for users.

Q10- What do you suggest to improve e-commerce applications in Lebanon?

- A.
- 1- ensuring access to information infrastructure
 - 2- Building user trust in Information systems and e-transactions
 - 3- minimizing regulatory uncertainty in the new environment
 - 4- Easy logistical systems for payments and delivery
 - 5- building user and consumer trust

Q11- How security system could be implemented in E-commerce transactions?

~~A. certification authority is the guarantee of the e-transaction users,~~
because

(1) It ensures **Authenticity**; taking an e-signature which introduce the user electronically. When the user holds an electronic ID certificated by a trusted third party. Certification authority issue digital Ids to users.

(2) It ensures **Integrity**; when signing a digital ID, the message will be received as sent by the sender. This will ensure the validity of the message that could not be intercepted by anybody

(3) It ensures **no repudiation**; that way the sender cannot deny that he has sent this message. Digitally signed mail cannot be denied. It is used in a court of law.

- (4) It ensures **Confidentiality**; the user cannot encrypt the content of a message; a 56 bit requires 40 hours to be cracked
 - a 57 bit requires 80 hours to be cracked
 - a 1024 bit requires hundred of years to be cracked
- (5) It ensures domain names and Web sites authenticity

B. Interview Analysis

Different issues about Electronic commerce in Lebanon as well as the security issues were discussed in an interview with Dr. Salah Rustum, CEO and Chairman of GlobalSign.

Dr. Rustum is very optimistic to what is related to Electronic commerce in Lebanon for several reasons. First, people are becoming more aware of E-commerce because the mentality and the attitude of the Lebanese is changing towards accepting the use of new technology. Second, some Lebanese businesses are becoming aware of the importance of going online. Third, Government is taking steps forward in encouraging the E-businesses. According to Dr. Rustum, the parliament is going to approve the law of Electronic signature by the end of year 2002 which will provide security for businesses and users as well.

On the other hand, Dr. Rustum thinks that nowadays Electronic commerce in Lebanon has some drawbacks.

While so many people are becoming more and more aware of the applications of electronic commerce, only 2-3 % of them use these applications for two reasons. First, people don't feel secure when shopping or doing bank transactions online. Second, people are not certain that they will get the right item when shopping or bidding online.

Similarly, while many Lebanese businesses are aware of the advantages of going online, some of them still look at their E-presence as incurring more costs, others do not feel secure when going online, providing their items over the Internet, and accepting payments online. However, almost all the businesses that are online are not

providing authentication, confidentiality, non repudiation and integrity to their customers. Banks as well are not providing security for the E-users that is why online banking is not a widespread application among the Lebanese users.

According to Dr. Rustum, the most important in improving the E-commerce in Lebanon is building trust between the users and the sellers or the businesses. Building trust comes from ensuring security so that all users feel safe when going online and giving their credit card in a secure environment. In fact, one way to ensure this security is through using digital signature and encryption because they ensure confidentiality, non repudiation, authentication, and integrity. Next, what is needed to improve E-commerce use in Lebanon is to lower the cost of using the Internet in a way that encourage the Internet use. Then, the gateway payment should be lowered from \$400 to \$200 at most for all businesses selling their items online.

Finally, while all these drawbacks and obstacles that hinder the increasing of the use of electronic commerce applications, Dr. Rustum is still optimistic that things are changing, and electronic commerce will be widely accepted in Lebanon in the near future.

The next section of this study presents the conclusion of the findings and results derived from previous sections and some recommendations are reached.

CHAPTER V

Conclusion and Recommendation

5.1 Conclusion

Even though it is a relatively new trend of doing business, E-commerce has been the subject for increasing researches and studies.

E-commerce applications support the buying and selling of products, services and information over the Internet and Extranets. For Example, many businesses use E-commerce websites for business to business, and business to consumer sales and support. Some other businesses use Extranets so large customers can access the company's inventory databases while others use the corporate intranet so employees can easily look up customer records stored on Intranet servers.

This study stresses the issue of Electronic commerce in Lebanon from customers as well as businesses point of view. Internet use and electronic commerce awareness have increased highly in Lebanon during the last years. A sample of 151 was chosen from the Lebanese university students and employees. Each one of the respondents filled a 6-page-questionnaire; these questionnaires contain several questions that stress different points such as testing Internet literacy of the respondents, testing Electronic commerce literacy of the respondents, testing attitude towards E-commerce as well as ~~other issues like factors that affect the respondents' decisions to go online banking,~~ shopping, bidding, trading with stocks, ...

The overall analysis of the questionnaires shows that Lebanese users are still hesitant using all E-commerce applications, however, some of them have taken a further step in shopping online or doing some available online banking transactions, or even bidding on some items through the Internet. People are willing to do more E-business activities over the Internet once they are satisfied with the security and authentication.

The overall analysis of the findings revealed that 95%-97% Lebanese users are hesitant in using E-commerce while 73 percent of the 151 filling the questionnaires are familiar with Electronic commerce. Although almost all (83 percent) have

medium or even high online skills, they prefer to just use E-mails (99 percent) or browsing the Web (90 percent).

Shopping through the Internet is still restricted to buying products that are cheap and easy to ship. Expensive items are not highly demanded through the Internet. The findings in the previous chapter revealed that 60 percent of the respondents will never or rarely use the Internet for shopping no matter what is the product. When considering shopping online, buying software is one of the highest product demanded (23 percent). According to Dr. Rustum, users are somehow familiar with online shopping, but most users are afraid to give their credit card numbers over the Internet or they are afraid to get the wrong item or to get it after waiting for too long. That is why when users consider e-shopping, most of them will be satisfied with buying cheap items not exceeding \$150. E-shopping is increasing in Lebanon but 75% of the purchases are products ranging from \$25-\$150, and 25% of the purchases are for more expensive products. This is also revealed in the questionnaire analysis where 85 percent of the respondents would never or rarely buy jewelry online, for example.

When online banking is considered, most respondents are still concerned about the security of the online banking transactions in Lebanon. Others are not satisfied with the available transactions offered by the Lebanese banks. In fact, the results of the questionnaires showed that 83 percent are aware of the presence of online banking but only 48 percent of them agree to make bank transactions online. This results seem logical because Lebanese banks are not providing secure environment for the users and most banks that are going online are not providing all banking transactions available.

When it comes to trading with stocks, people are a little bit encouraged to buy and sell stocks online because of the profit they might get. However, online trading with stocks is only widespread among some of the young and educated people and all others do not take the risk of selling and buying stocks online because either they are not interested in or because it is risky, or they don't know how to use it.

From the businesses point of view matters differ from the customers' point of view. Lebanese businesses are optimistic to the future of online business in Lebanon and

believe that awareness is increasing towards E-commerce in Lebanon and especially among the educated people.

Netways is a Lebanese organization that has an experience in electronic business and it is expanding its activities in electronic commerce. Netways' General Manager Mrs. Rola Moussa and sales manager, Mr. Yousef Zein, said that even more Lebanese businesses are aware of the importance of going online that is why all businesses are trying to have their E-presence. Going online will be one of the most important marketing issues for the Lebanese businesses. Nowadays, most Lebanese businesses web sites serve as information centers to the public, others have taken further steps and have introduced online shopping, online product ordering, and online payment systems. "Doing business online is considered more effective than traditional business", said Mr. Zein. Customers living in Beirut can now order their products from an online business in Tripoli, for example. Also, businesses that go online reach global markets inside and outside Lebanon.

Dr. Salah Rustum, CEO of GlobalSign, said that awareness towards Electronic commerce applications is increasing but the use of these applications is still shy.

To increase awareness among Lebanese users, government should first play a role in educating the new generation and to reduce the cost of using the Internet. Second, government should encourage all e-businesses by reducing the cost of going online by reducing the cost of payment gateway. Third, government is required to improve legal systems and facilitate IT issues. Fourth, government policies regarding E-commerce should be regionally coordinated and internationally harmonized. Fifth, Electronic commerce transactions should receive mental tax treatment.

On the other hand, customers are still concerned about being secure when going online. To eliminate fear and to establish trust between the user and the seller or the bank, Lebanese organizations should create a secure environment by implementing security systems like digital Id and electronic signature. Digital signature should be issued by a certification authority so that the user can perform safe and secure.

Lebanese users do accept all new technologies and electronic commerce is being accepted in a way or another by the educated people first and it will be widespread among the majority of the Lebanese users. In fact, the increase of E-commerce is

highly related to the use of Internet. The use of Internet is related to the online skills of the users and the cost of going online. Thus, implementing new education systems that enhance Internet literacy and reducing the cost of going online, will encourage the use of the Internet and consequently will increase Electronic commerce and its applications.

According to Dr. Rustum, when it comes to online banking, 90 percent of the users are still afraid from the online banking systems implemented in the Lebanese banks. These systems do not provide enough security for the users. Online banking will not be successful in Lebanon until the users feel confidence with the banking systems.

“Electronic commerce will benefit the Lebanese customers as well as the Lebanese businesses.” said Dr. Rustum. Customers should get whatever they want effectively and efficiently and businesses should reach global markets and benefit from their E-presence. This is only done when Electronic commerce systems are efficient and secure in a way to build confidence and trust between customers and businesses. One way to build this trust is implementing the needed security systems such as the digital signature. The digital signature should be obtained from a certification authority which will serve as the guarantee of the e-transaction users, because (1) It ensures **Authenticity**; taking an e-signature which introduce the user electronically by holding an electronic ID certificated by a trusted third party, (2) It ensures **Integrity**; this will ensure the validity of the message that could not be intercepted by anybody, (3) It ensures **no repudiation**; that way the sender cannot deny that he has sent this message. Digitally signed mail cannot be denied, (4) It ensures **Confidentiality**; the user cannot encrypt the content of a message, and (5) It ensures domain names and Web sites authenticity

Accepting Electronic commerce as the most effective way to do business is finally related to patterns of future life and the mentality of people.

5.2 Limitation of the study

First, Electronic Commerce is still a new trend of doing business as well as a new pattern of life. In fact, fewer studies have been tackling this topic and fewer people are involved in the details of this topic. While secondary international sources are available through Internet or magazines or books, personal Lebanese experience and professional Lebanese people were hardly available for the researcher.

Second, this study was done on a sample of one hundred fifty one respondents, which is a relatively small sample compared to the population. In addition, an interview with a government related person was not held in order to add the government point of view concerning this topic and to mention the future projects of the government concerning E-commerce.

5.3 Recommendation

The findings and results of this study lead to some general recommendations and suggestions. Some steps are needed from the end users, businesses and the government side in order to encourage E-business applications in Lebanon.

First, Customer should be educated about E-issues customers are requested to read more and use the technology available and have some confidence in the Electronic business.

Second, the banks and other businesses that are going online have to implement security systems that help in building the trust between them and the users. Online banks should ensure that their customers' accounts and transactions will be safe and explain to their customers their security systems if any are used. Moreover, online banks have to enhance their online transactions and make almost all banking transactions available online. On the other hand, other businesses that sell products online have to ensure confidentiality as well as authentication to their users. In fact, all businesses should respect their online promises concerning price, quality, and time of delivery and implement easy systems for payments and delivery.

Third, the government should lower the cost the Internet connection in order to encourage the use of the Internet and Electronic commerce as well. In addition, the

government should implement neutral tax treatment. Taxation should be consistent with established practiced and established in the least burdensome manner.

Fourth, E-government should be more introduced in the Lebanese citizens as well the Lebanese businesses. For example, businesses should be able to transmit the financial statements as well as VAT returns through the Internet. Legal documents to attorneys and vice versa should be transmitted in a secure environment.

Fifth, businesses should be encouraged to have their e-presence by lowering the cost of payment gateway, which is very expensive nowadays.

5.4 Future Research Recommendations

First, this study was done on a sample of one hundred fifty one respondents. The researcher suggests that a bigger sample will be chosen for further research. In addition, an interview with a government related person should be held in order to add the government point of view concerning this topic and to mention the future projects of the government concerning E-commerce.

Second, conduct a study on E-Commerce encouragement through pricing schemes.

Third, conduct a study on elective marketing vs. sensoring.

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