

**The Impact of E-commerce on
Developed and Developing Countries
Case Study: Egypt and United States**

Dr. Zeinab Mohamed El Gawady¹
Lecturer of Economics
Misr University for Science and Technology
Faculty of Business & Economics
Giza-Egypt

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ABSTRACT

Electronic commerce may have large economic effects in the future. Internet commerce will change the face of business forever. Moreover, e-commerce will change banking in 21st century.

The e-commerce has affected the global economy in many different ways. First of all, it has affected the information technology, and all the economic sectors, all and above e-commerce has enhanced the productivity growth worldwide and here we are going to discuss this impact, they are able to identify the number of qualified people needed to advance their country's information economy or to calculate the amount of investments needed to provide business with access to the internet.

Some countries are already benefiting from the results, they are now in apposition to benchmark their economies with competitors internationally and there are many ways to accelerate the growth of productivity but the reason for this is rather controversial. Banks and financial services companies in the developing countries will need to adopt online payment system, to obtain e-trade finance and equity investment, tourism and its internet incarnation is regularly cited as one of the fastest growing e-commerce sectors

E commerce is rising at 12% annually in the U.S, and EU. It is expected that in the few coming years the productivity gap between the European countries and the United states will close rapidly . E-commerce sales are expected to reach \$3.2 trillion by 2005. Advancing the Internet revolution is more than ever a key public policy goal.

The impact of e-commerce on developing countries could be even stronger than that on developed countries because the scope for reducing inefficiencies and increasing productivity is much larger in the developing countries.

To summarize, by cutting costs , increasing efficiency and reducing time and distance, e-commerce could become an important tool for development.

Key words: (e-commerce), electronic commerce, (IT) information technology, (ICT) internationally comparable technology, (GDP) gross domestic product.

Introduction

Electronic commerce may have large economic effects in the future. Internet commerce will change the face of business forever. The e-commerce has affected the global economy in many different ways. First of all, it has affected the information technology, and all the economic sectors, all and above e-commerce has enhanced the productivity growth worldwide and this impact will be discussed.

E-commerce sales are expected to reach \$3.2 trillion by 2005. Advancing the Internet revolution is more than ever a key public policy goal.

What is E-commerce ?

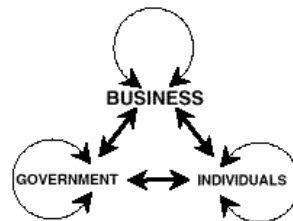
It is clear that e-commerce is a very broad concept and does not have a clear cut definition.

One way of defining it, is that, it is a way of doing business transactions via the internet.

E-commerce or e-business is based on the electronic processing and transmission of data, including text, sound, and video.

E-commerce as it is commonly known is the use of technology to conduct financial transactions online².

E-commerce can occur within and between three basic participant groups – business, government, and individuals (see Figure).



E-commerce Market Models ³

1. *Business to Business (B2B)*

Business to Business or B2B refers to e-commerce activities between businesses. These transactions are usually carried out through Electronic Data Interchange or EDI⁴. This allows more transparency among business involved; therefore business can run more efficiently.

²E-commerce uses a range of technologies . Some technologies such as electronic data interchange (EDI) , electronic mail (e-mail), electronic funds transfer (EFT), are already in wide use. Some of them (e.g. electronic data interchange - EDI), will require agreement between trading partners (buyers and suppliers) in order to govern their electronic trading relationship. **Electronic Data Interchange (EDI)** (Electronic Data Interchange) is a standard format for exchanging business data.

EDI is one form of e-commerce that also includes e-mail and fax. EDI data exchange among parties that know each other well and make arrangements for one-to-one connection, usually dial-up. EDI is the inter-organizational, computer-to-computer exchange of business documentation in a standard, machine-process able format. EFT was designed to optimize electronic payments with electronically provided remittance information.

<http://en.wikipedia.org/wiki/electronic-commerce>.

³ www.pigseye.kennesaw.edu.

[http:// home.utm.utoronto.ca/jmt/260web_tanjuakioJoyce/CCT260](http://home.utm.utoronto.ca/jmt/260web_tanjuakioJoyce/CCT260%20WebSite/page5.html) WebSite/page5.html.

2. Business to Customer (B2C)

Business to Customer or B2C refers to e-commerce activities that are focused on consumers rather than on businesses.

3. Customer to Business (C2B)

Customer to Business or C2B refers to e-commerce activities, which uses reverse pricing models where the customer determines the prices of the product or services. There is increased emphasis on customer empowerment.

4. Customer to Customer (C2C)

Customer to Customer or C2C refers to e-commerce activities, which uses an auction style model. This model consists of person-to-person a transaction that completely excludes businesses from the equation.

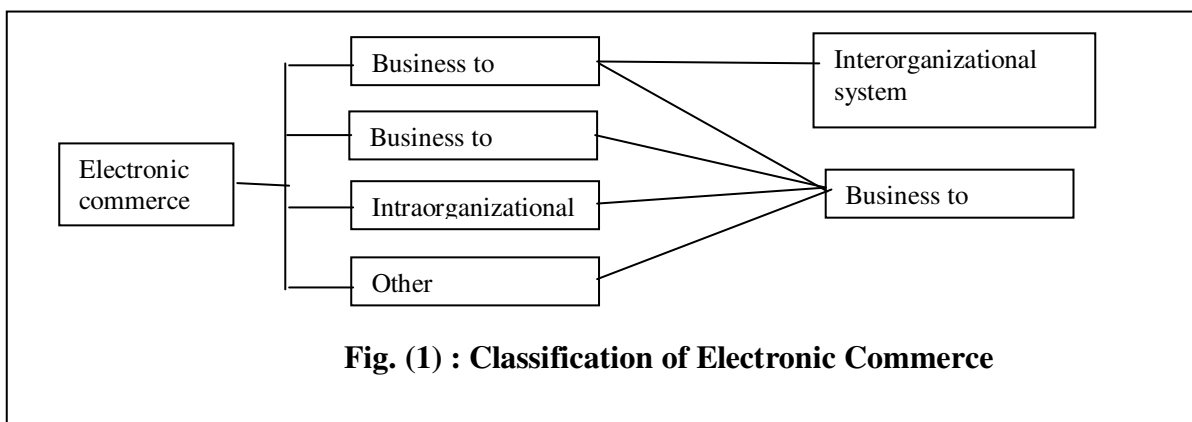


Fig. (1) : Classification of Electronic Commerce

Issues Affecting the Development of E-commerce⁵

There are a number of issues affecting e-commerce which are:

1. Taxation
2. Security
3. Privacy
4. Profitability
5. Content
6. Participation in new international standards development

⁴ It has been mentioned before in E-commerce definition

⁵ [http : : encarta.msn.com/encvclonedia/701509010/3/E-commerce.html](http://encarta.msn.com/encvclonedia/701509010/3/E-commerce.html)

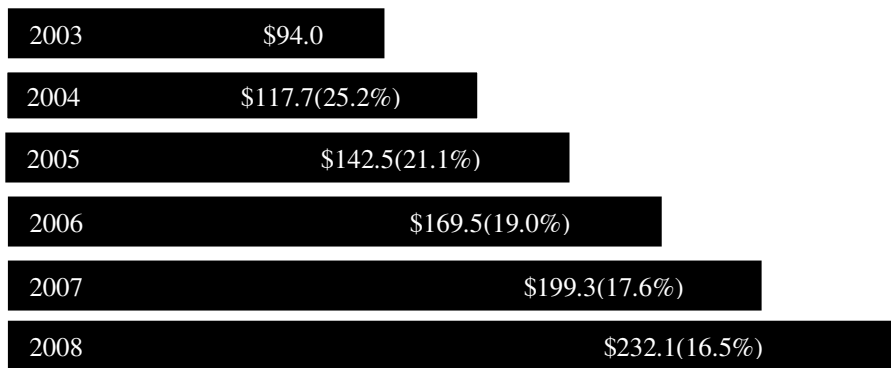


Fig. (2) : Us Retail E-Commerce Revenues

* 2003-2008 (in billion and as a % increase vs. prior year)

Advantages of E-commerce⁶ :

For Consumers

- Reduced Prices
- Global Marketplace
- 24 Hour Access

For Businesses

- Increased Potential Market Share
- Low-Cost Advertising
- Low Barriers to Entries

Disadvantages of E-commerce⁷

For the Consumer

- Unable to Examine Products Personally
- Online Purchasing Security

For the Business

- Hardware and Software
- Maintenance of Website
- Costs
- Website Stickiness and Customer Loyalty
- Training and Maintenance .

⁶ <http://j/home.utorn.utoronto.ca/Njrn/CC T 2buV,febSite°io2GfoiderJCCT2 6uWebSite/page3.htm i#wto>

⁷ <http://home.utm.utoronto.cai~jmt%CC i2tiUWebSite%20folder%CCCT2ti0WebSite%page4.html>

Technical and Operational Factors of E-commerce

1-Protocol (Standards) Making Process

A well-established telecommunications and Internet infrastructure provides many of the necessary building blocks for development of a successful and vibrant e-commerce marketplace.

2- Delivery Infrastructure

Successful e-commerce requires a reliable system to deliver goods to the business or private customer.

3- Availability of Payment Mechanisms

Secure forms of payment in e-commerce transactions include credit cards, checks, debit cards, wire transfer and cash on delivery.

4- General Business Laws

The application of general business laws to the Internet will serve to promote consumer protection by insuring the average consumer that the Internet is not a place where the consumer is a helpless victim.

5- Public Attitude to E-commerce

The public attitude toward using e-commerce in daily life is a significant factor in the success of e-commerce.

6- Business Attitude to E-commerce

The willingness of companies to move away from traditional ways of doing business and develop methods and models that include e-commerce is essential.

The Problem Facing E-commerce in Developing Countries

1. Awareness and education : A lack of awareness is a crucial barrier to the implementation of e-commerce in developing countries.

2. Market size: business to consumer

3. E-commerce infrastructure which includes Lack of a certificate authority.

Priority Focus Areas:

It is crucial for a champion in the government to carry forward the necessary steps to implement e-commerce in the country.

1. Promotion and awareness.

2. Human resource and skills development.

3. Liberalization of telecommunications infrastructure development.

4. Regional strategy.

5. Financial services.

How E-commerce will Affect the Economy?

The electronic economy will force change within nation states.

The modern nation state remains the most prevalent unit of governance in the developed and the developing world. The concept has, in the last 50 years, been extended rather than retracted. There are now more than 200 hugely different nation states, with different legal and regulatory systems, existing in the world. In this context, we define a nation state as a coherent territory circumscribed by defined borders over which the single national government has legitimate jurisdiction. During its 200 year history, the nation state has endured many changes. However, the advent of the electronic economy is confronting the nation state, with intimations of a future in which its relevance to its citizens and enterprises will be challenged.

The apparatus of economic regulations and taxation through which nation states operate was developed to support and facilitate industrial economy. That economy produces tangible and location bound services that are sold and distributed within and between fixed borders. In that familiar world of national and international trade, nation states have a variety of tools at their disposal to achieve their economic ends. They can levy tariffs on imports, raise taxes, protect consumers rights, punish economic criminals, set commercial standards, and provide guarantees of monetary payment. Until recently, these tools were supported by governments majority control over communications networks and information dissemination .

Because of the emergence of global communications networks, the nation state is gradually losing monopoly control of information and financial flows. Private individuals and enterprises and groups now have the ability to source , package, and transmit information in compressed time and space. Through “digitization” currency, services, and even some goods can be conveyed immediately, transacted invisibly across the globe. Interactive networks are creating a new, network-linked world without borders, in which many commercial transactions are beyond the reach of national jurisdictions, laws, and taxation systems. As a result, many of the economic instruments and processes of the nation state need to be reexamined in the light of these new challenges.

It is nation state powerless before this new global economic system ?As electronic commerce grows, there is some risk that those nation states that have not fully embraced the changes could become marginal to the creation of economic value and electronic economy? Could the changes erode the individuals sense of national belonging, undermine tax bases, bypass national laws and undermine the rights of citizens?

The Global Economy and E-commerce: An Overview

It was claimed that, between 1994 and 1998, the information and communications industries had lowered US and UK inflation by 0.5% a year and would increase sustainable growth by 0.5% a year over the next decade⁸.

In 1999, companies invested \$280 million in e-commerce infrastructure and Internet presence and venture capitalists in the U.S. risked \$32 billion in web-based businesses. Total Internet

⁸ www.Ditchle_news.htm.

purchases in 1999 were estimated at \$130 billion and it was believed that it will reach \$2.5 trillion by 2004.

In the short term, e-commerce and advertising revenues will remain largely within the United States. By 2003, the U.S. will retain more than half of all e-commerce revenue, with Europe representing about a third. The U.S. accounted for 85 % of all online ad revenues in 2002 according to Forrester Research, and will keep more than two-thirds through 2004.

As a multi-national organization, the European Union illustrates the idea that while the Internet is borderless and global, local conditions matter to the success of e-commerce. The key factors which will lead to significant growth in e-commerce are the adoption of the Euro as the single unit of currency, the continued liberalization of telecommunications infrastructure throughout the Union and the increased use of the Internet.

By most estimation used, we found that over 95% e-commerce takes place in developed countries, with Africa and Latin America combined accounting for less than 1% of the total. Business to business ([B2B](#)) transactions represents around 95% of all e-commerce transactions worldwide⁹.

The Global Economy and E-commerce Statistics Overview:-

- Revenues from 1998-2003 (Table 1).
- Global spending on internet security software 1998-2003 (table 2).
- Worldwide sales of internet appliances differed from USA to Europe and Asia (table 4).
- Worldwide Internet Advertising and Internet Advertising spending from 2000 to 2005. (table 5 & table 6).
- the ratio of websites that permit e-commerce transactions verses those that don't. (Table 7 & Fig. 3) .
- The Corporate E-Commerce Spending & purchases Worldwide, 2000-2003.(Tables 8-9).
- E-commerce expenditure on software in Europe 1999-2002 (Table 11)
- Preparedness for e-commerce (table 13).

⁹ Source : www.eto.org.uk

E-commerce in the Arab Region and Egypt

Although e-commerce was introduced only recently as a business idea to Egypt, there already have been voluntary and professional efforts to raise awareness about e-commerce through organizations, workshops, and commercial attempts to implement e-commerce projects. This section furnishes a profile of e-commerce activity and efforts in Egypt.

E-commerce statistics in the Arab Region

An overview in different Arab countries that clarifies the number of telephone lines in 1996 per 1000 in the Arab countries averaged 49 , on the other hand worldwide average was 133 and this shows a huge gap which equals 84 between Arab countries and rest of the world. (Table 15).

In different Arab countries that clarifies the number of Internet users (October 1998) per 100 person in the Arab countries that averaged 50.6 , on the other hand worldwide average was 120 and this shows a great gap which equals 2495 between Arab countries and rest of the world. (Table 16).

The Development of Telephone Lines in the year 2000

The Arab region, in which the Internet has been slow in blossoming, suffers from poor phone service. The number of phone lines per capita lags behind the developed world and most of Latin America and Asia. In Egypt, there are just 60 fixed phone lines per 1,000 people - compared to 102 in Syria, 471 in Israel and 661 in the United States for year 2000. In consequence, Egypt allows foreign telecoms to enter its market only as Internet service providers.

E- commerce in USA : an Overview

Internet sales and transactions in the retail and services sectors increased significantly from \$15 billion in 1999 to \$44 billion in 2002.

The Census Bureau of the U.S noted that in 2002 retail e-commerce sales represented only 1.5 % of total retail sales. However, studies have shown that e-commerce has become very significant in certain product categories.

Total retail sales in 2004 increased 7.8 % ($\pm 0.3\%$) from 2003. E-commerce sales in 2004 accounted for 1.9 % of total sales. E-commerce sales in 2003 accounted for 1.6 % of total sales.

Note : By 2008 , 10% of total US sales will be completed online. Over 63 million US households will shop online in 2008. (table 17).

It is to be noted that while e-commerce is expected to continue its remarkable growth, it still represents only a small percentage of total retail sales. In 1999, e-commerce in the U.S. accounted for 1 % of total retail sales and is expected to reach only 15 % by 2010.

The Census Bureau of the Department of Commerce announced that the estimate of U.S. retail e-commerce sales was \$10.043 billion for the fourth quarter of 2001, an increase of 13.1 % ($\pm 4.1\%$) from the fourth quarter of 2000. Total retail sales for the fourth quarter of 2001 were estimated at \$860.8 billion, an increase of 5.3 % ($\pm 0.6\%$) from the same period a year ago.

The Ministry of international trade and industry in March, 1999 estimated that the market size between United states and Japan in business to consumer and business to business (table 19) .

How E-commerce affect business of the US.¹⁰

In recent years, e-commerce has emerged as the fastest growing sector of the U.S. marketplace. Despite the contraction in the high-tech industry during the recent recession, firms have continued to enter and expand their presence in e-commerce , and consumers have increased the number of purchases made online. E-commerce currently represents a very small share of overall commerce, but it is expected to continue to expand rapidly in coming years. As e commerce grows, so will its impact on the overall economy. The primary route by which e-commerce will affect the economy at large is through its impact on productivity and inflation. Business and consumers that use e- commerce benefit from a reduction in costs in term of the time and effort required to reach for goods and services and to complete transactions. This reduction in costs results in higher productivity. An even larger increase in economy – wide productivity levels may result from productivity gains by firms not engaged in e-commerce as they respond to this new source of competition.

Continued expansion of e- commerce may also lead to downward pressure on inflation through greater competition, cost savings, and changes in price-setting behavior of sellers. It was examined that economic factors that have contributed to the rapid growth of e-commerce and assesses how the future growth of e- commerce may affect the overall economy. That concluded e-commerce continues to grow rapidly, it could lead to an increase in productivity growth and downward inflationary pressures that persist for several years.

E-commerce Organizations in Egypt

E-commerce is one of the most important instruments of the economy. The government is keen to increase its usage and that appeared when the government decided to establish the law of electronic signature and activate it between its companies, institutes and the enterprises. In October 1997, the Internet Society of Egypt: E-commerce Committee (ISE/E2C) was established to catalyze and build awareness of e-commerce in Egypt. The government wants to raise its efficiency in order to accelerate the Egyptian economic growth.

Egyptian International Trade Point (EITP) has adopted an ambitious plan in a serious bid to make the best use of e-commerce for boosting the country's exports to foreign markets. E-commerce as a medium for foreign trade is also a catalyst for export - implying an increase in Egypt's exports and balance of trade. It may help create many high-paying jobs and new businesses: an Egyptian entrepreneur will have the opportunity to venture and establish a small, medium or even micro-size enterprise with global market access.

¹⁰ <http://ideas.repec.org/a/fip/fedker/y2004iqiip53-71nv.89no.2.html>

To ensure e-commerce success, financial and regulator issues must be tackled. Electronic payment systems must ensure interoperability in a global environment. Standards must be developed and implemented on the national level, but must be compatible with the global level.

Socio-economic impact on Egypt

E-commerce as a medium for foreign trade is also a catalyst for export implying an increase in Egypt's exports and balance of trade. This will subsequently have a positive impact on the national economy. It will aid in curtailing national debt and inflation rates and in increasing the gross national product. Moreover, not only will e-commerce have an indirect effect on the local economy, but it will also enable Egypt to experience a more open economy and increase its comparative advantage worldwide.

Projections for the volume of transactions of e-commerce show that world electronic-based trade has reached \$1 trillion by the beginning of the new century. Such an opportunity holds a lot of promise for the economic development of Egypt, providing it with new opportunities for penetrating international markets. This is especially true for small and medium sized enterprise, which lack the resources that can enable them to promote themselves globally. The advent of the internet and e-commerce has contributed in reducing costs .

E-commerce also carries strong socioeconomic implications for the Egyptian citizen. On an individual level, Egyptian citizens (those having access to the technology) will be able to perform transaction worldwide and trade products across national orders and elevating their own standard of living and “ quality of life”. E – commerce may help create many high-paying jobs new businesses: an Egyptian entrepreneur will have the opportunity to venture and establish a small, medium or even micro-size enterprise with global market access ; an Egyptian software developer can work from home and write software for international customers; and a maker of oriental rugs or artifacts can export to new market from his small business in a remote village. Additionally, many new issues, unique to e-commerce itself, will create working opportunities for professionals in many fields, e.g. in legal , financial, and computer fields.

The Statistics of E-commerce in Egypt between 1996-1999 as noticed there is a rapid increase in the use of internet (table 21).

The government has put in consideration the development of communications infrastructure to go in parallel with its counterparts in the developed countries. (table 22).

Challenges that Face Egypt ¹¹

In spite of the significant growth in the usage of the Internet and the value added services, there are still several challenges that the Internet community are currently facing. These challenges, many of which are common among Arab, African, and developing countries, include:

- Preserving the culture and traditions of the local community, while empowering it to interact effectively with the rest of the world.
- Increasing Internet accessibility for the community at an affordable price.

¹¹ www.idsc.gov.eg.

- Securing sufficient financial resources both from the government and the private sector, in order to sustain the on-going developments.
- The legislative issues are also considered as one of the most important challenges, as the internet service have been commercially deployed while the legal framework and model for the government / private sector partnership have not yet been completely worked out.
- Arabization and providing adequate Arabic information content on the internet in key sectors including education, business, and trade services. This will increase the societal internet penetration drastically.
- Internet security and protecting the individual privacy.
- Providing adequate training and technical assistance to enable users especially professionals, to make best use of the internet technologies in their line of work .

Barriers that Face Egypt in Implementing E-commerce

- Consumer awareness

It is worth comparing the consumer market's response to the provision of GSM Service with their response to the provision of Internet service. Let us observe the following facts: (1) GSM and Internet service require similar premiums (mobile phone and PC respectively, between \$500 and \$1000); (2) Internet access fees are similar to GSM premiums and ongoing fees and may even be less (about \$40-60/month); (3) 200,000 people pay for the GSM service; (4) 100,000 to 150,000 people use the Internet, but only 25,000 to 30,000 pay for the service.

Therefore, affordability is not the major problem with Internet usage. The market does not perceive the added value of Internet service at this point. It is worth mentioning the fact that transfer charges of text over the Internet through the use of e-mail (between continents) are approximately two-hundredths of the transfer costs of the same words spoken on the telephone. E-mail is obviously much faster than "snail mail." In many developing countries, including Egypt, it is a much more reliable means of communication.

- Corporate awareness

On the corporate level, unfortunately, the situation is not any different; a case in the financial sector is used to illustrate this point.

A leading private bank made a tender for an Internet leased line; this was seen as a move on the part of the banking industry to become involved in Internet transport. However, only the bank's management information system department used the leased line connection, which enabled the download of software patches and upgrades that were previously sent on disk by post. The connection terminated within the bank's information technology (IT) department at a physically isolated local area network segment. Accordingly, the bank awarded the tender to the lowest bidder and emphasized no quality requirements and/or precedence. Hence, the bank's perception of the value-added service received from the use of the Internet was fixed on low-cost additions. That was the limit to the potential benefit perceived from the leased line connection!

In general, there have been few attempts from the business sector to embark on e-commerce ventures, the primary reason for which is simply the lack of corporate awareness of the

conceivable business advantage of e-commerce. It may be worth mentioning that this situation is about to change, because some banks are moving toward online banking.

- Size of E-commerce Activity

Companies working in the e-commerce domain are still laying the foundation for e-commerce and venturing on to their very first projects in the field. In mid-1998, it was reported that only 10 sites offer some level of transactional back office and clearance mechanism to provide some form of Internet-enabled acquisition of goods and services.

- Market size: business to consumer

The small market size of 25,000 to 30,000 paying customers is the single largest deterrent for business on the Internet; hence, minimal b-to-c e-commerce is possible. Furthermore, the number of Internet users in Egypt doubles once every 10 to 12 months, which is half of the global rate of increase, and this rate is unfortunately decreasing. In general, the number of Internet users (the potential consumer base) discourages commercial efforts to produce venues for the consumer to buy, sell, or engage in any commercial transactions. Another view is that instead of waiting for the demand (the pull), a solution could be to provide the supply (push) of viable e-commerce sites in the local language -- Arabic -- to remove the language barrier and attract potential consumers (as well as corporate customers) to transact over the Internet.

The market is probably at the "early majority" stage of consumer adoption; therefore, the curve is rising slowly. Through catalyzing awareness, the rate of adoption can be increased.

- E-commerce infrastructure

The nonexistence of an appropriate and secure e-commerce-enabled environment is a disincentive to attempting e-commerce projects but is not a well-grounded justification for avoiding such attempts. Once the demand and potential market arise, these components will automatically be enabled.

- Lack of secure electronic transaction compliance

Until the time this paper was written, there have been no banks or companies that offer secure electronic transaction (SET) compliance to the public. The banks are waiting for the initial adoption of SET from the Central Bank of Egypt, which is maintaining a reserved position on the entire subject of transaction over the Internet. One of the major barriers to establishing SET and a CA is market dynamics -- the lack of a tempting business case study to demonstrate the aforementioned principles

- Teledensity infrastructure

There are more than seven telephone lines for every 100 people in Egypt. This telephone line availability (or lack of it) remains a deterrent for Internet use. It is difficult to compete in the information economy with low teledensity. Only in 1998 did it become legal for a person to own a second telephone line. Also, installation of a new line entails a waiting period of almost 6 years, and the up-front cost of obtaining a new line is high (\$900). Furthermore, telephone service is available in only 548 of 27,000 cities and villages in Egypt and extends to little more than half of the *inhabited* land in Egypt. Investment in the telecommunications infrastructure is at a bare minimum in Egypt with a rate of \$2.5 per person (vs. \$248 per

person in Switzerland). However, through its "MEGA" plan, Telecom Egypt is planning to add 1 million telephone lines every year until the year 2002.

- National strategic telecommunications planning

Until recently, value-added or international services (e.g., long distance, mobile, PDN, international bandwidth, local bandwidth or leased lines, faxes, or pagers) were all declared to be surcharged services, apparently to subsidize the basic local telephone services. The remainder of the subsidy, which is the majority of it, was used to build the Egyptian underground train network. The claim herein was to take from the "haves" to give services to the "have-nots" within the Ministry of Transportation and Communications. Hence, the entire subsidy actually went to the underground train network. Thus, *the surcharge that discouraged the Internet service upgrade was seen as a national benefit.*

This cross-subsidy existed until 1997, after which Telecom Egypt discontinued it and started paying taxes to the government. However, this practice represents a pervasive school of thought that leads to continuous nonsupport of network-enhanced services, which are seen as "rich-man options."

- Financial services and infrastructure

A strong financial service infrastructure is regarded as a means of protecting the national economy against an economic crisis (such as the recent Asian crises).

- Concept of individual credit system

Only recently have national citizen numbers been implemented (resembling social security numbers in the U.S.) by which every Egyptian citizen obtains a "national number" or unique identifier. The national number is placed in a computer database, which represents the first use of a nationwide demographic information repository. The project is in an initial stage, and it will take 4 years until all Egyptian citizens over the age of 16 years (eligible age for receiving the card) have a national number.

- Financial transactions on the Internet

The lack of existing SET compliance mechanisms in the country stems from a culture that limits the application of computer online validation services, which are not currently offered as a banking service to reconcile credit cards. Furthermore, the support from the Central Bank of Egypt for Internet-initiated transactions is nonexistent; this bank has refused to be the designated bank for national settlements for credit cards. Egypt might soon be paying the price for not implementing the necessary infrastructure. There are many cases of local Egyptian companies using credit card validation services located abroad to guarantee financial transactions. Some companies pay 10% on every deal they make; if many other companies follow this example, this 10% charge will grow into a handsome sum of money drained from the national economy!

- Online financial information

Until 1998, basic information on money and the capital market was not available on the Internet. One source of this information is currently emerging. A general lack of effective competition in this area decreased the rate of its development. In general, the capital market is adopting a more liberal policy for the exchange of basic financial information.

- Coordination of Egyptian banks

Egypt has 400 automatic teller machines (ATMs), but most banks have their own proprietary cards that function only on their own respective ATMs. Moreover, in an effort to create a support network among Egyptian banks, one bank installed a local area network linking all credit card member banks in Egypt. This system was to be used to report fraudulent credit cards to the donor bank; however, they were not used at all. It is worth mentioning the general policy of Egyptian Banks, which is that the bank's client is the client of the bank's branch and not of the bank as a whole.

One company has begun its mission of operating a switching facility that links all bank ATMs and provides a clearance house infrastructure for all banks. With respect to the ATM facility, it is not yet operational because none of the banks have adjusted or upgraded their hardware facilities to link to the network. As for the clearinghouse, internal competition within the banking sector, along with the sizing handicap (two of the banks are larger than all others put together), results in a negligible number of cleared checks. In addition, only 10 of 23 banks are connected to this network.

- Social and psychological drawbacks

Commercial relationships are shaped to a considerable extent by social conditions and cultural attitudes. Diffusion of the benefits and opportunities of e-commerce are also limited by the following factors.

- Trust

Although it is subsiding at the moment, the lack of trust in electronic means of payment continues to be a worldwide deterrent to e-commerce. However, Egypt is lagging behind in this issue of trust, which is still a strong deterrent to making payments over the Internet.

- Resistance to change

Resistance to change is one of the most typical drawbacks in any attempts to bring about technological change, and e-commerce is no exception. Decision-makers are used to doing business in a certain way and they do not want to change. "Our system is working, so why change it?" is their attitude, which represents a significant hurdle in itself.

- Territorial behavior

Top-level decision-makers are exerting "territorial behavior," meaning that they want to have control over their business territory. They believe that they would be losing control over the company assets if they were to engage in e-commerce. One manager required all company employees to use one e-mail account to which he held the password, so that he could check all incoming mail. We shall not dwell on the other managerial and organizational issues of many organizations' management systems; but this territorial way of thinking forms a general philosophy to which many executive decision-makers subscribe.

- Generation gap

Many, if not most, CEOs in Egypt do not use e-mail for the simple reason that they were not raised in the information age. IT is not a part of their daily routine. This fact is coupled with their mindset of reluctance to invest in IT and their failure to perceive the added value. However, middle-aged managers who are currently in middle management and will rise to top-level management in the next decade *are* convinced of the benefits of IT and are

technologically adept. Therefore, we can be hopeful that the future decision-makers of the country will engage in IT ventures

- Security

Security is a very important aspect in e-commerce because of the lack of trust in electronic means of payment. That is resulting from the exchanging of information that is used in the buying and selling process which is vital to keep safe, for example credit card numbers, addresses or telephone number.

- Bandwidth cost

The cost of international bandwidth is expensive, although, recently its pricing has been revised and reduced by 50%. Even after this reduction, however, the pricing structure is still very expensive (2.5 times more than the international tariff) and offers no volume discount beyond 2.0 megabits per second. While moreover, the regular internet at 56K is very slow.

- Credit card usage

The number of credit cards that are used in Egypt are extremely low and that can be attributed mainly to the lack of existing culture and awareness, or you might say the hidden wealth of Egypt of the use of credit cards and this brings us back to the lack of consumer awareness issue. In Egypt there are 102 licensed banks and less than 120,000 credit cards.

- Language barrier

82% of Web sites are in English and that is a huge obstacle for Arabic speaking natives who can only write and read Arabic.

- Legislations, policies and business ethics

Despite the general categorical support toward IT, Internet, and future e-commerce implementations at the various policy levels needs to be more harmonious and cooperation in the various public and private sectors. All of these obstacles are caused by the lack of an announced national IT policy. Complicated and unclear business rules form one of the most critical barriers toward e-commerce; one that exists in many developing countries. The government should try to encourage consumers and corporations by developing a clear coordinated set of rules.

- Lack of certificate authority

The nonexistence of a certificate authority (CA) in Egypt serves as an impediment toward the adoption of e-commerce on a national level, and more importantly, an international level. Moreover, the form of this CA -- whether private or government-owned -- has not yet been determined. The creation of a CA in Egypt is crucial, not only because of the importance of the CA's duties, but also because of the need for a trusted, impartial, transparent, and knowledgeable third party (with the proper expertise) to offer expert advice to the Egyptian legal system in related cases. The CA may attempt to align its certificate issuance with compulsory insurance against the dangers of e-commerce. This authority would also work on raising awareness within the Egyptian community, with the aim of developing both the consumer and the institutional bodies related to e-commerce.

The Role of the Egyptian Governments Towards E-commerce

E-commerce lies at the heart of the Government's vision for building a modern, knowledge driven economy in the world. E-commerce has a huge role to play in raising the national productivity and prosperity in the up coming years. It encourages economic growth, breaks down barriers for market entry and allows companies to compete in a global, increasingly sophisticated and well-educated market, in which customers are becoming more demanding. The Government aims to achieve sustained improvements in the productivity growth, so that they would allow their productivity to go faster than its industrial competitors as they close the productivity gap.

The government also aims to promote e-commerce by providing a number of things such as developing broadband services that are cost effective to the consumer¹², while the US Government invested in essential e-commerce infrastructure for military purposes (e.g., digital computing, the Internet) and for civilian purposes (e.g., interstate highways, air transport¹³). On the other hand the Egyptian government is trying to develop public awareness towards e-commerce since lack of public awareness are the constraints on the sector's growth. The Egyptian Government is aggressively working with the private sector and foreign partners, including USAID, to address these hurdles in an effort to stimulate rapid development. Laws to govern e-commerce are in the works. Microsoft has signed an agreement with the government to support the use of licensed software throughout the government¹⁴.

There are a number of challenges governments will face as e-commerce develops. One of these is achieving a balance between their role and that of the private sector, and between regulation and industry self-regulation. The growth of e-commerce is being driven in part by the speed of technical developments and the growth of the Internet.

The growth of the Internet depends on three factors: - The first is the state of development and spread of the telecommunications infrastructure over which the Internet operates. Generally, in countries with well-developed telecommunications infrastructures, the Internet tends to be growing quickly. The second factor is the skill level of the population. Thirdly, but perhaps most importantly, is the demand for applications, such as electronic commerce, that run over the Internet. Such demand can only be met if there is a legal and commercial environment facilitating the development of those applications. It is apparent that e-commerce does not yet enjoy the same conditions in terms of consumer protection, privacy and security.

While consumer e-commerce is growing rapidly from a low base, indications are that the bulk of Internet commerce is business-to-business transactions rather than direct customer-to-business transactions, because there is inevitably a continuation of existing business relationships, supported by established contracts, that have already developed a degree of trust. It is also in business-to-business transactions that the greatest efficiency gains can be made through reduced transaction costs or large transaction volumes. E-commerce is central to the future growth and productivity of the world and is at the heart of the Government's economic vision for building a modern, knowledge-driven economy¹⁵.

¹² <http://www.dti.gov.uk/ministers/archived/Timms271102b.html>

¹³ <http://cais.isworld.org/articles/default.asp?vol=10&art=8>

¹⁴ <http://usembassy.egnet.net/etr.htm>

¹⁵ <http://www.govtech.net/magazine/eCommerce/mar99/roleofgovt/roleofgovt.php>

Government issues in Egypt

1. Policy

Despite the general categorical support toward IT, Internet, and future e-commerce implementations at the various policy levels, there need to be more harmony and cooperation in the various public and private sectors. All of these obstacles are caused by the lack of an announced national IT policy. Such a policy in France has made possible the privatized PTT-France Telecom's Télécommerce Initiative. This is a service provided by the PTT to facilitate and secure selling of products/services on the Internet as well as assisting in the construction of commercial Web sites. This aforementioned effort by France Telecom contrasts very much with the socialist mentality of the Egyptian PTT, which has not yet moved to a commercial way of thinking.

2. Business rules

Complicated and unclear business rules form one of the most critical barriers toward e-commerce, one that exists in many developing countries. Vital components of the e-commerce business cycle (e.g., logistics and customs) are deeply embedded in the government's operations; the information systems for these operations are manual, bureaucratic, and paper-dependent. The government should be encouraged to recognize, accept, and facilitate electronic communications (contracts, notarized documents, etc.). Coherence, transparency, coordination, and avoidance of duplication should be the government's guiding principles in this endeavor.

Egypt's actions occasionally indicate that this thought is pervasive in the minds of its top policymakers, but there is no direct champion of e-commerce to truly liberate this policy and arouse the interest of all sectors of the government and of society. This champion is needed especially because a small move by the government through effective national projects (e.g., government procurement or electronic government services) would lead to tremendous liberation of efforts to develop e-commerce in the country. It is important to point out that the lack of national support (including financial support) for e-commerce will result in damage from *international e-commerce* to national economies, including Egypt.

3. Affordability/cost structure

This section aims to summarize the cost issues related to the Internet and IT via comparison of costs in Egypt to those of developed countries:

Item	Cost
Individual spending on IT	Individual spending on IT in Egypt is \$5/year, while it is \$995/year in Switzerland. Individual income in Egypt is \$1100/year, while it is \$20K/year in Switzerland. Hence, Egyptians spend 0.5% of their individual income on technology, whereas the Swiss spend 5% of their individual income on technology (the Swiss income is 20 times that of the Egyptian).

Hosting Cost & Price/Performance	Egypt = \$60 U.S. = \$25 Taking into consideration the average individual income, this figure is costly for an Egyptian. In addition, the price/performance is very slow. This in itself is an added (time) cost.
Web site Design and Implementation	Cost ranges from \$500 to \$35,000; the minimum cost is still too expensive.
Internet Access	Egypt is \$20/month; U.S. is \$10/month.
Computers	Adjusting for relative wage rates, a computer is approximately 5-10 times more expensive in developing countries than in the U

Electronic Signature Law¹⁶

The Executive Regulations of the Electronic Signature Law shall set out the necessary technical and technological rules. A public authority called the Information Technology Industry Development Authority (ITIDA) shall be established. The authority, which shall enjoy public corporate personality, shall be affiliated to the Minister with policy jurisdiction and will be initially located at the Giza Governorate premises. The authority has many objectives like regulating the activities of e-signature services and other activities in relation to e-transactions and the information technology industry. The Authority shall have the authority required to achieve its goals among which is the issuance and renewal of licenses required for operating e-signature services and other activities of e-transactions and IT industry fields in accordance with the laws and regulations regulating thereof. The authority is also responsible for the receipt of complaints related to e-signature, e-transactions and IT activities; taking necessary actions in this regard. The authority will also ensure that within the scope of civil, commercial and administrative transactions, e-signatures shall have the same determinative effect that signatures have under the provisions of the evidence Law in the civil and commercial articles, if the creation and completion thereof come in compliance with the terms stipulated in this Law and the technical and technological rules identified in the Executive Regulations of this law.

The Electronic Signature Law will definitely help to encourage electronic commerce because it facilitates payment something which will ensure sustainable commercial development.

Conclusion

As e-commerce is rapidly growing in the United States; to the contrary, in Egypt it is completely different. Although e-commerce is considered a significant instrument for development to the Egyptian economy. Trade over the Internet has not been quickly adopted in Egypt because there are a number of barriers that have mitigated e-commerce to properly take off¹⁷.

¹⁶ Reference: <http://www.bakernet.com>

¹⁷ http://www.isoc.org/inet99/proceedings/1g/1g_3.htm#s1

There is a great deference between Egypt and the USA in the services provided for business men. This large gap resulted from the technological and economical development that has flourished in the USA. This developmental gap allows for an increased number of top level services being offered to businessmen and their businesses. Since Egypt is still in the developmental phase, it is not able to ameliorate the American experience.

It is clear that Egypt wants to fit in the move for electronic commerce because it both has the potential and at the same time cannot afford to be left out. The Egyptian government have a launched several initiatives to promote for this new methodology of trade such as the Egypt's E-commerce initiative. This can be vital in outlining important issues, raising awareness, and hopefully proposing solutions and action plans to implement solutions for upcoming problems. In addition, there is a lot to be gained from cooperation and exchange of experiences and expertise across boarders with the rest of the world.

Recommendations :

1. The government must be convinced of using this technology in the business environment in order to achieve its aims (e.g. sustainable development).
2. The government also has a critical role in paving the way for the practical implementation and utilization of the technology.
3. Electronic payment systems must ensure interoperability in a global environment. Standards must be developed and implemented on the national level, but must be compatible with the global level.
4. There are also numerous legal issues to be determined. Privacy, liability intellectual property protection and security are all major questions to be undertaken, breaking new frontiers in “traditional “ legislature.
5. Approaches to enforcement of contracts must be changes; governments should establish a predictable and simple legal environment based on a decentralized contractual model of law rather than one based on top-down regulations.
6. The appropriate liberalized telecommunications and information infrastructure must exist to ensure suitable market access.
7. The Egyptian government have launched several initiatives to promote for this new methodology of trade such as the Egypt's E-commerce Initiative.
8. Private sector investment, promoting and preserving competition, implementing independent flexible regulation and guaranteeing non-discriminatory user-access and open access must be encouraged. Technical standard needs to be determined to guarantee interoperability.
9. Governance should be bottom-up. The government should act as a coordinator between the private and public sector, but giving the private sector “ the upper hand” so to speak. Finally, consumers, user and business awareness of and confidence in e-commerce must be established. Egypt's position on these key areas need to be discussed in details in its e-commerce initiative.
10. Moreover, the government must have a non-regulatory, but supervisory, role when needed e.g. government intervention concerning consumer protection, providing a transparent and predictable legal environment, granting a “ seal of credibility” when needed in establishing “ trust” among e-commerce partners in the cyberspace.
11. To ensure e-commerce success, financial and regulatory issues must be tackled. E-commerce defined simply as electronic delivery of a product or service implies that customs and taxation regulations must be altered.

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APPENDIX

Table (1) : Revenues from E-commerce Applications 1998-2003.

Year	Revenues	Increase
1998	\$21.0m	104%
1999	\$40.5m	+95%
2000	\$169.76	+76%
2003	\$1.3tn	cumulative

Source: international Data corporation.

Table (2) : Global spending on internet security software 1998-2003.

Year	Revenues	Increase
1998	\$3.2bn	+43%
1999	\$4.4bn	+39%
2003	\$8.3bn	cumulative

Source: international data corporation **Note:** Implies a 21% CAG 1998-2003.

Table (3) : Users Worldwide-Online Purchase & Banking Transactions, 1999-2002

Transaction type	1999	2000	2002
Purchased a product or service online	28%	36%	62%
Conducted an online banking transaction	17%	20%	37%

Source : [http:// www.seotechnologies.com/Internet_statistics/ecommerce_e-commerce_statistics.htm](http://www.seotechnologies.com/Internet_statistics/ecommerce_e-commerce_statistics.htm)

Table (4): Worldwide sales of internet appliances, 2000-2005.

Region	Units 2000	Units 2005	CAGR 2000-2005
USA	7.4 million	51.8 million	47.6%
North America	8.2 million	57.4 million	47.6%
W Europe	5.0 million	57.1 million	62.8%
E Europe	1.3 million	34.4 million	92.5%
Asia-pacific	12.1 million	93.5 million	50.5%
Sth/cen America	1.9 million	41.7 million	85.5%
Rest of world	0.55 million	17.8 million	100.5%
Worldwide	29.0 million	302 million	59.8%

Source : [www. Epaynews.com/statistic/e-commerce](http://www.Epaynews.com/statistic/e-commerce).

Table (5) : Share of Internet Advertising by World Region 2000 vs. 2005

Region	2000	2005
North America	85.0%	73.0%
Europe	7.0%	13.0%
Asia Pacific	6.0%	11.0%
Latin America	1.0%	3.0%

Source: www.ask.com

Table (6) : Worldwide Internet Advertising Spending by Region

Region	2000	2001	2002	2003	2004	2005
North America	\$7.042	\$9.562	\$13.779	\$19.282	\$25.208	\$30.744
Europe	\$620	\$1.079	\$1.792	\$2.723	\$4.008	\$5.685
Asia Pacific	\$534	\$911	\$1.494	\$2.309	\$3.346	\$4.518
Latin America	\$106	\$182	\$308	\$499	\$785	\$1.183
Total worldwide	\$8.303	\$11.735	\$17.374	\$24.814	\$33.347	\$42.160

Source: www.ask.com

Table (7) The ratio of websites that permit e-commerce transactions verses those that don't

Item	Count	Percent
No. e-commerce	6.310.401	89
E-commerce enabled	778.815	11

Source : 2004 intervention inc. (www.netventio.com)

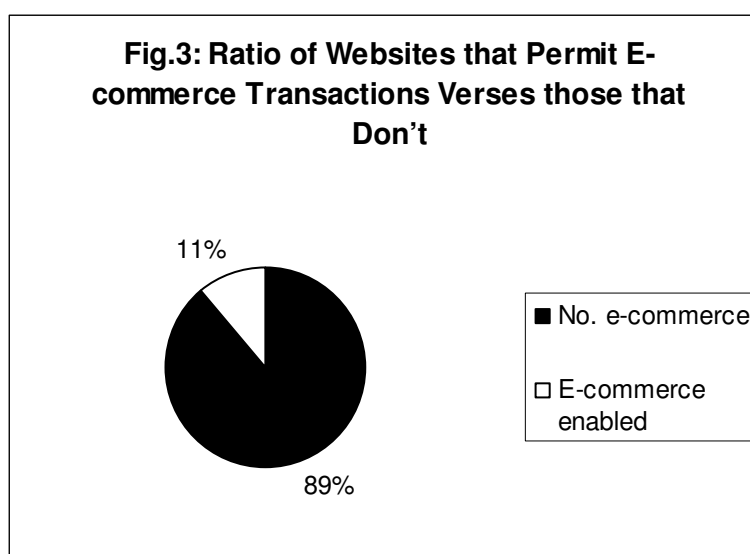


Table (8) : The Corporate E-Commerce Spending Worldwide, 2000-2003.

Year	Total
2000	\$275 billion
2001	\$525 billion
2002	\$951 billion
2004	\$1.7 trillion

Source: www.epaynews.com

Table (9) : Corporate Purchases for E-Commerce in 2002.

Equipment	Percentage
Notebooks (PC's)	81
Security \ virus control	78
Telecom service	63
Internet application servers	59
E-Commerce application	45
Hand held	43
Wireless technology	40

Source: www.epaynews.com

Table (10) The Dollar Value of Transaction on the Internet (In billion US dollars)

Year	Value
2004	\$6.789.8
2003	\$3.979.7
2002	\$2.321.2
2001	\$1.233.6
2000	\$657.0

Source: www.ask.com

Table (11) : E-commerce Expenditure on software in Europe, 1999-2002.

Year	Revenues	Increase
1999	USD645 m	25%
2000	USD 2.8bn	30%

Table (12) : Ranking of Preparedness for E-commerce in Europe .

Country	index	Country	index	Country	index
Netherlands	8.40	Norway	28	Greece	7.03
UK	8.38	Austria	28	Portugal	7.02
Switzerland	8.32	Ireland	23	Czech republic	6.45
Sweden	8.32	Belgium	22	Hungary	6.05
Denmark	8.29	France	16	Poland	5.52
Germany	8.25	Italy	14	Slovakia	5.00
Finland	8.18	Spain	14	Romania	4.00

[http:// www.e commerce-digest.com](http://www.e-commerce-digest.com)

Note: July 2002 Economist Information Unit ranks preparedness for e-commerce in Europe (USA scoring 8.41)

Table(13) : July 2002 Economist Information Unit ranks preparedness for e-commerce

Country	Index
Israel	6.79
South Africa	5.54
Turkey	4.37
Bulgaria	4.25
Sri Lanka	4.05
India	4.02
Romania	4.00
Russia	3.93
Saudia Arabia	3.77
Egypt	3.76
Iran	3.20
Ukrania	3.05
Nigeria	2.97
Pakistan	2.78
Algeria	2.70
Kazakhstan	2.55
Azerbaijan	2.38

Source : <http://ecommerce-digest.com/ecommerce-prospects-other-countries.html>

Table (14) : Internet Penetration in the Arab World.

Rank by % of population	Country	No. of internet users*	Internet users as a % of the population
1	UAE	740.000	29.9
2	Bahrain	120.000	18.71
3	Qatar	98.000	12.81
4	Kuwait	230.000	11.29
5	Lebanon	363.000	10.0
6	Jordan	280.00	5.43
7	Oman	100.000	3.81
8	Tunisia	280.000	3.61
9	Saudi Arabia	610.000	2.68
10	Palestine	93.000	2.56
11	Morocco	360.000	1.17
12	Egypt	680.000	1.05
13	Algeria	190.000	0.6
14	Libya	30.000	0.57
15	Syria	61.000	0.36
16	Yemen	25.000	0.14
17	Sudan	37.0000	0.10
18	Iraq	29.400	0.08

Source: www.lanlane.com

**Table (15) : In the 1996 Number of Telephone Lines
per 1000 in Arab Countries**

Country	No. of Telephone Lines
Algeria	44
Egypt	50
Iraq	33
Jordan	60
Kuwait	232
Syria	82
Mauritania	4
Lebanon	149
Libya	59
Morocco	45
Oman	86
Saudi Arabia	106
Sudan	4
Tunisia	64
United Arab Emirates	302
Yemen	13
Worldwide Average	133
Arab Countries Average	49
Gap	84

Source: World development Indicators,1998

Note: Arab countries need about 22.2 million line to cover the gap

Table (16): Arabian Internet Users (October 1998)

Country	Number (thousand)	Percentage to population
United Arab Emirates	143.0	5.69
Bahrain	30.3	4.86
Kuwait	55.0	3.04
Qatar	19.3	2.77
Lebanon	75.6	2.30
Oman	30.3	1.34
Jordon	38.5	0.84
Saudi Arabia	45.1	0.23
Egypt	128.0	0.21
Tunisia	11.0	0.12
Morocco	26.1	0.09

Yemen	5.5	0.03
Total Arabian Internet users	607.6	0.41
Average Arabian internet users/100 person	50.6	--
Worldwide average / 100 person	120.000	2.09
Gap	2495	1.68

Source : World Development indicators

Table (17) : Value of US Online Sales, 2003 to 2008

Year	Total (USD billion)
2003	\$95.7
2008	\$229.0

Source : [http:// www.seotechnologyies.com/Internet_statistics/ecommerce_e-commerce_statistics.htm](http://www.seotechnologyies.com/Internet_statistics/ecommerce_e-commerce_statistics.htm)

Table (18): E-commerce Functions of Small and Large US Business

Function	Large business	Small business
Website	90%	60%
E-commerce	35%	30%
Online payment	41%	38%
Mobile support	32%	23%
Online revenue	2%	11%

Source:www.epaynew.com

Table (19) Market Size of E-commerce in US and Japan

	B to C		B to B	
	Japan	United states	Japan	United States
1998	650	22.500	86.200	195.000
1999	1.900	42.700	120.000	300.000
2000	4.300	71.100	190.000	500.000
2001	8.700	106.900	290.000	790.000
2002	16.200	153.600	450.000	1.170.000
2003	31.600	213.200	684.000	1.653.000

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Table(20) Internet Subscribes and Users in Egypt and Arab Countries

Country	No. of subscribers	No. of users	Ratio of Users
UAE	160.000	400.000	2.5
KSA	100.000	300.000	3
Bahrain	15.000	37.500	2.5
Libya	1500	7500	5

Sudan	2000	10.000	5
Qatar	18000	45.000	2.5
Oman	20.000	50.000	2.5
Kuwait	40.000	100.000	2.5
Egypt	55.000	440.000	8
Yemen	3000	12000	4
Lebanon	65.000	227.500	3.5
Syria	4000	20.000	5
Jordan	25000	87500	3.5
Morocco	15000	52.500	3.5
Tunisia	22000	110000	5
Total	545.500	1.899.500	3.5 (the average)

Source: It News,DIT.net Site

Table (21) : Statistics of E-commerce in Egypt

Item	96/97	97/98	98/99
Number of information Centers	1224	1388	1495
Number of trainees in computer science in the governorates	84	130.000	200.000
High Tech information companies operating in Egypt	426	600 company	714 company
Number of internet service providers	26	40 company	55 company
Number of internet users	45	10.000	180.000

Table (22) : The Communication Infrastructure

Item	81/82	97/98	98/99
Number of telephone lines (million line)	0.54	5.25	6.2
Number of fax & telex lines (thousand line)	3.5	35.2	36.5
Cities & villages connected to STD traffic (city)	15	775	791