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

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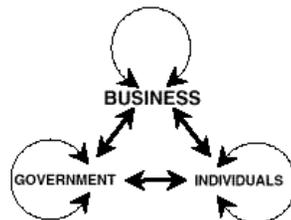
INTRODUCTION

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 onlineⁱ. E-commerce can occur within and between three basic participant groups – business, government, and individuals (see Figure 1).

Figure 1 Some Common E-commerce Market Models ⁱⁱ



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 EDI. This allows more transparency among business involved; therefore business can run more efficiently.

Business to Customer (B2C)

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

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.

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.

ISSUES AFFECTING THE DEVELOPMENT OF E-COMMERCEⁱⁱⁱ

Internet sales and transactions in the retail and services sectors increased significantly from 1999 to 2002. According to the United States Bureau of the Census, retail e-commerce sales increased from \$15 billion in 1999 to \$44 billion in 2002. Key issues include: Taxation, Security, Privacy, Profitability, Content and Participation in new international standards development

Advantages of e-commerce^{iv} :

For Consumers: Reduced Prices; Global Marketplace and 24 Hour Access.

For Businesses: Increased Potential Market Share, Low-Cost Advertising and Low Barriers to Entries.

Disadvantages of E-commerce^v

For the Consumer: Unable to Examine Products Personally and Online Purchasing Security.

For the Business: Hardware and Software, Maintenance of Website, Costs, Website Stickiness and Customer Loyalty and Training and Maintenance.

E-commerce Technical and Operational Factors

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.

Delivery Infrastructure

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

Availability of Payment Mechanisms

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

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.

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.

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.

Challenges

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.
- Securing sufficient financial resources both from the government and the private sector, in order to sustain the on-going developments.

The Problem Facing E-commerce in Developing Countries

Awareness and education

A lack of awareness is a crucial barrier to the implementation of e-commerce in developing countries.

Market size

Business to consumer.

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.

- Promotion and awareness.
- Human resource and skills development.
- Liberalization of telecommunications infrastructure development.
- Regional strategy.
- Financial services.

OVERVIEW PROFILE OF E-COMMERCE IN EGYPT AND THE ARAB REGION

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.

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 ORGANIZATIONS IN EGYPT

E-commerce is one of the most important instruments of the economy. 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.

Table 1 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 2 Number of Telephone Lines per 1000 in Arab Countries 1996

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 lines to cover the gap

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.

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.

STATISTICS OF E- COMMERCE IN USA

It is to be noted that while e-commerce is expected to continue its remarkable growth, it still represents only a small %age 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.

Table 3 Value of US Online Sales, 2003 to 2008

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

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

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

Internet sales and transactions in the retail and services sectors increased significantly from 1999 to 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.

Table 4 Users Worldwide-Online Purchase & Banking Transactions

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)

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. 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.

Table 5 Ranking of Preparedness for E-commerce in Europe (USA scoring 8.41)

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

Source: [http:// www.e-commerce-digest.com](http://www.e-commerce-digest.com) (July 2002 Economist Information Unit)

THE GLOBAL ECONOMY AND E-COMMERCE: AN OVERVIEW

Total Internet purchases in 1999 were estimated at \$130 billion and are projected to reach \$2.5 trillion by 2004. 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.

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.

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 decade^{vi}.

Table 6 Revenues from E-commerce Applications 1998-2003.

Year	Revenues	Increase
1998	USD 21.0m	104%
1999	USD40.5m	+95%
2000	USD 169.76	+76%
2003	USD1.3tn	Cumulative

Source: International Data Corporation.

Table 7 Expenditure on E-commerce software in Europe, 1999-2002

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

Table 8 Global spending on internet security software 1998-2003

Year	Revenues	Increase
1998	USD 3.2bn	+43%
1999	USD4.4bn	+39%
2003	USD 8.3bn	Cumulative

Source: international data corporation

Note: Implies a 21% CAG 1998-2003.

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.

By most estimates 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 worldwide^{vii}.

E-COMMERCE IN EGYPT VERSUS THE UNITED STATES

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 off^{viii}.

Consumer and corporate awareness

The consumer awareness to the usage of the internet and the computer is very limited; for example the number of Internet users in Egypt doubles once every 10 to 12 months, which is half of the global rate of increase. This rate is unfortunately decreasing. In general, the number of Internet users (the potential consumer base) discourages commercial and corporate efforts to produce venues for the consumer to buy, sell, or engage in any commercial transactions.

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 numbers 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 GOVERNMENTS ROLE IN 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 consumer^{ix}, 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 transport^x. On the other hand the Egyptian government is trying to develop public awareness towards e-commerce since lack of public awareness is 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 government^{xi}.

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.

Table 9 The Corporate E-Commerce Spending Worldwide, 2000-2003

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

Source: www.epaynews.com

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 economy^{xii}.

Table 10 Corporate Purchases for E-Commerce in 2002

Equipment	%age
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 11 Worldwide sales of internet appliances, 2000-2005

Region	Units 2000	Units 2005	AGR 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.

RECOMMENDATIONS

- The government has a critical role in paving the way for the practical implementation and utilization of the technology.
- The government must be convinced of using this technology in the business environment in order to achieve its aims (e.g. sustainable development).
- 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.
- The government should act as a coordinator between the private and public sector, and giving the private sector "the upper hand" so as to speak.
- The Egyptian government have launched several initiatives to promote for this new methodology of trade such as the Egypt's E-commerce Initiative.
- Finally, consumer, user and business awareness of and confidence in e-commerce must be established. Egypt's position on these key areas needs to be discussed in details in its e-commerce Initiative.
- Government policies can have a significant positive or negative impact on the growth of the Internet.
- E-government should make it easier for citizens to interact with government and obtain government services.

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NOTES

E-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 on-to-one connection, usually dial-up. EDI is the inter-organizational, computer-to-computer exchange of business documentation in a standard, machine-processable format. EFT was designed to optimize electronic payments with electronically provided remittance information.

ⁱⁱ www.pigseye.kennesaw.edu.

http://home.utm.utoronto.ca/jmt/260web_tanjuakioJoyce/CCT260_WebSite/page5.html.

ⁱⁱⁱ http://encarta.msn.com/encvclonedia_701509010_3/E-commerce.html

^{iv} http://j/home.utrn.utoronto.ca/Njrnt/CC_T_2buV,febSite%io2GfoiderJCCT2_6uWebSite/page3.htm i#wto

^v http://home.utm.utoronto.ca/~jmt%CC_i2tiUWebSite%20folder%CCT2ti0WebSite%page4.html

^{vi} www.Ditchle_news.htm.

^{vii} Source : www.eto.org.uk

^{viii} http://www.isoc.org/inet99/proceedings/1g/1g_3.htm#s1

^{ix} http://www.dti.gov.uk/ministers/archived/Timms271102b.html

^x http://cais.isworld.org/articles/default.asp?vol=10&art=8

^{xi} http://usembassy.egnet.net/etr.htm

^{xii} http://www.govtech.net/magazine/eCommerce/mar99/roleofgovt/roleofgovt.php