E-commerce:
The Jordanian Experience

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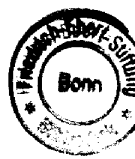

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Foreword

The Information and Communications Technology (ICT) revolution is leading to an essential transformation of international trade. The Internet is connecting distant parts of the world into a global electronic market place. It speeds up and simplifies communications between parties involved in goods, services and financial transactions. Furthermore, the Internet is becoming an important marketing tool, thus making it viable to purchase goods world-wide with little effort and in an effective time and cost saving manner.

For developing countries, this digital revolution offers excellent opportunities for economic growth and development. For instance, e-commerce has impacted favorably on small and medium-sized enterprises (SMEs), boosting their capacity to compete, locating their position, and popularizing their products in the global market place.

The number of people using the Internet around the world is increasing rapidly, the United Nations Conference on Trade and Development (UNCTAD) predicts the number of users to reach 655 million by the end of 2002, or one-tenth of the world's population, compared to 500 million in 2001. The annual E-commerce and Development Report estimates that trade in goods and services over the Internet could reach US $2.3 billion this year, a 50% jump on last year, with the potential of increase up to another 60% to reach US $3.9 billion by the end of 2003. [1]

Jordan has recognized the positive impact the ICT has had on the different economies of the world. Upon accession to the throne, King Abdullah II launched the Reach initiative emphasizing on the importance of IT for the future of the country:

> *The vision of Jordan is to become a regional IT leader and an internationally recognized exporter of IT products and services, exploiting its core human capital*

[1] http://www.unctad.org/

advantages. The key to success is the central role of the private sector, which spearheads the sustained entry of the sector into international markets.[2]

In June 1999 a national strategy for the development of the ICT sector was presented, with the aim to create as many as 30,000 ICT-related jobs, capitalizing on the 2,300 graduates in ICT-related subjects that Jordanian universities and technical colleges produce each year and attracting US $150 million in foreign direct investment by 2004. Hence, it was vital to have a modern and a highly active information technology sector in the Kingdom that would act as a new sustainable base of the economy. Consequently, many projects have been launched by the local and private sectors in the last three years to raise the level of ICT next in place to the mining and tourism sectors in the country.

This study provides an overview of the Jordanian experience in e-commerce and clarifies its status looking at infrastructure, benefits, hindrances and barriers facing the application and use of e-commerce by local institutions since the launching of the national strategy.

The study is meant for decision-makers and practitioners, especially those involved in the e-government project, to assist them in evaluating the application of e-commerce in Jordan and reaping its benefits.

Furthermore, the study reviews the experience of e-commerce in other countries in the region such as the United Arab Emirates, Lebanon and Egypt.

Amman, November 2002

Dr. Said Alloush,
President,
Royal Scientific Society

Dr. Paul Pasch
Friedrich-Ebert-Stiftung
Jordan office

[2] King Abdullah II addressing Jordan's IT leaders on June 30, 1999.

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List of Abbreviations

A	
A2C	Administrative to Business
ACC	Amman Camber of Commerce
ACI	Amman Chamber of Industry
ADSL	Asymmetric Digital Subscriber Line
AMIR	Access to Micro-finance and Improved Implementation of Policy Reform
ASP	Application Service Provider
ATM	Automated Teller Machine
B	
B2A	Business to Administrative
B2B	Business to Business
B2C	Business to Customer
BA	Business Associations
BPWA	Business Professional Women Association
C	
CBJ	Central Bank of Jordan
CHARMS	Cargo Handling and Revenue Management System
CTTISC	Computer Technology, Training and Industrial Studies Center
CVV	Card Validation Value
D	
DEWD	Dubai Electricity and Water Department
DIC	Dubai Internet City
DPC	Department of Post and Custom/Dubai
E	
EBDA	Electronic Business Development Activity
EBI	Emirates Bank International
ECC	Electronic Commerce Center
EIC	E-commerce Information Center
EMCIT	Egyptian Ministry of Communications and Information Technology
EMN	Electronic Mail Network
EMS	Express Mail Services
F	
FES	Friedrich Ebert Stiftung
G	
G2C	Government to Customer
GBWR	Guinness Book of World Records
GDP	Gross Domestic Product
GFR	Global Frame Relay
GPRS	General Packet Radio Services
GSM	Global System Mobile
H	
HCST	Higher Council for Science and Technology
I	
ICDN	Internet Content Delivery Network
ICT	Information and Communications Technology
IDSC	Information and Decision Support Center
INT@J	Information Technology Association of Jordan
IS	Information Systems
ISC	Internet Shopping Card
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
IT	Information Technology
J	
JEDCO	Jordan Export Development and Commercial Centre Corporation
JIF	Jordan Insurance Federation
JKB	Jordan Kuwait Bank
JMTS	Jordan Mobile Telephone Services
JNB	Jordan National Bank
JTC	Jordan Telecommunications Corporation
K	
LAN	Local Area Network

M

MCI	Master Card International
MICT	Ministry of Information and Communications Technology
MIT	Ministry of Industry and Trade
MPT	Ministry of Post and Telecommunications/Lebanon

N

NGO	Non Government Organization
NIC	National Information Center
NIS	National Information System

P

PC	Personal Computer
PKI	Public Key Infrastructure

R

Reach	Regulatory Framework, Estate Infrastructure, Advancement Program, Capital, and Human Resources Development
RITSEC	Regional Information Technology and Software Engineering Center/Egypt
RSS	Royal Scientific Society

S

SME	Small and Medium-sized Enterprise
SMS	Short Message System

T

TESP	Training and Employment Support Project

U

UAE	United Arab Emirates
UFICO	United Financial Investment Co.
UMTS	Universal Mobile Telephony System
USAID	United States Agency for International Development

W

WAN	Wide Area Network
WAP	Wireless Application Protocol
WWW	World Wide Web

Introduction

Information technology revolution is rising above the barriers of time and place, assuring businesses and people new strategies and policies while paving the way towards a more efficient worthwhile future.

Electronic commerce as part of the information technology revolution became more reliable in terms of the world trade. However, there is no universally accepted definition of the term "electronic commerce" or "e-commerce". Thus, it is generally used to cover the *distribution, marketing, sale, or delivery of goods and services by electronic means*[1]. Other definition has been given to e-commerce as *every type of business transaction in which participants electronically prepare, transact business or conduct trade, in goods or services*[2]. Some other definition has been mentioned for e-commerce, as it is *a commercial activity that takes place by digital processes over a network*[3].

Around the globe, e-commerce is the subject of concentrated interest in many sectors: in government, business, service sectors, consumers, and academics. E-commerce has expanded from the closed world of business to business transactions amongst known parties to encompass a complex web of different activities, involving large numbers of individuals, many of whom may never meet each other. It has implications in economic and social life and its development is sharing in a new era of global communication and trade. It has the potential to fundamentally change the way commercial transactions, the business of government, the delivery of services and a host of other

[1] Security of Electronic Commerce: a guide for small and medium-sized exporters, International Trade Center and Jordan Export Development and Commercial Centres Corporation, Amman 2001.

[2] Electronic commerce: Initiative of the Federal Government. Federal Ministry of Economics, Bonn, Jan. 1998.

[3] Business @ the Speed of Thought: Succeeding in the Digital Economy, Bill Gates with Collins Hemingway, Penguin Book, 1999.

interactions are conducted, raising issues at the heart of policies directed at the regulation of traditional practices and procedures. Of greatest impact is the shrinking of the distance between producers and consumers, in an environment where geographical boundaries are no longer as significant as in the paper-based world.

The publication "E-Commerce: The Jordanian Experience" is a study conducted by the Royal Scientific Society with the support of the Friedrich-Ebert-Stiftung reviewing the recent development achieved in the field of information and communication technology.

The publication includes five chapters. The first details the methodology and expresses the importance of such a study. Chapter two explores e-commerce infrastructure in Jordan, looking at the application within various business sectors. Chapter three shows problems and barriers facing establishments dealing with e-commerce. Chapter four sheds light on the experience of e-commerce practice and applications in the United Arab Emirates, Lebanon and Egypt looking at its environment, infrastructure such as telecommunications, on-line security, e-banking, payment gateway, laws, methods of delivery and human resources. Chapter five concludes providing recommendations to develop the ICT sector in Jordan.

Chapter One

Methodology of the Study

1-1 Background

Jordan is witnessing rapid developments in industrial modernization, liberalization of trade and information technology. The successful penetration of the Internet services into Jordanian business offices, manufacturing plants, schools and universities, governmental departments and ministries and households is becoming a reality. Many Jordanian businessmen are becoming more convinced that the Internet is the place to do business. Those who are learning the benefits of the Internet are looking for ways and means in order to develop their business manipulation, upgrade their resources, extent their marketing networks, and accomplish successful local and foreign sales.

Moreover, e-commerce applications afford users with unlimited advantages to venture into international markets and to get active in worldwide.

It is worth mentioning that e-commerce exists in many forms, some of these forms are as followings:

1. Business to Business (B2B), that represents the economic relationship between institutions.
2. Business to Customer (B2C), that represents the relationship between institutions and customers.
3. Business to Administrative (B2A), that represents the relationship between institutions and public departments for official transaction.
4. Administrative to Customer (A2C), that represents the relationship between official departments and individuals.
5. Government to Customers (G2C), that represents the relationship between government and customer.

Having a website is not only a tool to enhance and practicing e-commerce; website can be implemented for marketing, customer service, selling, in addition to some other related services

As for Jordan, both the government and the private sector are interested in benefiting from those facilities by introducing the concepts of e-government and e-commerce. The government of Jordan already started a program called e-government in order to offer such services 24 hours a day, and seven days a week for the whole year around. As most of the people prefer to achieve such a job during the weekends, and that could be done by using e-government.

1-2 Study objectives

The study mainly aims at clarifying the status of e-commerce in terms of infrastructure, benefits, problems and barriers facing the application and use of e-commerce by local institutions. Furthermore, the study also shades the light on the experience of e-commerce in neighboring countries such as United Arab Emirates, Lebanon and Egypt.

1-3 Study importance

Due to the lack of specialized studies conducted in terms of crystallizing the consequences of applying e-commerce in Jordan. This will be of great help for decision-makers; especially those involved in e-government project.

1-4 Methodology

The study has been prepared applying the following two procedures:

First: Information and data have been gathered from local and foreign studies and related sources such as:

1. Ministry of Information and Communications Technology
2. Ministry of Industry and Trade
3. Ministry of Education
4. National Information Center
5. Jordan Export Development and Commercial Centre Corporation
6. Amman Chamber of Industry

7. Central Bank of Jordan
8. Arab Bank
9. Jordan Kuwait Bank
10. Cairo Amman Bank
11. Jordan National Bank
12. Citi Bank
13. Aramex
14. DHL
15. Royal Jordanian Cargo
16. Jordan Telecom
17. MobileCom
18. e-dimension
19. Global One
20. Fastlink
21. Jormall

Second: Field survey

- A combination of field survey and institutional interview with concerned sector officials has been conducted.
- A questionnaire was designed for institutions with website availability. The questionnaire contains questions on the characteristics of the institutions, barriers hindering the application of e-commerce, staff qualifications working on e-commerce, website language, reasons behind website available and expected results, website promotion, payment system implemented and area of business.
- The field survey covered 31 institutions out of 350 with website available, which represent about 9%.
- The Developer 6 and Oracle 8 have been used for the questionnaire analysis.

Chapter Two

E-commerce Infrastructure in Jordan

2-1 Background

Jordan has convenient telecommunication facilities among neighboring countries. It applies the latest technologies in telephone and Internet services. The use of credit card and Internet is intensified. Furthermore, human resources are having satisfactory skills in order to operate e-commerce.

It is worth mentioning that e-commerce in Jordan is convenient. minimal e-commerce transaction is in practice. Some institutions and firms have websites, while actual on-line selling and buying is not that much occurring neither locally nor international. Moreover, some on-line firms, institutions and marketplaces are mostly for advertising and marketing,

The application of e-commerce in Jordan is influenced by number of elements. The first is cultural resistance, which prevents consumers to use the Internet for trade with unseen and unknown parties. Moreover, language is considered as another factor of hindrance as local population relates more to Arabic sites, and that in turn encourage converting the language of foreign sites into Arabic. Another influencing factor is trust, as many consumers have trust insufficiency, and they are scare of using credit cards and the release of personal data. The most important reason for the lack of e-commerce practice is the combination of the lack of awareness about what e-commerce practice is, and what kind of available solutions, in addition to the absence of legal mechanisms to protect transactions and consumers from on-line deceiving.

It is worth mentioning that Jordan is showing anxiousness towards e-commerce and e-government.

However, this chapter will discuss the e-commerce infrastructure in Jordan. It is composed of the followings:

- Jordan Telecom Group, which is composed of four companies: Jordan Telecom, MobileCom, e-dimension and Global One.
- Internet service providers (ISPs)
- Website Development
- Fastlink
- On-line mole (Jormall.com)
- EU funded projects
- National Information Center
- The Reach initiative
- E-banking
- Logistics
- E-government initiative
- Laws and legislation
- Ministry of Education program for human resource development

2-2 Jordan Telecom Group

Jordan Telecom Group is composed of four companies, these companies are playing a vital role in the infrastructure composition of e-commerce in Jordan, and the four companies are as follows:

2-2-1 Jordan Telecom

Since January 1997, when the Telecommunications Corporation was transformed into a company, Jordan Telecom had to face major challenges and pressing tasks in keeping up with the changes, progress and advancement in the world of telecommunications.

Jordan Telecom is considered to be the largest operator and provider of Telecom services as it owns the nationwide network that constitutes the base for the various communication services in Jordan.

Moreover, an agreement was signed on January 23rd 2000, allowing the Jordan Telecommunications Corporation Investment Group (JTC), led by France Telecom, to enter the company with 40% shareholding equity, while the Jordanian government

retained a 60% stake. JTC is owned partly by France Telecom 88% and partly by the Arab Bank Ltd. 12%.

JTC started to draw plans and strategies for developing and upgrading the telecommunications network owned by Jordan Telecom, and it has the main network and the fundamental base for the Telecom services. However, the company gives the priority to fulfil the requirements of the market and customers and aims at becoming a "net company".

Furthermore, the company has been working on a number of new projects, some of which have been launched already. The company is also working at improving all of its already existing Telecom and value added services in order to be in line with market requirements and respond to future expectations.

Specifically, the company aims to provide its services according to the following priorities: Developing and improving the voice telephone network, building the data transmission network, becoming Internet Service Provider (ISP), lowering tariffs and creating an international and focal centre for communications in Jordan.

However, services offered by Jordan Telecom are as follows:

1. Call Free: call free is a service designed for companies who wish to provide their customers with information and services via a reserved telephone line.
2. Meet anywhere in the world: videoconferencing provides digital and visual communication between organizations that are separated by distance.
3. Co-location: co-location appeals largely to companies that have already established a web presence and are more comfortable retaining control of the site's architecture.
4. Integrated Service Digital Network (ISDN): ISDN is the ideal communication medium providing service for home and office.
5. Leased Line: leased line is a permanent connection for the customer's sole usage.
6. Asymmetric Digital Subscriber Line (ADSL): it is a modern technology that converts the existing twisted pair telephone lines into high-speed digital lines.

2-2-2 MobileCom

MobileCom is a Jordanian public mobile telephone network operator, and is the operator of the mobile communications license granted to Jordan Telecom. The company combines local Jordanian capability with operation experience of France Telecom. Its commitment is to introduce new levels of customer service, satisfaction and quality, enabling Jordanians to benefit from the advantages of mobile communication.

The company was first registered on September 21st 1999, with an aim to build a new mobile communications network, and has launched full public service across the Kingdom on September 15th 2000. The infrastructure was built using the most advanced technology available on the market today and is provided by the global leader in Global System Mobile (GSM) networking equipment, Ericsson.

The investment made by MobileCom will have an impact on the creation of an advanced mobile communication infrastructure.

Moreover, MobileCom has been recorded a subscriber growing at an exponential rate, with the number of users reached to 220 thousand by June 2002.

2-2-3 e-dimension

e-dimension is the third corporate subsidiary operating under Jordan Telecom Group (JTG), offers advanced computing solutions through high-tech secure networking. e-dimension partners with corporations through assisting entities and individuals in acquiring proficiency levels necessary to lead their businesses throughout the Internet era.

e-dimension implements security 'policies' through System Practices (SP). At e-dimension, policies and practices are based on ISO/IEC 17799:2000 the International standard code of practice for information security management coupled with ISO/IEC WD 13335, Information Technology—Security Techniques—Guidelines for the Management of IT Security (GMITS). Security and availability go hand-in-hand which is the main reason behind why e-dimension hosts services on High Availability clustered computer systems co-located on the nation's Internet backbone located at "Hashem" (National Internet Gateway

– Jordan Internet Exchange Hub).

e-dimension owes its know-how distinction to its highly motivated, experienced, internationally awarded; professional team specialized in designing e-solutions.

e-dimension strategic alliances are designed to help deliver a customer-centric, total solutions approach to solving problems, exploiting business opportunity, and creating sustainable competitive advantage customers.

e-dimension, has office space, computer equipment and complete infrastructure ready for 40+ employees who are primarily technical supporting delivery of high tech solutions, and composing two major departments; Software Development, and Business Development. The core equipment is located on the Jordanian Internet eXchange (JIX); which provides Internet for all national ISPs. This allows e-dimension to forward information to users on other ISPs within Jordan without having to utilize expensive international bandwidth.

e-dimension also maintains a small data center of High Availability (HA) hybrid clusters of substantial disk space with built in redundancy for both hardware and critical applications.

e-dimension believes that knowledge driven economy requires the ability to provide employees, partners and customers with accurate and timely access to information and applications through suitable content delivery. The success of any business is tantamount to such practices. Regardless of their location, users expect fast access to all types of information and applications. In effect users desire to access information as if it were located on e-dimension local disk drives.

Moreover, The challenge is to deploy such applications via WEB, thereby; optimizing content delivery through proper search, network traffic and limited access delays to local, regional and remote locations. e-dimension's project plan is to develop around and use the latest popular new business applications. which are presently WEB enabled such as e-commerce, Enterprise Resource Planning (ERP), Customer Relationship Management (CRM), e-learning/e-training, on-line video conferencing, corporate portals, Employee Information Portals (EIP), Manufacturing and wireless push/pull technologies through the present infrastructure

base located at Hashem and throughout the region. In brief, e-dimension is capable of providing the followings:

- Web based software development
- Multimedia/ Graphics development
- Wireless Applications development
- Hosting Services
- IT Consultation
- Networking solutions
- Information platform and updating service
- Video encoding & conferencing
- Full Data center activities.

2-2-4 Global One

Global One is fully owned by Jordan Telecom. However, operations were started in March 1996 as the first and largest data Communications Company in Jordan to serve businesses and consumers by providing Internet and X.25 data communications services and solutions. Currently Global One provides the business and consumer markets in Jordan with the most advanced data communications consultation and services. These services include Global Internet, Global X.25, dial-up, leased line, corporate mail services, solutions and Global Frame Relay (GFR).

The company mission is to be the premier provider of global data communications services to businesses and consumers.

The company has served a large number of customers; it has more than 9000 customer base making it the largest data communications service provider in Jordan, served by 58 employees.

2-3 Internet service providers (ISPs)

The number of licensed ISPs in Jordan was 12, only 7 were operational in year 2000. The number increased to become more than 30, but that are operational increased to 11, by year 2001.

The ISPs complain about the excessive cost and the speed of lines. Moreover, the speed of lines is low, which drives some e-commerce companies to link with ISPs worldwide. However, the high telecommunication cost hinders linking to the Internet, as it

becomes infeasible for the ISPs to offer more appropriate services and decrease their fees, as customers are not so many.

Nevertheless, the number of Internet users in Jordan was 124 per 10000 in 1999, which is considered to be much lower than the world figure as it was estimated to be 440 per 10000 during the same year.

The reason behind the low Internet users in Jordan is due to the small volume of telephone subscriptions to the Internet, and the few people who own personal computers, as personal computer per 100 inhabitants amounted to 1.4, comparing to the world figure which was 6.8 in year 1999, and increased to about 4% in 2002.

2-4 Website development

Website development is relatively not expensive comparing to the rest of the world. The cost for a 10-page website and one-year hosting is around 1000 JD, (US $1400).

However, the number of website development companies is not exceeding 19. The sites are basically used for advertising and product displaying, as only a few companies are practicing export sales, and the reasons behind that are: the financial institutions are not handling e-commerce transactions in a proper way, and the absence of suitable legislation required for on-line trading.

2-5 Fastlink

Jordan Mobile Telephone Services (JMTS/Fastlink) founded in 1995, With 714 employees. It was the first operator to introduce mobile phone services into Jordan. In 2000, Fastlink became a subsidiary of Orascom Telecom, the largest GSM network operator in the Middle East and Africa, with more than 19 cellular operators in the region.

Moreover, Fastlink has recorded subscriber growth at an exponential rate, with the number of users reached to 720 thousand by March 2002. Moreover, The growth of the company's markets share from 75% at the end of 2000, to 85% by the end of 2001.

Fastlink was the first to introduce commercial service Wireless Application Protocol (WAP) connectivity in the Middle East and also to enter into mobile banking partnerships with banks in

Jordan. The company is introducing the next generation of high-speed mobile data services. In June 2001, Fastlink claimed a milestone in broader-band communications in Jordan with its announcement of the first end-to-end demonstration of General Packet Radio Service (GPRS) capabilities, and in January 2002, the company launched the first commercial GPRS service in the country.

2-6 On-Line Mall (Jormall.com)

Jormall.com is a Central E-commerce Co. Ltd. it was established in June 2000 with the aim of introducing e-business to the Jordanian economy.

The company started operations by launching www.Jormall.com, the first e-commerce site in Jordan providing both businesses and customers with the opportunity to shop, exchange information and advertise on-line. It also introduces an e-business solution that would operate within the scope of Middle East business practices. Later, the company went on to produce various applications that would serve the requirements of different businesses.

The company comprehensive range of products enables partners to conduct their business operations as usual with high speed.

The result-oriented smart business solutions along with various customer-oriented services can give partners a competitive edge by increasing efficiency, decreasing costs and positioning their business ahead of others.

All products are designed and implemented in compliance with international standards of operations and yet perfectly conform to the Middle East way of regulating businesses.

Methods of payment used by Jormall are as follows:

1. Secured credit cards dealing as international credit cards.
2. Local credit cards, manual process.
3. Bank interface with the net banking of Jordan Kuwait Bank.
4. Cash on delivery within Jordan.

2-7 EU funded projects

2-7-1 E-MED-TEX-NET

E-MED-TEX is an EUMEDIS project funded by the European Union, started on June 1st 2002 with the participation of several countries including Syria, Lebanon, Egypt, France, Tunisia, Algeria, Morocco, Cyprus, Greece, Germany and Jordan.

One of the main objectives of the E-MED-TEX-NET project is the creation of a network of excellence related to textile industry. A tool will also be created to match demand and offer between key player of that network. Thus initiating e-commerce between industries in Europe and the Mediterranean.

2-7-2 HERMES

Project name: An Accompanying Measure for European Commision's IT Nodes actions in the areas of technologies for business processes, electronic commerce, multimedia content and tools and web technologies.

The ultimate objective of this proposal is to boost Euro-Mediterranean collaboration in areas which constitute the intersection of the Information Society Technologies Program (which are systems and services for the citizens, new methods of work and electronic commerce, multimedia content and tools, essential technologies and infrastructure). IT nodes activities (which are technologies for business processes, electronic commerce, multimedia and web technologies, software quality and high performance computing and networking). The immediate aim of the proposal is to accompany the IT nodes activities of the European Commission by developing demonstrators and organizing workshops in the above mentioned well-targeted areas.

Partners:

- Middle East Technical University/Turkey
- National Technical University of Athens/Greece
- Planet Ernst & Young/Greece
- Royal Scientific Society/Jordan
- Palestine Polytechnic University/Palestine
- IT Consult GmbH/Germany

2-7-3 Medressa II

Project name: Expanding Mediterranean IT Markets for Europe.

The RSS has started a new project called Medressa II with the European Union. It has been started since 2001; the project period is three years.

Four European partners will be participating in the project:

- IT Consult GmbH, Germany
- Danish International, France
- Consorzio Pisa Ricerche, Italy
- Foundation for Information Industries, Spain

And six South Mediterranean partners

- RSS, Jordan
- Bayanet, Egypt
- Centre National de L'Informatique, Tunis
- Ecole Mohammedia d'Ingénieurs, Morocco
- Lebanese University, Lebanon
- The Higher Institute of Applied Sciences and Technology, Syria

The main aim of Medressa II is to provide access for European SMEs in the Information Technology domain to emerging markets in the SMCs in the Mediterranean countries.

It will strengthen business co-operation by bringing providers (Europeans) and users / intermediaries SMCs together at four dissemination workshops in each of the six SMCs involved, i.e. 24 workshops in total.

It will provide focused analysis of local markets and their opportunities for the relevant ICT developed in Europe.

The first workshop was conducted in March, it's topic was garment industries in Jordan, and several companies from Europe presented products and software for such industries also the idea of e-commerce was presented through these softwares.

2-7-4 Electronic Business Development Activity (EBDA)

Electronic business development activity is a national initiative, supported by the European Commission and executed by the Electronic Commerce Centre (ECC) at the Amman Chamber of Industry (ACI). In order to address the e-commerce awareness

dissemination and business qualifications program activities into the business community of Jordan.

1- EBDA objectives

- Awareness:
  Carrying out the activities in the field of e-commerce and e-business, in order to introduce information technologies to the business community for the purpose of awareness of the impact of e-commerce on the market strategies and business value framework.
- Training and Business Qualification:
  Support an education path driving to the formation of skilled managers, as well as operation staff to fill strategic gaps in the availability of professionals capable in dealing with e-commerce.
- Motivation and support
  The important of the existing technologies into the business sector in order to improve their competitiveness in the world market.
- Communication and promotion
  Encourage an open dialogue, and activate technology transfer related to e-commerce.

2- Activities and achievements

- E-commerce business training program: training of trainers

  The e-commerce training program: "training of trainers", has been conducted by European consultants in order to achieve the following objectives:

  - Initiate a common and shared awareness of e-commerce concepts.
  - Encourage the e-commerce education, and implement the delivery of e-commerce training by providing the trainers with the knowledge and experience for the purpose of training the business community.
  - Provide guidance on training methods and practice.

- Development of training programs and training teams which handle training in this field in cooperation with all concerned parties.
- The outcome of the two stages of the program which aims at improving the understanding of e-commerce and enhancing the skills of professional participants.
- However, and by the end of the programs, the trainers set up a presentation covering e-commerce overview, e-strategy, e-planning, e-implementation and the e-organizational impact.

• E-commerce awareness campaign and roll-out-training
The objectives of the e-commerce awareness campaign and roll-out-training are:

- Increase the awareness of the Jordanian business community.
- Implementing training programs aimed at developing the capabilities of skilled managers in order to deal with e-commerce issues, management and solutions.
- Support a dialogue by gathering public and private sectors for the purpose of e-commerce related issues.

Nevertheless, the objectives of the e-commerce awareness have been achieved through establishing an E-commerce Information Centre (EIC) in Amman Chamber of Industry (ACI) on the December 10th 2000. The centre is responsible for executing the roll-out-training and providing guidance and support to the private sector with regard to the source and the implementation of information requested. Simulating as a focal point, similar nodes have been established at other Jordanian Chambers and Business Associations (BA) which develop the network of EBDA. Those business associations are:

- Jordan Export Development and Commercial Centre Corporation (JEDCO)
- Information Technology Association of Jordan (INT@J)
- Amman Chamber of Commerce (ACC)
- Jordan Insurance Federation (JIF)
- Business Professional Women Association (BPWA)
- The Association of banks in Jordan
- Jordan Engineering Association

- Jordan Armed Forces

The roll-out-training program was launched on March 25th 2001. A total number of participants reached to about 2000 covering many Jordanian economic sectors have attended over than 60 e-commerce sessions.

Nevertheless, a website has been initiated and launched during May 2001 for the EBDA project and for the e-commerce initiative.

Moreover, a newsletter is being published and distributed by EBDA in order to increase awareness of e-commerce.

3- e-commerce conference
Developing the business community's awareness of e-commerce and e-business, starting and promoting a national dialogue in the private and public sectors, supporting regional co-ordination, tacking practical issues related to e-commerce infrastructure.

4- Project organization
The committee of the project composed of four members in addition to the manager of the project is formed in order to supervise the overall co-ordination.

5- Future plans
The Amman Chamber of Industry activation is to present the awareness and Business Qualification program among related sectors and regions.

The project already started on October 2000 and became fully operational. The development of the project will resume its enhancements to improve the sector requirements. As a result, concentration on expanding the awareness program and training modules will take place. Another activities also will be introduced, as widening the initiative into other Arab countries is also taken into consideration.

2-8 National Information Center

The National Information Centre (NIC) is one of the centres affiliated to the Higher Council for Science and Technology. It was established in 1993. However, the main objectives of the centre are to develop an integrated National Information System (NIS),

identifying different sources of information, and developing data processing of information.

2-8-1 Functions of NIC

- Software Development
- Information Services and the Internet
- Management of National Information System (NIS)
- Coordination
- Standardization
- Training
- Establishing Databases
- Awareness Programs
- Consulting
- Studies and surveys

Moreover, NIC is the main national node for Internet services in Jordan. It is also the top-level domain administrator for the jo domain. In this capacity, it administers the second level domains gov.jo, edu.jo, org.jo, net.jo.

NIC gives full Internet connectivity to the government sector only. Services include dial-up on hourly, monthly or yearly basis, and through leased lines at 14.4 and 128 bandwidth.

2-8-2 National Information System (NIS)

The NIS is a distributed information system at the national level linking information generating centers in the public and private sectors, and homogeneous information generating centers operate together under one sub-network, the sub-networks are linked together by way of the focal point where information is accessed, retrieved and exchanged.

Moreover, various information centers in the private and public sectors is encouraged to join the NIS by using the standards set forth by the NIC for the processing and exchange of information.

2-8-3 Domain name

The National Information Centre (NIC) is the local registry for the top level domain name: .jo in Jordan. The second level domain names available under .jo include:

1. .com - for commercial organizations
2. .org - for non-commercial organizations
3. .net -for networks and Internet Service Providers with a valid license
4. .edu - for educational institutions
5. .gov -for government organizations
6. .mil -for military organizations
7. .myname.jo is open to organizations who prefer to register directly under .jo

2-8-4 Cost of domain name

- The registration fee is 50 JD charged for the first year
- Transfer fee cost is 25 JD
- Renewal fee cost is 25 JD

2-9 The Reach[1] initiative

The Reach initiative presents a national strategy for Jordan to develop a vibrant, export-oriented Information Technology (IT) services sector. The strategy lays out the main drives in order to support the country's essential IT sector and maximize its capability to compete in local and foreign markets. It takes a critical look at Jordan's strengths and weaknesses vis-a-vis other relevant competitors. Most importantly, it outlines a clear action plan, specifying actions to be implemented by the private sector, the government, and by other stakeholders in order to ensure a favorable place for Jordan in the knowledge-based economy of the future.

The strategy responds to a request to the IT industry leaders by His Majesty King Abdullah II for a concrete proposal aimed at strengthening Jordan's IT sector. In response, a core group of members of the Jordan computer society (int@j) devised the Reach initiative, a comprehensive framework that encloses actions in terms of:

- Regulatory framework
- Estate infrastructure
- Advancement programs

[1] Regulatory framework, estate infrastructure, advancement program, capital, and human resources development.

- Capital
- Human resource development

In order to clarify this plan for development of the IT industry, the int@j received technical support from the Access to Micro-finance and Improved Implementation of Policy Reform (AMIR) project of the United States Agency for International Development (USAID). The strategy and action plan was developed through an intensive consultation and research process with Jordanian IT industry leaders and international and domestic consultants.

Moreover, The strategy focuses on the software and IT services sector, which comprises one of the most dynamic and fastest-growing parts of the IT industry. Global sales of software and IT services has grown at double-digit rates for the past decade. For Jordan, this focus makes sense due to several reasons:

1. Low start-up capital requirements.
2. Jordan's favorable location and position in the regional market.
3. Human-resource intensity, software and IT services require skilled human capital.
4. Not affected by distance or transportation constraints.

Benefits of IT sector

- Increased employment of professionals
- Exports foreign exchange generation
- Foreign direct investment
- Government revenues
- Empowered population
- Improved public services
- Better education
- Greater efficiency of government
- Creation of knowledge-base economy
- Enhanced economic competitiveness

Less dependent on traditional markets, these in factors suggest that pursuing accelerated software and IT services development is not so much a choice, as it is a necessity. The strategy shall have significant spillover benefits and multiplier effects.

Nevertheless, the people who made the Reach initiative possible are:

- United States Agency for International Development
- Access to Micro-finance and Improved Implementation of Policy Reform
- Information Technology Association of Japan
- Electronic Commerce Center

2-10 E-banking

The financial sector in Jordan has witnessed media blitzes announcing electronic banking. Banks that have implemented e-banking are showing up of being modernized; some of those that have not are drastically trying to catch up.

The financial sector in Jordan is composed of the Central Bank of Jordan (CBJ), 23 commercial and/or investment banks, 27 insurance companies, 8 special credit institutions, the Social Security Corporation, a number of provident funds, and foreign exchange bureaus. It is considered as one of the better financial sectors in the region and generates in total close to 5% of the GDP. One of the weakest points in the financial sector is, with the exception of mortgage lending, the lack of long-term lending and the absence of secured loans[2].

It is worth mentioning that the percentage of Jordanian households who own personal computer 9.8%, Internet access 2.6%, 660,000 regular telephone lines, around a million mobile telephony subscribers, 30 licensed Internet service providers, more than 120,000 Internet users and close to 115 Internet cafes in the year 2001. However, Jordan is in the Guinness Book of World Records as the highest per capita in Internet cafes, and the number of Internet cafes located in the city of Irbed, is ranked number one in the world, with regard to so many Internet cafes located in a small region. It worth mentioning that the number of Internet users in the world will reach one billion in year 2005.

Moreover, some of the commercial banks in Jordan are offering e-banking services. A sample of banks that has been randomly chosen shows the services offered, besides, how much these services are related to what is called e-commerce. The followings are the banks that have been chosen:

[2] Jordan Times, e-banking in Jordan, Yousef Mansur, Monday, August 6th 2001.

2-10-1 Arab Bank

Electronic services offered by Arab Bank are as follows:

1. Internet banking

   Arab Bank is the first bank to launch Internet banking service. This service has been started in Jordan in May 2000. Since then, the bank added this service in UAE, Egypt, Qatar, Palestine and Cyprus.

2. Internet Shopping Card (ISC)

The benefits of using the Internet shopping card are as follows:

- It provides convenient and easy access to on-line shopping, with small limits.
- It is issued with a separate limit from the Visa card.
- It is limit starts from US $50 up to US $500, or the equivalent in local currency.
- The fees are the equivalent of US $15.
- A monthly card statement is issued for the ISC transactions.
- It can be used at any website that displays the Visa logo.
- Clients who are not a Visa card customer, still able to request this card from the bank.
- It is a plastic card carrying only the cardholder's name, card number, Card Validation Value (CVV), and the expiry date.
- The bank recommends using this card on safe and secure websites.
- It can be used for telephone or mail purchases.
- The countries, which offer the service, are Jordan, UAE, Egypt, Bahrain, Lebanon, Qatar, Palestine, Yemen and Cyprus.

3. Mobile bank

   - WAP banking
     Customers can use WAP mobile phone and access their accounts.

   - SMS banking
     Customers can use a mobile and access their accounts.

2-10-2 Jordan Kuwait Bank (JKB)

Jordan Kuwait Bank offers electronic banking services such as:

1. Phone bank service, which provides access to customers' accounts.
2. On-line stock trading
   The bank offers this service in collaboration with its affiliate United Financial Investment Co. (UFICO). The service allows JKB customers to trade in Amman Bourse through UFICO's website and settle the value of shares traded through JKB's Internet banking service (NetBanker) directly from their accounts with the bank
3. Net banker:
   For performing banking transactions.
4. Mobile Banking
   This service allows the customers to perform banking transactions by using a mobile.
5. Automated Teller Machines (ATM)
   The bank provides ATM services through 18 branches.
6. Cyber branch
   The bank opened its first Cyber branch on the first of May 2001 in Sweifiyyah area. It is a comprehensive electronic bank providing banking services directly to the clients on a 24 hours basis.
7. Money transfer
   Money transfer service from JKB allows customers to transfer and receive money.
8. Pre-paid mobile cards
   Customers can buy the mobile prepaid cards electronically.
9. Banking via SMS
   It enables the customers to receive information on their transactions through their mobile telephones.

2-10-3 Cairo Amman Bank

The following services are available by Cairo Amman Bank:

1. ATM card:
   ATM card entitles the holder to the following 24-hour services:
   - Cash withdrawal
   - Balance inquiry
   - Deposit
   - Statement request
   - Mini statement request
2. Visa cards
   The bank offers three types of Visa cards:
   - International and local usage
   - The gold and the classic cards
   - Local usage only
3. American Express
   - Worldwide acceptance: Over 36 million establishments in 175 countries including 23,000 establishments in the Middle East
   - Financial flexibility: No pre-set spending limit.
4. Safeway card
   For 4 JD, the Safeway card provides a continuous source of financing since it is a revolving credit card issued exclusively by the bank enabling to shop at Safeway stores in Jordan without paying for your purchase in cash.
5. Master card cash advance
   This service allows clients who have a Master card to withdraw cash from Jordan and Palestine.

2-10-4 Jordan National Bank (JNB)

The services offered by JNB are as follows:

- E-com card
  The E-com card is a pre-paid electronic card, which allows you to buy any product of the World Wide Web, the phone or mail order. This new product at JNB can help you minimize the risk of using your credit card on the Internet since the card has a

fixed limit 25 JD. After you have used your card's limit you can re-charge it within the card's validity without the need for re-issuing a new card.

- Revolving Master card credit card
  The local or international Master card credit card service grants the customer the opportunity to make monthly payments on customer purchases on the card by 5-10% from the outstanding withdrawn amounts either in JD or US $. A grace period of 45 days is also granted.
- The Master card charge card
  The local or international Master card charge card enables customers to pay the total registered withdrawn amounts on the card at the end of every month without calculating any interest, since the amounts are being fully paid.

  Moreover, the Master card charge card and the Revolving credit card are accepted at more than 21 million shops, commercial institutions, and 500 thousand ATM machines in over 220 countries around the world.
- Maestro debit card
  The card-holder can purchase goods and benefit from services at more than 10 million shops and commercial institutions in more than 120 countries around the world with the ability to withdraw cash from more than 500 thousand ATM machines on the Cirrus network. However, the customer can pay the purchasing amount and the withdrawn amount through his credit account balance and no debit interest or fees will be added.
- The Master key ATM card
  All current account and savings account customers are eligible to receive an ATM card in order to facilitate a cash withdrawal, balance inquiry, a brief account statement, requiring an account statement, requiring a check book, cash and non cash deposit, and the transfer from one account to another.
- The Master card business card
  The bank offers the service of issuing the Master card business card to big business men in companies. The company would be obliged to pay for all withdrawals accumulated on the issued card for those employees.

- The American Express card
  The American Express card is a charge card, not a credit card and is billed in US dollar.

  Moreover, the JNB offers other banking services such:

- Private banking
  The bank services are a complete frame of privacy, secrecy and efficiency.
- The call free hotline
  The customer can call the bank free of charge. The bank staff will answer all inquiries.
- JNB WAP phone services
  Current account and savings account customers are eligible for using this service to facilitate balance inquiry, obtaining a simplified account statement, demanding a balance statement, demanding a checkbook.
- Merchant Agreement for accepting Master card
  The bank is officially authorized from Master Card International (MCI) to contract with local companies to accept Master card in Jordan.

2-10-5 Citi Bank

Services offered by Citi Bank are as follows:

1. ATM card
   The customer can use it to get cash at over 500,000 ATMs worldwide, to see account balances, pay bills, and transfer funds, for buying goods and services.
2. ATM debt card
   The customer can use it to shop at over 21 million Master card locations worldwide.
3. Auto save
   The bank can transfer money from checking or savings to the customer day-to-day savings.
4. Checks-as cash
   The customer check deposit may be available for use immediately.

5. Citipro financial needs analysis
   The bank can help customer by offering solutions on how to save, invest, and manage debt.
6. Citi trade auto invest
   It allows customer to invest a fixed amount each month in participating mutual funds.
7. Direct deposit
   If the customer signs up for direct deposit and his payroll, government, pension or dividend funds will be automatically deposited into his account.
8. On-line bank statement
   The customer can get on-line bank statement on time.
9. On-line bill payment
   The bank offers two services: safety check and checking plus.
10. Safe web on-line fraud protection
    All Citi Bank accounts are password-protected and secured by state-of-the-art encryption.
11. Wireless alert
    The customer can use Citi Bank's free wireless alerts to receive account information on his text-enabled digital cell phone, at any e-mail address.

2-11 Logistics

2-11-1 Aramex

Aramex is a provider of express package delivery, freight forwarding, logistics and other transportation services. The Aramex global network spans more than 250 countries and is managed by high technology and tracking systems.

Moreover, it provides a comprehensive suite of e-commerce solutions to buyers and sellers. These solutions include complete "e-logistics" services that provide third party logistics, storage, and shipping. They also include express courier, freight forwarding and distribution and delivery services for everything from components and spare parts to finished products.

I. Partnership with Commerce One
The first business to business e-commerce portal established in the Middle East, placed Aramex at the forefront of the region's e-business market

However, Commerce One is the leader in global e-commerce solutions for business. Commerce One creates access to worldwide markets, allowing customers to buy from anyone, anytime, anywhere in the world. The Commerce One Global-trading web is the world largest business to business trading community.

II. Other Services:

1. Web surfer card: The Aramex web surfer card gives the right to purchase on the Internet up to the customer credit limit. The card annual fee is US $19 along with the amount to be credited in the card is minimum US $100. Issuing the card takes 72 hours.
2. Aramex at home: it is a free on-line delivery service. It delivers food, flowers, videos and medication.
3. Shop the world on-line: the possibility of shopping from the world catalogues.
4. Shop and ship service: the shop and ship service offers the customer an official postal address in the USA, in order to have his Internet orders shipped to. The customer can use this mailbox to receive US mail. Aramex will then ship the contents of his mailbox to him.

2-11-2 DHL

DHL worldwide express is the global market leader of the international air express industry. It offers express deliveries, in addition to e-commerce logistics solutions. Moreover, its network links over 120,000 destinations in 228 countries and territories, and employs 71,000 people. Moreover, DHL has led the way with investments in information technology that makes shipping and tracking documents and packages quickly and efficiently.

Services:

Customers can track any shipment sent through the DHL network at any time from collection to delivery by using the followings:

1. DHL e-mail tracking:
Tracking any DHL shipment by using the customer e-mail system, as sending e-mail with up to 10 distinct airwaybill numbers and the customer will receive a reply within minutes, advising him of the latest status of each and every shipment.
2. DHL SMS tracking:
Track the progress of single shipments using the text messaging SMS service on customer GSM mobile phone. A response will be returned with the latest status of the shipment.
3. DHL WAP tracking:
Tracking the customer shipments through any mobile phone network with a WAP-enabled mobile phone.

2-11-3 Royal Jordanian Cargo

Royal Jordanian Cargo terminal in Amman along with it is fully automated Cargo Handling and Revenue Management System (CHARMS), guarantee storage, handling and delivery and connections to any point in the World.

An extensive route network serving 47 destinations in Europe, the Middle East and North Africa, the Far East, Indian Sub-Continent and North America along with more than 35 years of experience in international airfreight, enhance these modern systems, well-equipped freight handling and storage facilities. Royal Jordanian handles more than 70,000 tons a year. A testament to Jordan's expanding external trade and our own extensive scheduled routing options. Charter, courier and mail services are also provided.

However, a growing number of other international airlines operating through Jordan are satisfied clients of Royal Jordanian ground handling services.

Royal Jordanian freighter fleet comprises two Boeing 707s and is currently slated for modernization.

2-11-4 Mail and Post

The postal system in Jordan is understood to be slow and unreliable. Using this service with e-commerce would negatively impact the latter. Moreover, the address location system in Jordan still not produced in an efficient and practical way, such modification, or even new system of marking the address location is urgently required in order to help e-commerce application.

Some services offered by the mail and post are as follows:

Postal money order and postal savings bank services

Express Mail Services (EMS), facsimile and official mail services

2-12 E-government initiative

A main function of the Ministry of Information and Communications Technology is aiding the modernization of government being undertaken through its "Jordan e-government initiative". In this program, a national priority has recently completed a road map and a blueprint identifying the program's main building blocks, and prioritizing them for the next five years. Issues being addressed include program management, common infrastructure, and change management. Implementation is a next step. Jordan is considering with a strategic consultant to manage the process.

Fast track e-government projects are already being implemented, with the first service, including online business registration and applying for communications licenses slated for completion the end of year 2001.

2-13 Laws and legislation

In spite of the entire infrastructure available in Jordan that could possibly serve e-commerce, there are no new laws and legislation required governing e-commerce. However, the current laws and legislation are not so much helping in governing the requirements of e-commerce application. New laws and legislation extremely needed to be set forth in order to put e-commerce in practice. Moreover, the Central Bank is showing an interest of drafting a law in order to organize payment and regulate e-commerce. It is worth mentioning that The Ministry of Information and Communications Technology has drafted an Electronic Transactions Law.

2-14 Ministry of Education program for human resource development

The Ministry of Education is starting its plan in order to install 20 thousand computers in schools over the next two years, introduce computer learning throughout the country, and link young students to the Internet. Lending at preferential terms will also be provided to teachers and professors in Jordan for the purchase of around 5 thousand additional computers for their personal use. Nevertheless, computer skills and English language are a top priority and being taught in schools from grade one. Moreover, all graduating high school seniors and university students are now required to attend computer literacy training, and a national exam that includes a computer literacy component. Furthermore, all collage students are required to learn one computer language.

A US $34 million loan from the World Bank in addition to US $30 million in matching funds from the Jordan government are being used to sponsor a build-out of Jordan university and community collage computer Local Area Network (LAN) and Wide Area Network (WAN), and provide students pursuing high education with skills in information technology. The Ministry of Labor has also embarked on its plan to make use of World Bank funds to reimburse local IT companies for costs they incur training previously unemployed Jordanians in IT related work. The Training and Employment Support Project (TESP), which funds training up to US $1.4 thousand per employee, aims to create one thousand new IT jobs over the coming year, and expand that target over subsequent years.

Chapter Three

E-commerce Application in Jordan

3-1 Background

E-commerce application in Jordan could be considered as in the beginning, and what implemented is rather unsophisticated. However, there have been some individual initiatives in conducting transactions over the Internet, but these trials have been made in the lack of the infrastructure necessary for the development of e-commerce. In order for Jordan to avoid the risk of being on the margin, migration its business into the Internet could be necessary in order to avoid such risk. E-commerce application at this early stage has a positive impact in order to allow Jordan to intensify its sharing in the world market.

E-commerce experience in Jordan could be considered as random, humble and dependant on the private initiatives as it has been showing more success. Jordan doesn't yet have an extensive approach for the adjustment and administration of e-commerce. However, such a national strategy, which could be set forth by the decision-makers, could be translated into a program by combining both the public and the private sectors in order to describe and recognize the barriers and the qualifying factors of e-commerce enlargement in Jordan.

It is worth mentioning that e-commerce applications in Jordan are minimum and incorporate mostly of transactions undertaken between a few Jordanian institutions with non-Jordanian partners. Most of these applications take place over websites that are hosted outside Jordan, in countries where Internet services and telecommunications facilities are more developed. The transactions are also joined with methods of payment that go through foreign banks that offer payment gateway usually located outside Jordan.

Nevertheless, a combination of field survey and institutional interview with concerned institutions officials have been conducted. Moreover, a questionnaire has been designed for institutions with website availability. The questionnaire contains questions on the characteristics of the institutions, barriers hindering the application of e-commerce, website language, reasons behind website available and expected results, website promotion, payment system implemented and area of business. Moreover, the field survey covered 31 institutions out of 350 institutions with website available, which represent about 9%.

This chapter will shed the lights on the out come of the field survey, and that in turn will give a clear illustration about e-commerce application in Jordan. It worth mentioning that in spite of the availability of e-commerce infrastructure in Jordan, which is considered to be too much help to e-commerce application, there have been some barriers that are hindering the application of e-commerce. Moreover, the comments that have been set forth by the e-commerce applicants will help in formulating the recommendation of this study.

3-2 Technical infrastructure

3-2-1 Jordan Telecom Group

Jordan Telecom Group is composed of four companies, these companies are playing an essential role in the infrastructure combination of e-commerce in Jordan, and the four companies are as follows:

- Jordan Telecom
  Jordan Telecom is given due consideration to be the largest operator and provider of Telecom services as it owns the nationwide network that develops the base for the miscellaneous communication services in Jordan.

  However, services offered by Jordan Telecom such as call free, meet anywhere in the world, co-location, Integrated Services Digital Network, leased line and Asymmetric Digital Subscriber Line.

- MobileCom
  MobileCom was first registered on September 21st 1999, with an aim to build a new mobile communications network, and has launched full public service across the country on September 15th 2000.
  Moreover, MobileCom has been recorded a subscriber growth at an exponential rate, with the number of users reached to 220 thousand by June 2002.

- e-dimension
  e-dimension is offering advanced networking tools and distinctive e-solutions. It is specialized in designing and providing advanced e-technologies. e-dimension's main goal aims at transforming Jordan to e-Jordan.

- Global One
  Global One has been established in order to serve businesses and consumers by providing Internet and X.25 data communications services and solutions.

  The company has served a large number of customers; it has more than 9 thousand customers' base making it the largest data communications service provider in Jordan, served by 58 employees.

3-2-2 Internet service providers (ISPs)

The number of licensed ISPs in Jordan is 30, only 11 are operational by year 2001.

The ISPs complain about the excessive cost and the speed of lines. Moreover, the speed of lines is low, which drives some e-commerce companies to link with ISPs worldwide.

Moreover, the number of Internet users in Jordan was 124 per 10000 in 1999, which is considered to be much lower than the world figure as it was estimated to be 440 per 10000 during the same year.

3-2-3 Website development

Website development is considered to be not expensive comparing to the rest of the world. The cost for a 10-page website and one-year hosting is around 1000 JD, (US $1400).

However, the number of website development companies is not exceeding 19. The sites are basically used for advertising and

product displaying, as only a few companies are practicing export sales.

However, the field survey shows that about half of the institutions responded that the reason to build website is just to have a website. And about 17% responded that the reason refers to the idea of a person in the institution, while 14% because competitors have websites, as shown in table (3-1). It worth mentioning that more than two-thirds of the institutions built their websites because of the first two reasons, the idea of a person and just to have websites, which could not be considered as competitive reasons, and that in turn reflects how awareness is important for institutions.

Table (3-1): Reasons to build a website

Reason	Number of institutions	%
Just to have a website	14	49
The idea of a person in the institution	6	17
Because competitors have website	5	14
Others	11	31
Total	**36***	**100**

Source: Royal Scientific Society, field survey, 2002.

- Some institutions may have chosen more than one reason.

Moreover, the language is considered as one of the problems hindering the expansion in Internet use in Jordan. While the use in English is relatively common in Jordan, the real penetration into the on-line market lies through predominance of Arabic websites. The number of websites is about 350. The field survey shows that about 84% of websites are in English language, and 13% are in Arabic and English languages, while only 3% are in Arabic language, as shown in table (3-2).

However, language will remain a barrier to the use of the Internet for the majority of Jordanians and especially people who only read and write Arabic.

It is worth mentioning that increasing and improving local content, in both Arabic and English languages, would draw international clients to local websites and create an on-line demand for Jordanian products and services.

Table (3-2): Website language

Language	Number of institutions	%
Arabic	1	3
English	26	84
Arabic & English	4	13
Total	**31**	**100**

Source: Royal Scientific Society, field survey, 2002.

3-3 Website promotion

Website promotion is considered to be as one of the important tool for marketing the institution. However the field survey showed that about 40% of the interviewed institutions do not promote their websites, while 26% use brochures and business cards as methods of website promotion, and only 11% are using advertising banner on line. As shown in table (3-3). However, the method of website promotion is one of the important procedures that have to be taken into consideration in order to make the institutions more competitive.

Table (3-3): Methods of website promotion

Method	Number of institutions	%
No website promotion	14	40
Advertising banner on-line	4	11
Brochures and business cards	9	26
Others	8	23
Total	**35***	**100**

Source: Royal Scientific Society, field survey, 2002.

* Some institutions are applying more than one method.

3-4 Person in charge of website

The person in charge of website depends on the institution management system. The field survey showed that the person in charge of the website of about 45% of the interviewed institutions is the marketing manager and 10% is the sales manager, while 45% assign some other person to be in charge of the website as shown in table (3-4).

Table (3-4): Person in charge of website

Person in charge	Number of institutions	%
Marketing manager	14	45
Sales manager	3	10
Other	14	45
Total	31	100

Source: Royal Scientific Society, field survey, 2002.

3-5 Human resources

Skilled workforce is important for e-commerce application and progress, and that in turn requires an educational infrastructure prepared towards producing a new skilled and learned workforce in order to suit the venture of e-commerce.

The literacy rate in Jordan is about 89%, and is considered too high with comparison to neighboring countries. Moreover, about 17% of workforce in Jordan have higher education certificates and about 19 thousand are holders of post-graduate degrees. The educated and trained workforce gave Jordan an advantage of being one of the major suppliers of skilled and trained workforces among neighboring countries.

There are 20 universities in Jordan offering degrees in different subject related to information technology, and that help in producing a highly qualified labor in the computer field. Nevertheless, there are some intermediate colleges and vocational institutions are also graduating people holding degrees related to IT.

It is worth mentioning that the low wages and the large supply of IT graduate could be considered as an advantage to Jordan. But low wages work to the disadvantage when professionals take jobs in other countries where the wages are higher and the demand is large.

3-6 Obstacles areas facing e-commerce application

E-commerce application in Jordan is facing so many obstacles, the lack of coordination between the public and the private sectors in order to form and advance e-commerce market in Jordan. Other obstacles such as absence of payment solutions in addition to the small international credit cards. However, awareness is still

hindering the understanding of e-commerce concept, besides the absence of trust about on-line payment and security, in addition to the lack of legal protection against deceiving. Moreover, insufficient infrastructure such as computer and Internet literacy, Internet services, law Internet links and expensive telephone rates.

Other obstacles such as lack of legislation concern electronic indication in addition to the insufficient legal manners of e-commerce application in Jordan. Nevertheless, logistics facilities in Jordan are still resisting e-commerce application.

Table (3-5) describes the major obstacles that faces interviewed institutions. It is evident from the results that the determinant factors that obstruct the application of e-commerce and rank first are culture, trust and lack of knowledge, (14% for each of total response). Then risk, which ranks the second, represents 12% of total response. Some other barriers such as executive awareness and lack of key infrastructure rank third and represent 10% for each of total responses. Moreover, security and ability to receive payments represent 8% for each to total responses.

It is worth mentioning that one of the Important and backbone of e-government initiative is payment gateway and that in turn will solve the problem of ability to receive payment or as it is called "payment gateway".

Table (3-5): Obstacles areas facing e-commerce applications

Obstacles	Number of institutions	%
Security	4	8
Culture	7	14
Trust	7	14
Risk	6	12
Not sure of benefits	3	6
Ability to receive payments	4	8
Organization	2	4
Lack of knowledge	7	14
Executive awareness	5	10
Lack of public key infrastructure	5	10
Total	50*	100

Source: Royal Scientific Society, field survey, 2002.

- Some institutions may have chosen more than one reason as the survey covered 31 institutions.

3-7 E-banking

The financial sector in Jordan is composed of the Central Bank of Jordan (CBJ), 23 commercial and/or investment banks, 8 special credit institutions, 27 insurance companies, the Social Security Corporation, a number of provident funds, and foreign exchange bureaus. It is considered as one of the improved financial sectors among neighboring countries and generates in total close to 5% of the GDP. One of the fragile points in the financial sector is the lack of long-term lending and the absence of secured loans[1].

The Central Bank of Jordan in 1994 began with automatic check clearing, automatic teller machines (ATMs) and phone banking. However the CBJ has plans to introduce electronic check clearing, and that in turn requires first a law modification.

Nevertheless, there has been an experience of firms exporting products through the Internet. One Arabic sweets enterprise and another, which sells Dead Sea products, have exported through the Internet. The transaction has been handled by through using foreign ISP lines and foreign banks. However, there is Jormall that has been constructed on the Internet, with a number of subscribing. Jormall receive payments through secured credit cards dealings for international credit cards, local credit cards, manual process, bank interface with the net banking of Jordan Kuwait Bank, and cash on delivery within Jordan.

The field survey showed that more than a half of the interviewed institutions do not use the Internet for sale, and 19% receive payment on delivery, while the percentages of using credit card/website and credit card/telephone are 11% and 5% respectively, as shown in table (3-6).

It is worth mentioning that the lack of electronic payment and the small coverage of credit holding are hindering the application development of e-commerce in Jordan.

[1] Jordan Times, e-banking in Jordan, Yousef Mansur, Monday, August 6th 2001.

Table (3-6): Methods of payment

Methods of payment	Number of institutions	%
Internet is not used for sale	21	57
Payment on delivery	7	19
Credit card / website	4	11
Credit card / telephone	2	5
Others	3	8
Total	37*	100

Source: Royal Scientific Society, field survey, 2002.
* Some institutions may have chosen more than one method of payment.

3-8 Logistics

Royal Jordanian Cargo, Aramex, DHL, and Mail and Post are the four important logistics parties in Jordan. The roles of these logistics are as follows:

1. Royal Jordanian Cargo terminal in Amman along with it is fully automated Cargo Handling and Revenue Management System (CHARMS), guarantee storage, handling and delivery and connections to any point in the World. Moreover, the Royal Jordanian freighter fleet comprises two Boeing 707s and is currently slated for modernization.
2. Aramex, however, is a provider of express package delivery, freight forwarding, logistics and other transportation services. The Aramex global network spans more than 250 countries and is managed by high technology and tracking systems.
3. DHL worldwide express is the global market leader of the international air express industry. It offers express deliveries, in addition to e-commerce logistics solutions. Moreover, its network links over 120,000 destinations in 228 countries and territories, and employs 71,000 people.
4. Mail and Post system in Jordan is understood to be slow and unreliable. Using this service with e-commerce would negatively impact the latter. Moreover, the address location system in Jordan still not produced in an efficient and practical way, such modification, or even new system of marking the address location is urgently required in order to help e-commerce application.

3-9 Laws and legislation

In spite of the entire infrastructure available in Jordan that could possibly serve e-commerce, there are no new laws and legislation required governing e-commerce. However, the current laws and legislation are not so much helping in governing the requirements of e-commerce application. New laws and legislation extremely needed to be set forth in order to put e-commerce in practice. Moreover, the Central Bank is showing an interest in drafting a law in order to organize payment and regulate e-commerce. The Ministry of Information and Communications Technology has drafted an Electronic Transactions Law.

3-10 Institution area of business

It is worth mentioning that more than half of the institutions covered by the field survey belong to service sector, while less than half belong to industrial sector, and about 3% belong to agricultural sector, as shown in table (3-7). Moreover, the institutions in service and industrial sectors are more concerned with e-commerce application.

Table (3-7): Institutions area of business

Area of business	Number of institutions	%
Agricultural	1	3
Industrial	14	45
Services	16	52
Total	31	100

Source: Royal Scientific Society, field survey, 2002.

3-11 Realization of return

The field survey that has been conducted showed that the realization of return of interviewed institutions varies with respect to realization. About 68% realized less than expected, and about 30% realized as expected, while about 3% realized more than expected. As shown in table (3-8).

Table (3-8): Realization of return

Realization	Number of institutions	%
Realization *as* expected	9	29
Realization *less* than expected	21	68
Realization *more* than expected	1	3
Total	31	100

Source: Royal Scientific Society, field survey, 2002.

Chapter Four

Experience of E-commerce in Neighboring Countries

4-1 Background

E-commerce is unavoidable, representing 2% of business worldwide. E- commerce is currently acting around the world, and is projected to represent US $1.3 trillion of business by the end of year 2002.

A strong internationalization of markets, the globalization of corporate strategies, and the increasing mobility of capital and know-how characterize the world economy. The fundamental action behind these developments is the processing of graphic and audiovisual data on worldwide information network.

E-commerce has broad implications for international trade and business. With the assurance of a cash-less society, more facilities and closer communication, borderless marketing and trade and greater transparency in the business environment, the opportunities are extensive. Therefore, there are great prospects for e-commerce, although the issues of security, awareness and on-line financial transactions are still being addressed. However, the experience of e-commerce applications in neighboring countries clarifies the status contrast of e-commerce application in Jordan.

This chapter shades the light on the experience of e-commerce applications in United Arab Emirates, Lebanon and Egypt in terms of environment and infrastructure such as telecommunications, on-line security, e-banking and payments gateway, laws, methods of delivery and human resources.

4-2 E-commerce in United Arab Emirates

4-2-1 Background

United Arab Emirates has the best telecommunication facilities among neighboring countries. It applies the latest technologies in telephone and Internet services. The use of credit card and Internet is intensified and payments gateway and on-line security solutions are available. Furthermore, human resources are having reasonable skills in order to operate e-commerce.

In view of the fact that the e-commerce in United Arab Emirates is convenient, minimal e-commerce transaction is happening. Some firms and institutions have websites, while real on-line selling and buying is not that much occurring neither locally nor international. Moreover, some on-line stores and marketplaces that are mostly for advertising and marketing, it is another way of doing business.

The performance of e-commerce in United Arab Emirates is affected by number of factors. One factor is cultural resistance, which hinders consumers to use the Internet for trade with hidden parties. Moreover, language is considered as another factor of hindrance as local population relates more to Arabic sites, and that in turn encourage converting the language of foreign sites into Arabic. Another influencing factor is trust, as many consumers have lack of trust, and they are afraid of using credit cards and the draining of personal information. The most important reason for the lack of e-commerce practice is the combination of the lack of awareness about what e-commerce practice is, and what solutions are available, in addition to the absence of legal mechanisms to protect transactions and consumers from on-line deceiving.

What is needed on a national level is to manage and regulate e-commerce in the country, in order to give more awareness and to draft laws and regulations to govern e-commerce transaction.

It is worth mentioning that Dubai shows eagerness towards e-commerce and e-government. The government has launched three important initiatives:

1. Dubai Internet City
   Dubai Internet City (DIC) is the first complete information technology and telecommunications centre in the world that has been built inside a free trade zone.

DIC offers up-to-date, ready-to-operate, entirely serviced office space catering to the specific needs of today's new economy companies. These offices provide both wired and wireless networks. It allows 100% foreign ownership of companies.

However, sales, company earnings and private income are exempt from any form of taxation. Companies can also take land on a renewable lease of up to 50 years and build their own offices. Sun Microsystems provided the server platforms, cabling, and other related active components.

Moreover, Siemens was the project integrator. DIC is the biggest IT-build in the Middle East, and has the largest generation Internet protocol telephony system in the world .

Sets of intellectual property and cyber regulations have been implemented to protect the integrity of e-business. A dedicated government agency has been created to ensure enforcement of these regulations.

DIC has issued licenses to a host of global information technology companies. Microsoft, Oracle and Hewlett-Packard have already identified their long-term objectives. By establishing these roadmaps early, forward thinking businesses are working with the industry to assist and secure the regular integration of future technologies.

2. E-government
   E-government initiative aims at connecting all government offices with each other, as well as with citizens, through the Internet, in order to facilitate government transaction. Citizen can be able to pay whatever is due without having to go to the offices, and that in turn encourage people to use the Internet and e-commerce. Some government institutions have already transferred their services to the Internet; they are offering on-line services to citizens. Traffic fine can be paid via the Internet as entering the Dubai police website. The Dubai Department of Ports and Customs (DPC) offers the facilities of on-line transaction processing up to clearing of goods. Dubai Electricity and Water Department (DEWD) offers on-line bill reading and it will provide payments facilities over the net.

3. On-line Mall (tejari.com)
   Tejari.com is an open, horizontal e-business community that allows companies to buy and sell goods and services using all purchasing methods. With a browser and Internet connection, it permits companies to capture savings by enhancing strategic inception for all business needs. Extending beyond e-commerce, it also allows companies to extend their market reach, access a global supply base, instantaneously share information, and collaborate effectively across the supply chain. It is powered by Oracle, who has the size, technology and scalability in order to provide a safe and reliable environment for conducting business over the Internet.

   Nevertheless, the company announced recently that the trade transaction during the first quarter of year 2002 was as much as that in year 2001, the amount of transaction amounted to US $100 million. Moreover, the members' number increased to reach 900 companies, and more than 2800 commercial transactions have been achieved during the last year. However, the company has been established for two years.

4-2-2 Infrastructure

1. Telecommunications
   Telecommunications system in United Arab Emirates is considered as one of the best among neighboring countries. The only provider of telecommunications is "Etisalat" which is largely controlled by the government. Etisalat network consists of satellite, earth and coastal stations, local lines covering length and beneath United Arab Emirates, submarine cable systems, cable ships, fiber optic cables and international connecting. This infrastructure is capable of creating an environment for e-commerce.

   The numbers of main lines and mobile subscribers per 100 inhabitants are the higher among neighboring countries. The number of main telephone lines for 1998 was 38.9 per 100 inhabitants, the number of mobile subscribers is about 20.96 per 100 inhabitants, and telephone calls are also provided at reasonable prices.

   Nevertheless, telephone services are quite high standard and are offered at reasonable prices. It provides data services of

   which: Electronic Mail Network (EMN); Integrated Services Digital Network (ISDN); and Asynchronous Transfer Mode (ATM), in addition to the Asymmetric Digital Subscriber Line (ADSL).

2. Internet services
   Etisalat is the only Internet service provider, as it has been introduced 1995. The number of users has reached 400 thousand, which makes the Internet connectivity per 100 inhabitants comparable with the first ten countries in the world. Etisalat also provides a number of services of which Internet access, leased lines and web hosting services.

3. On-line security
   Etisalat has established "Comtrust" department in order to provide a comprehensive e-commerce solution. It provides technology that helps build public trust and confidence in e-commerce. The e-commerce solutions provided by Comtrust offered efficient and cost-effective way of conducting business to government, businesses to consumers, and that in turn help businesses to reach foreign markets.

   It is worth mentioning that Comtrust provides secure e-commerce services utilizing digital signature, public key technologies and public key technologies based on Public Key Infrastructure (PKI). Comtrust also provides a range of hosting services that are intended to address the requirement of small and medium-sized enterprises (SMEs) as well as corporate organizations.

4. E-banking
   The Emirates Bank International (EBI), which is 80% government owned, is the only bank in United Arab Emirates that provides comprehensive e-banking by providing payment gateway. Thus, there are some other commercial banks such as the National Bank of Dubai, the National Bank of Abu Dhabi, Al Mashrek Bank and the Union National Bank have been declared e-banking as a secured Internet banking, but still don't offer commerce payment gateway. They just offer normal commercial banks procedures such as ATM transaction, transfer of money and checking accounts.

5. Laws and legislation
In spite of the entire infrastructure available to serve e-commerce, there are no new laws and legislation that are needed in order to govern e-commerce. However, the current laws are not helping in governing the requirements of e-commerce. New laws and regulations need to be set forth in order to put e-commerce in practice. Moreover, the Central Bank is having a plan of drafting a law in order to organize payment and regulate e-commerce. The Ministry of Industry and Trade (MIT) also shows interest of drafting a law.

6. Logistics
Logistics facilities in United Arab Emirates could be ranked as a high level. There are 6 airports, 11 ports, 8 free zones and 8 post offices. Moreover, the delivery of goods and services are achieved by advanced cargo and custom services where customs and cargo procedures are carried on electrically, and this in turn meet the requirements of e-commerce delivery of goods and services.

However, the Department of Post and Customs in Dubai (DPC) has changed from a paper-based institution to a computer based. "E-Mirsal" is a web-based application that has been introduced at the DPC, and built on the application called "Mirsal" that laid the foundation for electronic interaction of the procedures of Dubai customs and cargo community.

"E-Mirsal" links DPC with air, sea and land cargo agents, handling authorities and banking system for data interchanging and electronic payment. It also provides processing of bill of entry, delivery orders, and an electronic payment gateway.

7. Human Resources
The government of Dubai has plans to build an Internet university that offers courses in e-commerce, multimedia operations and some other related courses in order to build up future skills. And that in turn will make information technology professionals available in order to meet the demand. Moreover, some other universities and vocational training schools will add e-commerce courses to their curriculum programs, and that will device training courses and seminars on e-commerce transaction and solutions. However, the

information technology technicians and professional in United Arab Emirates are mostly from India, Lebanon and Egypt.

4-2-3 Role of public and private sectors

1. Government
In the United Arab Emirates, there is an absence of a comprehensive e- commerce strategy, there are some initiative related to e-commerce. The Ministry of Finance and Industry has plans in order to extend electronic services such as government to customer, and the Ministry of Labor and Social Affairs is planning to issue work permits through the Internet. Moreover, the United Arab Emirates has to address some important obstacles such as the lack of awareness at the firm and inhabitants level. Lack of database in the ministries, which are pre-requisite for connecting the different ministries with each other, the insufficiency of the existing laws, and the lack of trust in transaction happening over the Internet.

2. Trade promotion organizations
Trade promotion organizations can play a vital role in promoting e-commerce. They can guide small and medium-sized enterprises to do their business transaction through the Internet. Moreover, the trade promotion organizations can offer information, advocate awareness and presentations for e-commerce convenience.

4-3 E-commerce in Lebanon

4-3-1 Background

E-commerce in Lebanon is still in the beginning even though some steps have been taken place in order to promote a new way of doing business. Some private firms have established on-line shops, malls and auctions. However, e-commerce lack the confidence of customers, they are still not sure about confidence and security of on-line trading, in addition, there are no consumer protection laws in Lebanon, and computer illiteracy and lack of e-commerce awareness are hindering the use of internet and e-commerce development.
The Lebanon market is relatively small in size, and that in turn limit the size of Internet users, in addition, not so many people are

aware of benefits and importance of e-commerce, which in turn hinders the migration of business to e-commerce.

Moreover, e-commerce in Lebanon is not contributing much to the economy. But there are some exceptions. Such as those companies which are still carrying business the traditional way and very aware of accepting any change in the implemented system. That shows up as a result of cultural and sociological influences, a general lack of awareness and the absence of governmental programs to promote the benefits of e-commerce.

Nevertheless, e-commerce application is hindered by some barriers such as the lack of an efficient and adequate infrastructure, a scarcity of venture capital and funding, and the absence of laws and regulations to create an attractive environment for e-commerce in the country. However, and as a result of a high qualified workforce and the diverse skills and entrepreneur-ship of the Lebanese, e-business start-ups in Lebanon can be regarded as pioneers holding much promise for the future.

4-3-2 Infrastructure

1. Accessibility and fees
   The companies began to access cable connection to the Internet during the first quarter of year 2000. The government of Lebanon quickly banned it, on the grounds that those companies didn't have appropriate licenses, as the Ministry of Post and Telecommunications (MPT) doesn't have any regulations for Internet access, and the problem became with cable networks and not with the internet connection. As a result, the MPT finally introduced ISDN, where the network has been replaced elsewhere by a new technology.

   The telecommunication cost in Lebanon is considered to be relatively high. Some Internet users, especially businesses, pay US $500 a month for telephone use in order to connect to the Internet. The cost of a leased line amount to more than US $1000 a month. This depends on the requested bandwidth. So the high fee cost is considered another problem as it could be ranked after the accessibility.

2. Regulations
   The government, except the mobile phone sector, owns telecommunications sector. What make the application of e-commerce developing is that the government prohibiting the cable connection providers and the MPT's refusal to license them. However, increasing the competitiveness of the market, and reduces prices, which could lead to better services providence to customers, could be achieved by privatization of the telecommunications industry in Lebanon. And whenever competitiveness is revealed in the market, and open licensing for telecommunication operators is introduced, investment will increase in the industry and its infrastructure. This result in high quality services, better bandwidth and more affordable connections, and that in turn will benefit individual and business.

3. Internet service providers
   The cost of Internet service providers (ISPs) subscription in Lebanon is relatively high. Some ISPs charge up to three times as much as one would pay in the United States for similar services, and still don't afford the same services in terms of functionality or bandwidth.

   The local ISPs networks don't have a direct local interconnection. For a user connected to one ISP to access a website hosted on another ISP network, one has to go through the US or Europe in order to connect in Lebanon. Moreover, some ISPs don't have duplication on their network and that in turn makes the local networks inappropriate for hazardous applications, like on-line banking.

4-3-3 Development of software

Most of the web design companies are small; they are expected to grow as they undertake large-scale web projects among neighboring countries. Moreover the companies are considered to be the leaders of web development in the Middle East and they are considered to be the most professionals in producing the applications of software in the region.

4-3-4 Human resources

As a result of economic situation, many skilled professionals in information technology are emigrating from Lebanon to Europe and US. The average annual salary for a computer-programming engineer in Lebanon is about US $24 thousand comparing to US $70 thousand in United States. In order to keep professionals from migrating, institutions and companies are recommended to increase wages up to a competitive manner.

Moreover, the government has introduced computer literacy courses in its new school curriculum. Schools lack the computer hardware needed to give the courses. Thus, too much effort is currently moving forward in order to supply public schools with 10 computers per each.

It has been suggested that the government implement a national plan in order to decrease the digital divide between the "know" and "know-not" segments of the population. Furthermore, the government schools establish training centers in order to educate government employees an information technology and encourage NGOs and other private organizations.

4-3-5 Banking

Commercial and investment banks in Lebanon have to create an effective on-line system, in addition to streamline the procedures of letter of credit and money transfer. Furthermore, the banks have to deploy secure electronic payments processing in order to offer dependable services without obstacles.

Some banks are offering services in order to ease and guarantee e-commerce application. Such procedures are as follows:

- Buyers transfer payments to the bank, then the bank will inform the seller of receiving the money.
- The merchandise will be shipped and the seller notifies the bank with a proof of delivery.
- The bank releases payments to the seller upon receiving proof of delivery.

4-4 E-commerce in Egypt

4-4-1 Background

E-commerce is an intermediate for foreign trade and a substance for export. It would have an indirect effect on the Egyptian economy, while also enabling Egypt in order to experience a more open economy and increase its competitiveness internationally.

E-commerce is having tremendous socio-economic implications for the Egyptian people. Egyptian can perform international transactions, trading in products across national borders, while raising the people standard of living, and can create more jobs.

Nevertheless, the followings will shade the light on the experience of e-commerce applications in Egypt in terms of environment and infrastructure such as telecommunications, financial services, e-government, legal issues, social conditions and cultural attitudes, and human resources.

4-4-2 Telecommunications

1. Telecom Egypt:
   Telecom Egypt was established in 1998, it is considered to be the biggest company, not only in Egypt, but also among neighboring countries, in terms of number of fixed telephone lines in operation. The company has about 5.1 million subscribers, and the number of telephone lines is about 7 per 100 inhabitants. It is considered to be ahead of other North African countries.

   In spite of the growing rate of the number of main telephone lines over the last five years, this has not been adequate to keep ahead of demand. However, the waiting list has around 1.2 million inhabitants during the period (1990-1999). The goal of the company is to increase growth to about one million lines per year in the early years of this century. Moreover, Telecom Egypt has established a marketing department, in order to sell its services in a progressively more competitive market, in addition to establishment of another department for new services. It is actually pursuing joint ventures with other companies in the field, such as data communications (with EGYNet) and Internet service provision (with GegaNet), through a franchise model.

2. Orascom Telecom
   Orascom Telecom is classified as a second telecom company in Egypt. It owns part of MobiNil, the leading mobile operator in Egypt. The company has stakes in 18 GSM licenses. Orascom is considered to be the biggest player in the ISP market.

3. MobiNil
   MobiNil is considered to be the leading mobile operator in Egypt. The number of subscribers reached to one million by the end of year 2000, comparing to only 83,500 subscribers at the time of establishment. Nevertheless, Misrfone is ranked the second mobile operator in Egypt and operates under the brand name of ClickGSM. It started operations by the end of year 1998. The number of subscribers reached to 332 thousand within the first year of operation, and by the first quarter of year 2000, the number jumped to 600 thousand subscribers.

4-4-3 Internet

The first use of Internet in Egypt started by the Egyptian Universities Network in 1993. The degree of government support and awareness as an outcome of the government's Information and Decision Support Centre (IDSC) makes the implication of Internet notable. Moreover, the government gave permission to IDSC and the Regional Information Technology and Software Engineering Centre (RITSEC) in order to submit free Internet accounts to government agencies, Non Government Organizations (NGOs) and private institutions, as part of a long-term government-funded campaign. However, the expected outcome of the initiative was to promote awareness of the Internet and assist the number of users in such sectors as tourism, trade, manufacturing, social services and health care. Nevertheless, there are about 60 ISPs in Egypt.

4-4-4 National bandwidth provider

There are three national bandwidth providers in Egypt

1. Regional Information Technology and Software Engineering Center
2. Egyptian University Network
3. Nile-On-Line

4-4-5 Role of public and private sectors

1. Promotion and awareness
   Promotion and awareness are considered to be one of the most critical barriers to the growth of e-commerce in Egypt, along with the rest of neighboring countries. The small market size of 35 to 40 thousand paying customers in Egypt is as indicator of lack of e-commerce awareness. This is considered to be the largest single obstacle for business; hence little business to customers e-commerce is viable. Moreover, the number of Internet users in Egypt doubles once every year, which is considered to be half the global rate. Unfortunately, this rate of increase is becoming less. Generally, the number of Internet users is depressing business from creating on-line venues for marketing their products or undertaking any other commercial transactions. One of the encouraging solutions consisting of viable e-commerce sites in Arabic and that in turn can simply attract more potential customers in order to transact over the Internet. Furthermore, both sectors, the public and the private, and the NGOs can carry the burden of building e-commerce awareness.

2. Human resources
   The number of people who are working in information technology in Egypt is estimated to be around five thousand, who produce around US $45 million in software.

   In order to provide an adequate supply of professionals in information technology. The Egyptian Ministry of Communications and Information Technology (EMCIT), has included in its projected five-year plan, an ambitious program in order to graduate about five thousand Information and Communications Technology (ICT) professionals each year, in order to provide an adequate supply for local market. However, even though the national universities have their own ICT programs, there is a need for the integration of ICT skills in all universities' curricula, along with an equal need to introduce courses in computer literacy and Internet in schools. Furthermore, in order to develop an enabling environment for the growth and success of on-line trading, skills in the legal, financial, logistics, taxation, customs and business management domains of e-commerce need to be intensified.

3. Telecommunications and Internet
The environment of telecommunications and Internet environment in Egypt has developed enormously in recent years. The fiber optic technology and automatic and digital exchanges improved the quality of service.

The number of Internet users in Egypt reached to 250 thousand, which represents about 0.26% of Egypt's population of over 66 million.

4. Financial services
   - Credit cards: the Egyptian market is still in the initial stage of offering credit card services to end-customers. There are more than a hundred licensed banks in Egypt, and the number of credit cards' holders is only about quarter a million. The low number resulted from the lack of cultural awareness and acceptance of the use of credit cards.
   - Internet financial transaction: the Central Bank of Egypt does not support Internet transactions and has not accepted to be the designated bank for national settlements of credit cards.
   - Financing: banks are reluctant to invest in start-up companies. They cannot be considered as potential sources of funds for small business ventures.

5. Websites
The number of Egyptian commercial website is less than two thousand, most of them are in English language, even though the English language is still hindering the use of the Internet by most of the Egyptians who only read and write Arabic language.

6. E-government
The inefficiency of the public sector in Egypt is not encouraging people dealing with the government. Government departments are organized in a way that the delivery of services requires frequent collaboration between employees across departments. Furthermore, the Egyptian government is aware that its own government strategy can have a powerful effect on business in general.

7. Legal issue
The current Egyptian law can deal with e-commerce application and the resolution of disputes that may arise through electronic transactions.

8. Social and culture
Such social conditions and cultural attitudes affect the commercial relationship, and hindering the benefits and opportunities of e-commerce. Some of the social and cultural factors are trust, hindrance to change and community behavior.

Chapter Five

Conclusions and Recommendations

This chapter is composed of two parts. The first part highlights the main conclusions of the study, and the second part provides some general and specific recommendations.

5-1 Conclusions

5-1-1 E-commerce infrastructure in Jordan

1. Jordan has convenient telecommunication facilities among neighboring countries. It applies the latest technologies in telephone and Internet services.
2. There are more than 1200 domain names, about 700 emails and more than 350 websites.
3. Some institutions and firms have websites, mostly for advertising and marketing, actual on-line selling and buying is not that much occurring neither locally nor international.
4. Practicing e-commerce in Jordan is influenced by cultural resistance, language, trust, lack of awareness, and absence of legal mechanisms in order to protect transactions and consumers from on-line deceiving.
5. Jordan Telecom Group is the backbone of telecommunication system in Jordan. It is composed of four companies: Jordan Telecom, MobileCom, e-dimension and Global One.
6. Jordan Telecom is the largest operator and provider of telecom services, and Internet service providers (ISPs).
7. MobileCom and Fastlink are the only two Jordanian public mobile telephone companies. The number of users exceeded one million by June 2002.
8. e-dimension offers advanced computing solutions through high-tech secure networking. e-dimension partners with

corporations through assisting entities and individuals in acquiring proficiency levels necessary to lead their businesses throughout the Internet era.

9. Global One serves businesses and consumers by providing Internet and X.25 data communications services and solutions.

10. The number of licensed ISPs in Jordan was 12, only 7 were operational in year 2000. The number increased to become more than 30, but that are operational increased to 11, by second quarter of year 2002.

11. The speed of lines drives some e-commerce companies to link with ISPs worldwide, and the high telecommunication cost hinders linking to the Internet.

12. The number of Internet users in Jordan was 124 per 10000 in 1999, which is considered to be much lower than the world figure as it was estimated to be 440 per 10000 during the same year.

13. Low Internet users in Jordan is due to the small volume of telephone subscriptions to the Internet, and the few people who own personal computers, as personal computer per 100 inhabitants amounted to 1.4, comparing to the world figure which was 6.8 in year 1999, and increased to about 4% in year 2002.

14. The cost for a 10-page website and one-year hosting is around 1000 JD, (US $1400).

15. Jormall.com is providing both businesses and customers with the opportunity to shop, exchange information and advertise on-line.

16. Electronic Business Development Activity (EBDA) is a national initiative, supported by the European Commission and executed by the Electronic Commerce Centre (ECC) at the Amman Chamber of Industry (ACI). In order to address the e-commerce awareness dissemination and business qualifications program activities into the business community of Jordan.

17. RSS in participating in several EU projects that promote using of e-commerce in the various fields specially E-MED-TEX-NET, Medressa and Hermes project.

18. The National Information Centre (NIC) was established in order to develop a national information system. It is the main national node for Internet services, and the top-level domain administrator for the jo domain. It administers the second level domains gov.jo, edu.jo, org.jo, net.jo. It gives full Internet connectivity to the government sector only. It is also a distributed information system at the national level linking information-generating centers in the public and private sectors.

19. The Reach initiative presents a national strategy for Jordan to develop a vibrant, export-oriented information technology services sector.

20. The financial sector in Jordan has witnessed media blitzes announcing electronic banking. Banks that have implemented e-banking are showing up of being modernized; some of those that have not are drastically trying to catch up.

21. The financial sector in Jordan is composed of the Central Bank of Jordan (CBJ), 23 commercial and/or investment banks, 27 insurance companies, 8 special credit institutions, the Social Security Corporation, a number of provident funds, and foreign exchange bureaus.

22. The percentage of Jordanian households who own personal computer 9.8%, Internet access 2.6%, 660,000 regular telephone lines, around a million mobile telephony subscribers, 30 licensed Internet service providers, more than 120,000 Internet users and close to 115 Internet cafes in year 2001.

23. Jordan is in the Guinness Book of World Records (GBWR) as the highest per capita in Internet cafes, and the number of Internet cafes located in the city of Irbed, is ranked number one in the world, with regard to so many Internet cafes located in a small region.

24. The number of Internet users in the world will reach one billion in year 2005.

25. Arab Bank is the first bank to launch Internet banking service.

26. The Internet Shopping Card (ISC) is specifically designed to provide convenient and easy access to on-line shopping, with small limits.

27. The postal system in Jordan is understood to be slow and unreliable. Using this service with e-commerce would negatively impact the latter. Moreover, the address location system in Jordan still not produced in an efficient and practical way.

28. There are no new laws that are needed in order to govern e-commerce. The current laws are not so much helping in governing the requirements of e-commerce practicing.

5-1-2 E-commerce application in Jordan

1. E-commerce application in Jordan could be considered as in the beginning, and what implemented is rather unsophisticated.
2. E-commerce application at this early stage has a positive impact in order to allow Jordan to intensify its sharing in the world market.
3. E-commerce experience in Jordan could be considered as random, humble and dependant on the private initiatives as it has been showing more success.
4. Jordan doesn't yet have an extensive approach for the adjustment and administration of e-commerce.
5. E-commerce applications in Jordan are incorporate mostly of transactions undertaken between a few Jordanian institutions with non-Jordanian partners. Most of these applications take place over websites that are hosted outside Jordan, where Internet services and telecommunications facilities are more developed.
6. E-commerce transactions are joined with methods of payment that go through foreign banks that offer payments gateway usually located outside Jordan.
7. The field survey covered 31 institutions out of 350 institutions with website available, which represent about 9%.
8. The number of website development companies is not exceeding 19. The sites are basically used for advertising and product displaying, as only a few companies are practicing export sales.

9. The field survey shows that about half of the institutions responded that the reason to build a website is just to have a website.
10. Website language is considered as one of the problems hindering the expansion in Internet use in Jordan.
11. The field survey shows that about 84% of websites are in English language, and 13% are in Arabic and English languages, while only 3% are in Arabic language.
12. Increasing and improving local content, in both Arabic and English languages would draw international clients to local websites and create an on-line demand for Jordanian products and services.
13. The field survey showed that about 40% of the interviewed institutions do not promote their websites, while 26% use brochures and business cards as methods of website promotion, and only 11% are using advertising banner on-line.
14. The person in charge of the website of about 45% of the interviewed institutions is the marketing manager and 10% is the sales manager, while 45% assign some other person to be in charge of the website.
15. The literacy rate in Jordan is about 89% and considered too high with comparison to neighboring countries.
16. About 17% of workforce in Jordan have higher education certificates and about 19 thousand are holders of post-graduate degrees.
17. The educated and trained workforce gave Jordan an advantage of being one of the major suppliers of skilled and trained workforces among neighboring countries.
18. There are 20 universities in Jordan offering degrees in different subject related to information technology.
19. E-commerce application in Jordan is facing an obstacle of absence of payment solutions.
20. Awareness is hindering the understanding of e-commerce concept, besides the absence of trust about on-line payment and security, in addition to the lack of legal protection against deceiving.

21. Insufficient infrastructure such as computer and Internet literacy, Internet services, law Internet links and expensive telephone rates.
22. Logistics facilities in Jordan are still resisting e-commerce application.
23. One of the Important and backbone of e-government initiative is payment gateway.
24. Financial sector of Jordan is considered as one of the improved financial sectors among neighboring countries and generates in total close to 5% of the GDP.
25. The Central Bank of Jordan has plans to introduce electronic check clearing, and that in turn requires first a law modification.
26. The field survey showed that more than a half of the interviewed institutions do not use the Internet for sale, and 19% receive payment on delivery, while the percentages of using credit card/website and credit card/telephone are 11% and 5% respectively.
27. The lack of electronic payment and the small coverage of credit holding are hindering the application development of e-commerce in Jordan.
28. Royal Jordanian Cargo, Aramex, DHL, and Mail and Post are the four important logistics parties in Jordan.
29. There are no new laws and legislation required governing e-commerce. However, the current laws and legislation are not so much helping in governing the requirements of e-commerce application.
30. The Central Bank of Jordan is showing an interest of drafting a law in order to organize payment and regulate e-commerce.
31. The Ministry of Information and Communications Technology has drafted an Electronic Transactions Law.
32. More than half of the institutions covered by the field survey belong to service sector, while less than half belong to industrial sector, and about 3% belong to agricultural sector.
33. Return realization of interviewed institutions varies with respect to realization that 68% realized less than expected, and about

30% realized as expected, while about 3% realized more than expected.

5-1-3 E-commerce in neighboring countries

1. The United Arab Emirates has the best telecommunication facilities among neighboring countries. Payments gateway and on-line security solutions are available. Human resources are having satisfactory skills in order to operate e-commerce.
2. Dubai Internet City is the first complete information technology and telecommunications centre in the world that has been built inside a free trade zone.
3. E-government initiative in Emirates aims at connecting all government offices with each other, as well as with citizens, through the Internet, in order to facilitate government transaction. That encourages people to use the Internet and e-commerce.
4. Tejari.com is an open, horizontal e-business community that allows companies to buy and sell goods and services using all purchasing methods.
5. Telecommunications system in United Arab Emirates is considered as one of the best among neighboring countries. The number of main lines and cellular mobile subscribers per 100 inhabitants are the higher among neighboring countries. The number of main line telephones for 1998 was 38.9 per 100 inhabitants, the number of cellular mobile subscribers is about 20.96 per 100 inhabitants, and telephone calls are also provided at reasonable prices.
6. The Emirates Bank International (EBI), which is 80% government owned, is the only bank in United Arab Emirates that provides comprehensive e-banking by providing payment gateway.
7. In spite of the entire infrastructure available to serve e-commerce in United Arab Emirates, there are no new laws that are needed in order to govern e-commerce.
8. Logistics facilities in United Arab Emirates could be ranked as a high level. There are 6 airports, 11 ports, 8 free zones and 8 post offices.

9. There is an absence of a comprehensive e- commerce strategy in the United Arab Emirates.
10. E-commerce in Lebanon is still in the beginning in spite of some steps that have been taken place in order to promote a new way of doing business.
11. The Lebanon market is relatively small in size, which limits the size of Internet users, in addition, not so many people are aware of the benefits and the importance of e-commerce, which in turn hinders the migration of business to e-commerce.
12. Application of e-commerce in Lebanon is hindered by some barriers such as the lack of an efficient and adequate infrastructure, a scarcity of venture capital and funding, and the absence of laws and regulations.
13. The telecommunication cost in Lebanon is relatively high. Some Internet users (especially businesses) pay US $500 a month for telephone use in order to connect to the Internet. The cost of a leased line amount to more than US $1000 a month.
14. Telecom Egypt is the biggest company among neighboring countries, in terms of number of fixed telephone lines in operation.
15. In spit of the growing rate of the number of main telephone lines in Egypt, the waiting list had around 1.2 million inhabitants during the period (1990-1999).
16. Orascom Telecom is classified as a second telecom company in Egypt. It owns part of MobiNil, the leading mobile operator in Egypt.
17. MobiNil is the leading mobile operator in Egypt. The number of subscribers reached to one million by the end of year 2000, comparing to only 83,500 subscribers at the time of establishment.
18. The first use of Internet in Egypt started by the Egyptian Universities Network in 1993.
19. There are three national bandwidth providers in Egypt: Regional Information Technology and Software Engineering Center, Egyptian University Network and Nile-On-Line.

20. Promotion and awareness are considered to be the most critical barriers to the growth of e-commerce in Egypt.
21. The number of people who are working in information technology in Egypt is estimated to be around five thousand, who produce around US $45 million in software.
22. The number of Internet users in Egypt reached to 250 thousand, which represents about 0.26% of population.
23. The Central Bank of Egypt does not support Internet transactions and has not accepted to be the designated bank for national settlements of credit cards.
24. The number of Egyptian commercial websites is less than two thousand; most of them are in English language.
25. The current Egyptian law can deal with e-commerce application and the resolution of disputes that may arise through electronic transactions.

5-2 Recommendations

Although there is still little experience with e-commerce application to draw definite conclusions, the e-commerce application either in Jordan or in neighboring countries appears to offer an outstanding phenomenon of dealing with new technology.

Based on the study, the following are recommended:

1. Jordan can develop a comprehensive e-commerce strategy that addresses all aspects involved. The strategy could be translated into a program. A committee that includes representatives from telecommunications authorities, ISPs companies, and trade promotion organizations, banks, legislative bodies and other concerned parties could supervise the management of the program.
2. The government, NGOs and international organizations should work together for increasing computer and Internet literacy. However, establishing computer centers in remote areas is recommended as to provide citizen with computer and Internet access.
3. State and private universities in addition to vocational schools should include e-commerce and e-business management courses in their curricula.

4. The government, NGOs and the private sectors concerned with trade should campaign to raise awareness about e-commerce and provide citizens with benefits. They should raise awareness of SMEs about on-line opportunities and should help and guide them in developing websites to manufacture and export their products.

5. Efforts should be made to enhance Jordanian knowledge with regards to the availability of on-line security solutions and the security requirements for each stage of a transaction, this should ease their perception about buying and selling on-line cheating and insecurity.

6. Telecommunications enterprises should reduce leased line fees for ISPs and dial-up telephone rates for subscribers, along with supplying better services to encourage connectivity and make it more feasible for ISPs to afford services.

7. ISPs should enhance their services and their terms. Train professionals in the field of Internet services, reduce interruptions in connectivity and help find solutions for other Internet problems are recommended.

8. The legal system should assist the initiating of laws that recognize electronic evidence and protect consumer's rights.

9. Laws for computer crimes and cheating should be put in place to protect those trading on-line and give them a sense of trust and security. Such laws should be matched with international laws, as computer crimes are international in characteristics.

10. The Central Bank of Jordan (CBJ) and the major banks should promote the use of credit cards. They should also facilitate Internet trading by dealing with on-line financial transactions and providing payment gateway for e-commerce.

11. Postal system services are affected negatively by the current address location system, such modification, or even new system of marking the address location is required in order to help e-commerce application.

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ANNEXES

ANNEX 1

Questionnaire Number: | | |

Royal Scientific Society

Computer Technology, Training and
Industrial Studies Center

A Questionnaire
For a Study of:
"Electronic Commerce"

Governorate:				
City:				
Village:				
Numerator		Date: / / 2001		
Data Corrector		Date: / / 2001		
Data Processor		Date: / / 2001		

All data in this questionnaire are confidential and for statistical purpose, and will not be used for any other purpose, according to the law of the Department of Statistics number 24 year 1950 and its modifications.

June, 2002

First: General information about the company:

A: Company name .....
B: Address .....
C: Tel .....
D: Date of establishment .....
E: Number of employees .....
F: Is your company (B2B) or (B2C) or others (.....)

Second: Electronic-commerce application:

A: Does the company applies E-commerce? (Yes), (No)

B: If yes, since when? Month/year. .....

C: Barriers to E-commerce

1. Security
2. Culture
3. Trust
4. Risk
5. Not sure of benefits
6. Ability to make and receive payments
7. Organization
8. Lack of knowledge and qualified personnel
9. Executive awareness
10. Lack of public key infrastructure
11. Other( )

Third: e-commerce staff:

1. Number of employees ( )

Education level	Number
University	
Two-year college	
High school	
Less than high school	

Forth: Organization of the website:

1. Who is in charge of your website?
   - The marketing manager
   - The sales manager
   - Others( )
2. How many people are working for your website?
   - ( )
3. In what language(s) is your website available?
   - Arabic
   - English
   - Other( )

Fifth: Internal strategy

1. What was the reason(s) is your website available?
   - just to have a website
   - the idea of a person in the company
   - because competitors have website
   - Others ( )
2. What kind of results did your company expect from its website?
   - Be known ,noticed, identified
   - Promote our goods and services
   - Find suppliers, sources
   - Others: .....
3. How do you promote your website?
   - We do not promote our website
   - With advertising banner online
   - By brochures & business cards.
   - Others( )

4. Which is the main payment system that you offer for online sales in your company?

   - none, we do not use the internet for sale
   - payment on delivery
   - credit card on our website
   - telephone sales using credit card
   - banking transfers or checks

5. How long it takes to response to your customers?

   - Immediate
   - ( ) hour
   - ( )day

Sixth: Expectations from the Internet

5. Has your company realized a return on investment from the website?

   - we realized what we expected
   - we realized less than we expected
   - we realized more than we expected

Seventh: About the business:

1. What is your appropriate area of business?

   - Agricultural, mining
   - Industrial
   - Services

2. How many customers do you have on an annual base?
   ( )