A STUDY OF ELECTRONIC COMMERCE IN DEVELOPING COUNTRIES:

THE CASE OF THAILAND

By

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A Research Paper

Submitted in Partial Fulfillment of the
Requirements for the
Master of Science Degree in
Management Technology

Information Technology Operational specialty

Approved for Completion of 3 Semester Credits
(INMGT – 735 Field Problems)

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ABSTRACT

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A study of Electronic Commerce in Developing Countries: The case Of Thailand

(Title)

Management Technology	Dr.Abel Adekola	01/2001	58
(Graduate Major)	(Research Advisor)	(Month/Year)	(No of Pages)

American Psychological Association (APA) Publication Manual

(Name of the Style Manual Used in this Study)

The advancement of information and communications technologies in the twenty-century is transforms the old fashioned economic into a digital economic. As a result, the Internet and electronic Commerce are an outcome from this revolution. Electronic Commerce provides the convenience of 24 hour shopping to any place across the worldwide whenever the customer wants it. There is no boundary to do business transaction, physical location, and customer.

Thailand, one of developing country in South East Asia, has to know and prepare for the new face of business transaction in the new millennium. Furthermore, information technology has been seriously promoted in Thailand since 1992. Thus, the government does need to bring Thailand as same as any other country in this globalize technology.

The need for search in this area is driven by the need for developing country like Thailand to adapt its market into the digital world. The objective of this study is to understand the

basic of EDI (Electronic Data Interchange), which is the principle of electronic commerce, to determine the opportunities and to forecast the future of electronic commerce in Thailand.

ACKNOWLEDGMENTS

I wish to gratefully acknowledge the research advisor Dr. Abel Adekola Associate Professor of Management & International Business University of Wisconsin – Stout, for providing me with extensive review of the research and making insightful suggestions of revision.

I am also thankful to all the instructors of university of Wisconsin – stout who have given me a valuable knowledge.

Lastly, I would like to thank my father, my mother, my grandmother (R.I.P.), and my sister who have given me a good will and encouragement.

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CHAPTER I

Introduction

Nowadays, most corporations are changing their businesses in terms of the Internet and its new culture and capabilities. Companies are using the Web to buy parts and supplies from other companies, to collaborate on sales promotions, and to do joint research, by exploiting the convenience, availability, and worldwide reach of the Internet. Many companies, such as Amazon.com, the bookseller, have already discovered how to use the Internet successfully.

Kare-Silver (1999, P1) stated that "Electronic access is becoming more widespread and the equipment more user – friendly, quicker and cheaper to buy. It offers to save time, promises lower prices, and provides the convenience of 24 hour shopping to any place across the globe whenever the customer wants it. There is no restriction on physical location, drive times, catchment areas and planning restrictions. It operates in the freedom of cyberspace."

Thailand, one of the countries in the South East Asia, does need to know this new trend of technology and has just begun to study the electronic commerce. Moreover, Information Technology has been seriously promoted in Thailand since 1992. The government at that time expected the need to have development strategies for this globalized technology and decided to set up the Information Technology organization (Durongkaveroj, 1997). As noted by Koanantakool (1999) "The National Information

Technology Committee (NITC) was established in 1987 to oversee the policy aspect of information technology development and deployment in Thailand. At present, it has 18 subcommittees steering various Information Technology developments, including three that directly affect the electronic commerce development: the Electronic Data Interchange (EDI) subcommittee, six IT-law subcommittees and the Electronic Commerce Task Force." Also, The National Electronics and Computer Technology Center (NECTEC) under the Ministry of Science Technology and Environment is in the process of drafting IT laws and a national information infrastructure law for universal and equitable access.

What is E-commerce?

There are many meanings of electronics commerce such as "E-business" ("electronic business," derived from such terms as "e-mail" and "e-commerce"). E-business is the conduct of business on the Internet, not only buying and selling but also servicing customers and collaborating with business partners (IBM, 1997)

According to Mougayer (1998) electronic commerce is "The buying and selling of products and service over the Internet or other electronics networks". It means the placement of a product or service on the web and came up with the enablement of a payment mechanism to capture the buy transaction.

The Electronic Commerce term used by The NITC (National Information Technology Committee) (2000) refers to "the carrying out of business activities through electronic means" on the basis of the followings:

- E-commerce use based on the rule of each country
- "Electronic Commerce" has been used for a long time (i.e. Shopping by phone before the boom of shopping by the Internet)
- The Internet is the business media that can support every step of electronics transaction i.e. production, searching system, order system, payment system, and shipping system

E-commerce, ecommerce, or electronic commerce is defined as the conduct of a financial transaction by electronic methods. With the growth of commerce on the Internet and the Web, E-commerce often refers to purchases from online stores on the Web, otherwise knows as E-commerce Web sites. These words may also be referred to as "virtual-stores" or Cyber stores. Because the transaction goes through the Internet and the Web, some have suggested other terms: I-commerce (Internet commerce), or icommerce. Few have referred to it as Web-commerce. E-commerce can be business-to-business or business to consumer

Background of the problem

The E-commerce is nothing new to the world community. In fact, the banking sector has been using e-commerce, the money transfer via electronic means – the SWIFT system. EDI or electronic data interchange has also been in place in most custom – related transactions in the developed economy. In contrast, it is a new phenomenon in Thailand.

Problem of the study

The purpose of the study is to examine the status and predict the growth of E-commerce in Thailand.

Purpose of the study

The study is designed to understand the following objectives:

1. Understand the EDI (Electronic Data Interchange) that is the core of E-commerce.
2. The opportunities of E-commerce and the future of E-commerce in Thailand
3. Forecast the future of E-commerce in Thailand.

Significance of the study

Due to the fact that the E-commerce is a powerful tool for modern business in the twenty-first century, the need for research in this area comes from the need for a developing country like Thailand to adapt its markets into the digital world. Moreover, E-commerce gives a lot of advantages to the investor by reducing costs within the organization and lowering barrier in communication across the world. The significance of this study is to prepare and increase the knowledge of the Thai people on e-commerce in this time of major change.

Limitation of the study

1 Limited research time and resources.

2 The data and information collection is limited to the United States and to related websites from the Internet.

Definitions of relevant term

ARPANET – It is prototype of the Internet. The Advance Research Projects Agency (APRA) of the U.S. Department of Defense developed the APRANET in 1969. It was the first operational packet-switched network. APRANET began operations in four locations: UCLA, University of Santa Barbara, the university of Utah, and SRI (Stanford Research Institute).

Bandwidth – The amount of data that can be transmitted in a fixed amount of time. For digital devices, the bandwidth is usually expressed in bits per second (bps) or bytes per second. For analog devices, the bandwidth is expressed in cycles per second, or Hertz (Hz).

Electronic Data Interchange (EDI) – The direct computer-to-computer exchange of information normally provided on standard business documents, such as invoices, bill of lading, and purchase orders.

Electronic Mail – Correspondence in the form of messages transmitted between workstations over a network. The most common protocol used to support electronic mail is the simple mail transfer protocol (SMTP).

Internet – A worldwide internetwork based on TCP/P that interconnects thousands of public and private networks and millions of users.

Internetwork – A collection of data networks, possibly including both LANs and WANs interconnected physically by routers and logically by an internetwork protocol.

Internetworking – Communication among devices across multiple networks.

Intranet – An intranet operates within the organization for internal proposes and can exist as isolated, self-contained internetwork, or may have links to the Internet.

Local-Area Network (LAN) – A local network that makes use of a shared transmission medium and packet broadcasting. A packet transmitted by one station is received by all other stations.

Value-Added Network – A privately owned packet-switched network whose services are sold to the public.

World Wide Web – A networked, graphically oriented hypermedia system. Information is stored on servers, exchanged between servers and browsers, and displayed on browsers in the form of pages of text and images.

CHAPTER II

Review of Literature

Through Koanantakool's insight (1995), it is questioning that why the Internet turned into the trendiest matter in the Information Technology in late 20s. The Internet is an international nation with a population of over 30 million who are all approachable by electronic messages. With a 180-per cent-thriving per year, this points out that there were more computers newly merged into this system than all of those already interrelated after the early phases of Internet which launched as Advanced Research Project Agency as abbreviated as ARPANET in 1969.

According to the American Electronics Commerce Association, Electronic Commerce is not a new appearance in the new business world that was invented with the commercialization of the Internet or the development of the World Wide Web. Electronic Commerce has become a well-known word for companies over the past few years with increased awareness about the use of computer and communications technologies to simplify business procedures and increase efficiency. Combining a range of processes, such as Electronic Data Interchange (EDI), Electronic Mail (Email), and Internet applications, it provides ways to exchange information - between individuals, companies, and countries and, most importantly of all, between computers.

Doing business on the Internet

"The internet is a lot of things to many people, which probably explains its explosive growth in recent years in terms of the number of networks and users that are accessible through it as well as the growth in the amount and variety of content accessible through it. One of its most popular applications is electronic mail because it permits users in every part of the world to communicate instantaneously with one another. Users can also distribute documents and engage in conference and meetings." (Estabrooks, 1995 P135).

Stallings and Slyke (1995, pp444-445) noted that today most companies expand the line business into the web site. Moreover, Doing business on the Internet is distinctive from the ordinary commercial practice. Obviously, commercial opportunities abound, but dangers to established companies are no fewer. Companies as large and powerful as AT&T, IBM, and Microsoft have seen careful and extensive marketing plans mode worthless in a period of months by the Web phenomenon.

In business today everything ends with DOT COM because the Internet is the largest network and powerful tool that is not limited by distance, time, and place. As a result, doing business over the Internet has been booming quickly based on the Internet infrastructure and new applications with a computer Technology. Also, the developers and builders focus on market content and service in four areas (Table 1) (Mougayar, 1998, P15)

Table 1. Four Major Areas for commercialization of the Internet

1.Communications/ Collaboration	2.Networked Applications	3.Real-time Multimedia	4. Electronic Commerce
Gathering/Processing Information	Distributed Internet Applications	Distance learning and education	Buying and Selling
Communicating	Linked corporate and legacy data	Entertainment	Digital value creation
Publishing	Web-enabled and live	Virtual reality	New intermediaries
Collaborating	Object – oriented applications	Video/Audio conferencing	Virtual market-places

Note: CYBERM management Inc.

According to Tapscott (1996, P55),

> "Every economy needs a national information infrastructure. This is the utility of the twenty-first century. And every organization needs to plug into this utility with enterprise information infrastructure. The new infrastructure will change economic activity as significantly as did electrification. Just as business and wealth creation would be unthinkable today without electronification, so the new economy would be impossible without the power of information"

Moreover, digital markets are different from physical markets in many ways. Since physical factors are get rid of by the Internet, comparison shopping has no boundaries. Companies with various products or better price performance will more quickly rise to the top and those without will fail (Tapscott, 1996). The framework acknowledged three issues of main concern

and nine areas (Table 2) where international pacts are needed to preserve the Internet as a non-regulatory medium allowing competition and consumer choice to shape the marketplace (Durangkaveroj, 1997).

Table 2 Recent U.S. frameworks for Global Electronic Commerce

Issue	Area
Financial	• customs and taxation • electronic payments
Legal	• uniform commercial code for electronic commerce • intellectual property protection • privacy • security
Market Access	• telecom infrastructure and information technology • content • technical standards

Note: the document from the workshop on Cryptography Policy OECD (Organization for Economic Cooperation and Development)'S Emerging Market Economy Forum

EDI (Electronic Data Interchange)

EDI stands for Electronic Data Interchange. It is one of the cornerstones of electronic commerce. Traditional EDI is a method used to communicate business and information transactions between the computer systems of different companies and organizations. It was originally used in North America in the 1960s and by the mid-1980s it was being used in automotive manufacture, retailing, distribution and holiday booking. Its use is growing quickly and it is set to become the normal technique

by which many organizations will communicate formally with each other. According to Stallings & Van Slyke (1998,P387),

> "Electronic Data Interchange (EDI) is the direct computer-to-computer exchange of information normally provided on standard business documents, such as invoices, bills of landing, and purchase orders. It has become one of the most visible and widely implemented of the distributed applications".

Without EDI, any business operation, such as the order of goods depends on the exchange of paper documents. Also, A transaction may involve a number of people in two different companies as part (A) of the figure illustrates. In addition, if each company has computer-based procedures, the following sequence is involved (Stallings & Van slyke, 1998).

1. Company A prints out a filled-out form (e.g., purchase order) and mails it to company B.
2. Company B enters data from the form into a computer system.

This inconvenient procedure can be preventing if the two companies consent on an Electronic format for the form. That is the key to Electronic Data Interchange.

Figure 1 compares the use of electronic data with a nonelectronic environment.

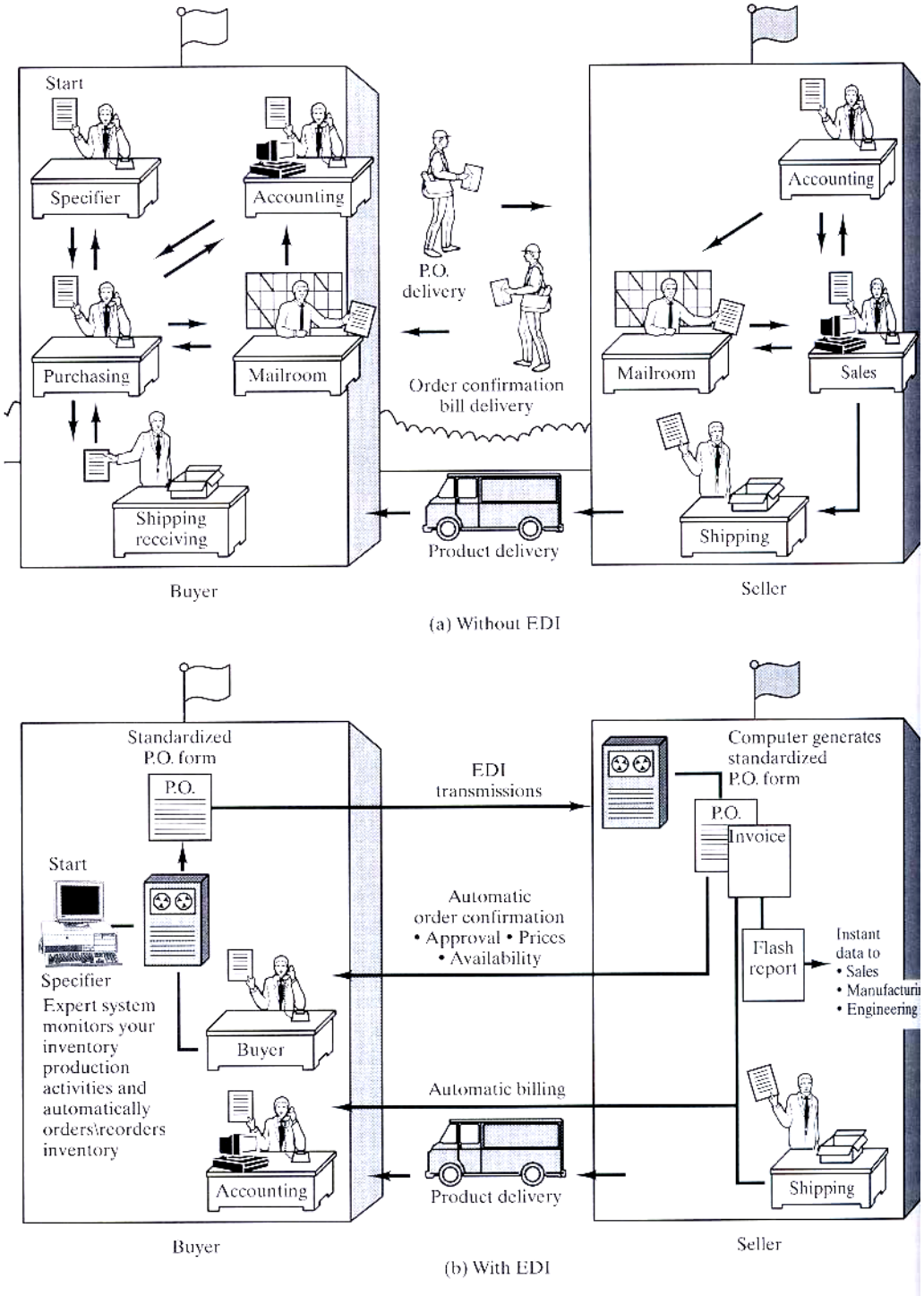


Figure 1 EDI versus Paper

Note: (Business data communications (3rd edition) by Stallings & Van Slyke)

The EDI does provide very real benefits in the areas of:

- **Cost savings:** EDI can save much employee hours in entering data on forms, entering data into a computer form a form and handling the forms, and electronic document transfer.
- **Speed:** Electronic document exchange can occur instantly if two computer systems enjoy an active link or channel across a communications facility.
- **Reduction of errors:** Because communication is computer-to-computer, rekeying of data is eliminated. Moreover, there are no problems of lost or mail problem, since communication is direct and real time verifiable.
- **Security:** By using the feature of network security for protect information
- **Integration with other office automation applications:** Coming electronic documents can activate application programs that make use of incoming data. The ability to receive and act swiftly on documents such as purchase orders and invoices can give a company advantage over companies not using EDI.
- **Just-in-time deliveries:** Just in time is a manufacturing method where goods are produced and made available by prior operations just in time to be further fabricated, assembled, or sold. By speeding up communications, EDI provides the necessary foundation for intercompany just-in-time

Source: (Business Data Communications by Stallings & Van Slyke)

EDI standards

1 American National Standards Institute (ANSI) ANSI X12

As noted by Van Slyke & Stallings (1998), National Standard Institute (ANSI) established the standard of EDI, which has issued a set of standards with the general designation of x.12. These standard forms are related to procedure for applications pertinent to a variety of industries. Additionally, Transaction sets, the structure for communicating information between systems, are defined as for each application units of information. Table 3 lists the transaction sets of form, for two applications that have been developed as x.12 standards by ANSI.

Table 3 Example EDI applications (ANSI X.12)

Transaction Application	General Business Applications
Space reservation	Invoice
Space cancellation or revision	Payment order/remittance advice
Space confirmation, container release and movement	Planning schedule with release capability Price sale catalog
Shipping instructions	Request for quotation
Detailed freight invoices	Response to RFQ
Summary freight invoices	Inventory advice
Inbound consolidator reports	Purchase order
Outbound consolidator reports	Purchase order acknowledgment
Shipment tracing inquiry	Ship notice/manifest
Shipment tracing report	Purchase order change report
Outbound shipment movement reports	Purchase order change report acknowledgment
Imbound shipment movement	Receiving advice
Order payment	Product transfer and resale
Debit payment request	
Freight payment	
Waybill data exchange	
Export control reports	
Import manifest reports	
Repetitive shipment pattern maintenance	
Container transfer	

Note: Business Data Communications by Stallings & Van slyke

The standard for a transaction set encompasses two specifications:

a) Content of the transaction set. These are the actual items of information that the transaction set contains. These correspond to fields on forms. Any given transaction set will contain all the items normally found useful in a particular business form. Many of the items will be optional and may be ignored in a particular application.
b) Format of the transaction set, a computer-readable format is defined to allow exchange of information between computers.

Thus, "Each transaction set (from) contains of a number of segments (line or box of information on the form), and each segment is called in terms of data elements (individual field within a line or box)" (Stallings & Slyke, 1998,P391).

2. EDIFACT (Electronic Data Interchange for Administration, Commerce and Transport)

EDIFACT was developed by the corporation of the member of each country under the control of United Nations (UN). EDIFACT is another standard of EDI that resembles to ANSI X.12. On the other hand, it has been properly modified and modernized for the widespread utilization as an international standard. Therefore, its quality is rapidly popular in the commercial industry these days.

EDIFACT abridged from Electronic Data Interchange for Administration, Commerce and Transport is the yardsticks, which has been employed for standard long time and is increasingly used

throughout the regions all over the world. In the Asian region, the economic group of Singapore, Japan, Korea, China, Taiwan, Malaysia. India, Philippines, and Thailand also have proclaimed to use this standard. Asia EDIFACT (AS/EB) is an organization responsible for backing up the EDIFACT in Asian country. Also, The formal conference held biannually by the host country, which rotates to become a host country. Thailand EDI council has been the delegate of Thailand's AS/EB since 1993. The following address is the worldwide web link to the Thailand EDI council. (http://www.nectec.or.th/users/kate/TEDIC/edi-standard.html)

The future Of EDI (with the Internet)

In these days, EDI is mainly associated with the software technology for formatting electronics messages, data, and forms among computers, as well as with the actual value-added network (VAN) services that support them (Mougayer, 1998). The followings are Mougayer's additional information about the future of EDI:

> It is perceived that EDI is going through a rebirth potential because of the Internet's ability in determining its future. The future of EDI will really depend on how "open" it becomes, Open EDI refers to several aspects of the evolution of EDI as it become more integrated with the Internet. I foresee the rise of a "light EDI" phenomenon. Light EDI is easier to implement and user-friendlier because it relies on forms-based transactions and other WEB interface that hide the behind-the-scene complexities. Light EDI relies on the Internet as the "Network" or uses the Internet as a gateway to existing value-added networks (VANs). (Pp. 21-22)

The marriage of EDI with the Internet has the following elements:

- Web-based transactions that map information seamlessly into the back end of EDI systems, the initiation of the EDI transaction will be through a Web-based form, instead of directly from a computer. This means that form-based gateway become the drivers of the transaction.
- Traditional EDI transaction that utilize the Internet as the network, otherwise known as Internet EDI. This means that existing EDI-type transaction will be using the Internet as the transport network, instead of using a VAN.
- EDI integrated with business-to-business virtual trading communities with end-to-end services that cover the entire buying/selling cycle. This means that EDI is one of the components, and an invisible part of a greater picture.
- Order entry, purchasing, procurement, and other applications that are built on top of EDI and Utilize the Web as a delivery mechanism.
- The shift of VANs to VAINs, or value-added Internet networks. The Internet becomes an integral part of EDI, and EDI embraces the Internet in order to get its share of the renewal potential.

- Increased interoperability among EDI vendors' product in the areas of integrity, Confidentiality, digital signature, and nonrepudiation when conducting EDI transactions over the Internet.
- Marriage of EDI with XML (extensible Markup Language) as a powerful combination to allow a variety of Web-Based data sources to be accurately handled by EDI dictionaries (e.g. A health care claim, a payment order, an invoice)

Three sectors for electronic commerce

1. Business-to-Business (B2B)

The potential of the Internet to connect all business to each other presents a huge threat to traditional intermediaries like wholesalers and brokers. Internet connections facilitate business'capacibility to bargain directly (Ware & et al, 1998).

According to Mougayer (1998), The business-to-business market apply to:

(1) Business selling products service on another, with a given organization serving as either buyer or seller, or

(2) Transaction and information relating to back-end process between suppliers, partners, or channels, such as ordering, paying, EDI, basic and advanced procurement services, distribution support, and logistics management. (The term buying means shopping, whereas for business, it means procurement.)

2. Business-to-Consumer (B2C)

On account of its rapid growth, business identify that the Internet could connect them to a potentially large and affluent market. According to Ware & et al (1998) they noted that the most prominent of these new paradigms is that of relationship marketing. Because it is possible to track consumer actions on the Web, companies are realizing that it is a valuable tool for market research-both through moving consumer survey forms on the Web, and perhaps most promising, by taking benefit of the Web's tracking ability and other technologies to make inference about the preferences of consumers. As a result, once data collected, this information can be used to customize products and services, improving the chances of achieving customer satisfaction and creating a lasting relationship between consumers and these products and services. Moreover, the business-to-consumer market focuses on the customer as the end user or buyer (Figure 2)

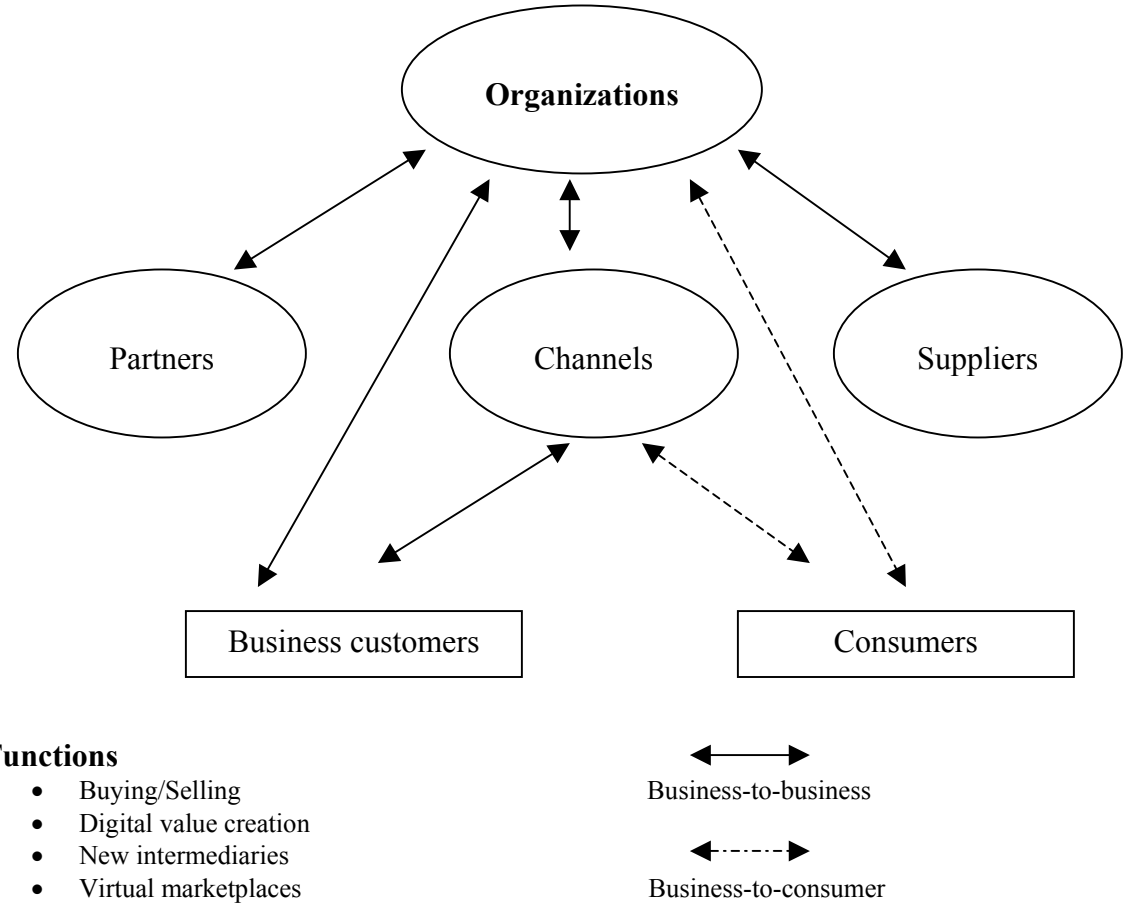


Figure 2 Business-to-consumer concentrated on buyer or end user

Source: Opening Digital Markets by Mougayer

3. Intraorganizational

The intraorganizational side of electronic commerce can be associated with Intranets working for corporation, whereas the business-to-business and business-to-consumer aspects are Intranets working trading partners and consumers. As Intranets begin to interact externally, among different organizations, they can also be called Extranets (Mougayer, 1998,p17).

Thus, Mougayer (1998) identified the relationship of three sectors for electronic commerce: Business-to-business, Business-

to-consumer, and intraorganizational (Figure 3). Although, there are many basic differences and characteristics, companies must approach all three sectors in a holistic manner in order to exploit and leverage the synergy that can be extracted from the common aspects of implementation.

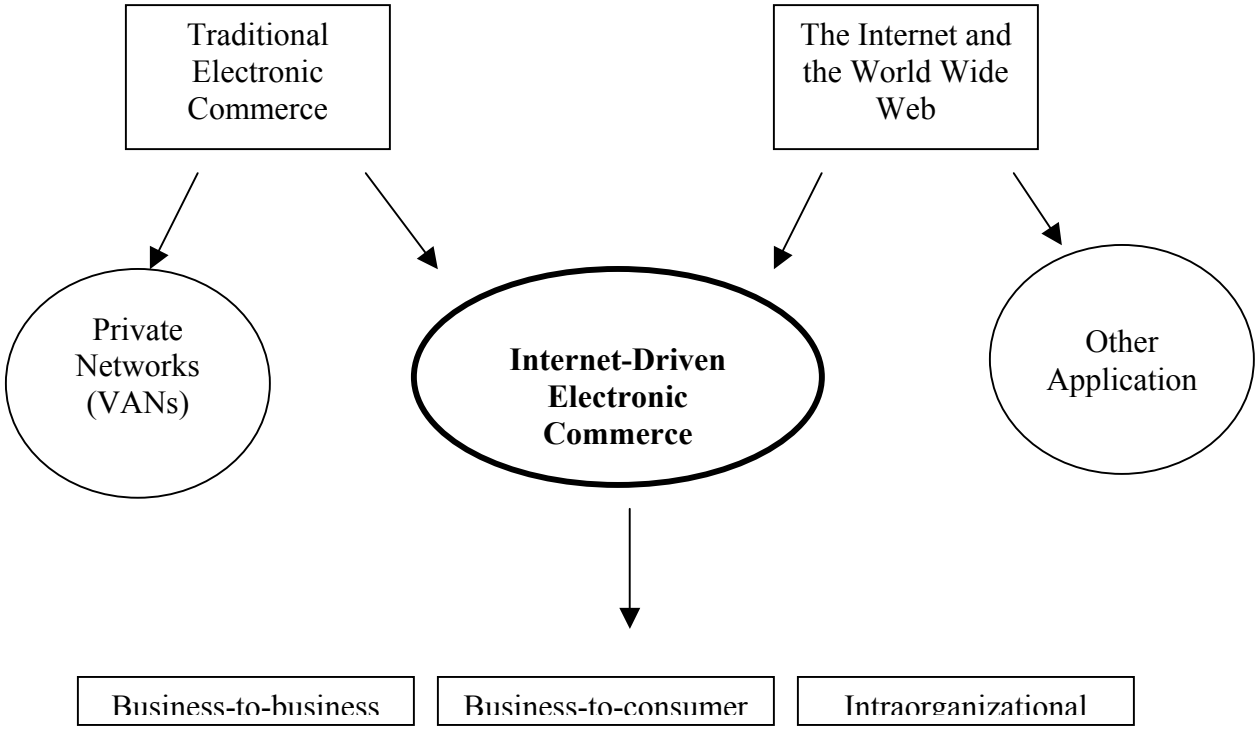


Figure 3: Internet commerce is about the convergence of the web with traditional electronic commerce

Noted: CYBERManagement Inc.

Understanding step of electronic commerce transaction

Every step of business transaction on the Internet can be process by a computer online. Beginning from Searching the Internet advertising to shipping the product follow the step (figure 4). Also, the payment system can be done by credit card.

The term of Physical goods define as the touchable goods and Electronic delivery is the product that delivery to customer by online i.e. online stock market, Marketing information.

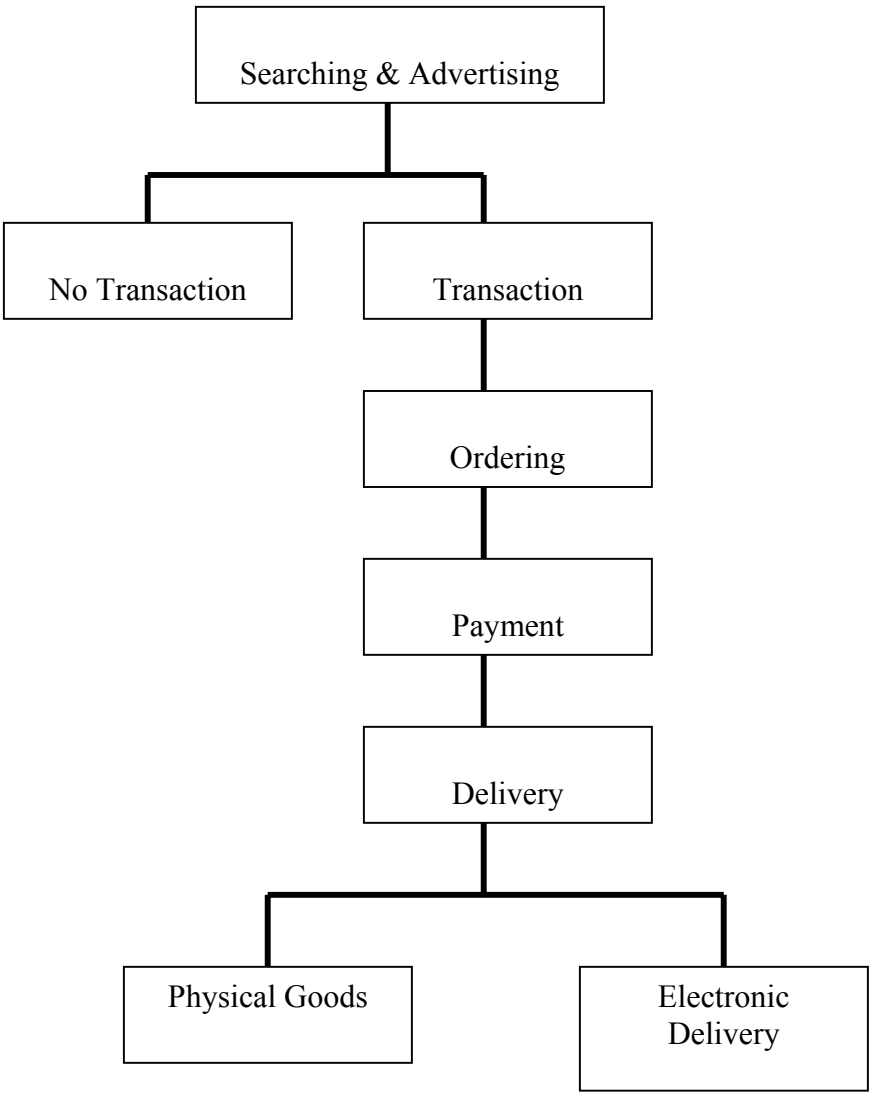


Figure 4: Stages in electronic transaction
Source: http://www.nitc.go.th/ecommerce/def.html

Thailand in brief

Population (Million)	: 61.86 (27 October 1999)
Birth rate	: 16.46 births/1,000 population(1999 est.)
Area	: 513,115 sq. km.
Population density	: 189 per sq. km.
Urbanisation	: 20 %
Capital	: Bangkok (Population 10 Million est.)
Length	: 1,620 Km (North to South)
Maximum breadth	: 750 Km (East to west)
Borders	: 5,300 Km
Coastline	: 2,700 Km
Neighboring Country	: Malaysia (South); Myanmar (West) Cambodia (East);Laos (Northeast)
Climate	: Subtropical with no major tropical storm
Official Language	: Thai
Religious preference	: 95% Buddhist 4% Muslim 1% Hindu, Christian, and others
Political System	: Constitutional monarchy
Government	: Central administration with 76 provinces
Reigning monarch	: His majesty King Bhumibol Adulyadej
GDP (Billion Bath)	: 4,775.4 (1999E)
Economic growth (%)	: 2.5 (1999)
Per capita income (Bath)	: 74,657 (1999E)
Inflation rate (%)	: 0.5 (Jan – Aug '99)
Currency	: The Bath (100 Satang)
Exchange rate (Bath per US$)	: 38.06 (31 March, 2000)

Note: Bank Of Thailand

Electronic commerce in Thailand

Koanantakool (1999), reports the development of electronic commerce in Thailand, claiming that electronic commerce has become the trendy subject of conversation in major international forums. Taxation, telecommunication infrastructure, information security, and legal policy are among the most controversial factors influencing the attainment of electronic commerce. Most economies are tackling these issues and attempting to develop national frameworks. With the imperative technical and policy infrastructures established, one essential component to be explained among users to urge the widespread utilization of electronic commerce is trustworthy. Furthermore, The organization, which is an important role for electronic commerce development, is the National Electronics and Computer Technology Center (NECTEC) under the authority of the national information technology committee (NITC). Through the Nectec website (www.nectec.or.th), its characteristics and significant roles are depicted as follows:

> A dynamic organization that is responsible for the development of Information Technology in Thailand. Its mission is to ensure Thailand's competitiveness in Electronics and Computer and the use of IT to stimulate economic and social impact through own R&D programs as well as R&D funding services to universities. The organization now has a work force of about 400 persons and has been operating for twelve years in Research and Development, IT Policy Planning and Government Information. NECTEC is also the secretariat office for Thailand's National Information Technology Committee. There are several new projects on IT infrastructures in Thailand

> that we are handling. Please explore this web site to get your required information about the Information Technology of Thailand.

According to Kaoanantakol (1999) the Nectec has been working on issues connecting to electronic commerce in three main areas: developing the electronic commerce framework for Thailand, drafting six IT laws, and drafting technical specifications and recommendations. Additionally, The National Information Technology Committee (NITC) - whose main accountability is to supervise Information Technology development in Thailand - assigned NECTEC to develop an electronic commerce framework suggesting the functions and responsibilities of government agencies. One of the objectives of the plan is to facilitate private sector connection in evolving domestic and international electronic commerce arenas.

Electronic commerce framework for Thailand

The Electronic commerce framework as defined by Kaoanantakol (1999) is an equivalent to the development of the framework, NECTEC - under the mandate of NITC - is drafting six IT laws, which are Data Protection Law, Computer Crime Law, Electronic Data Interchange Law, Digital Signature Law, Electronic Funds Transfer Law and Universal Access Law. The six laws will function as a foundation for doing electronic commerce and enhance confidence among the members of the electronic transaction playground while providing rules and etiquette for fair play. Besides, The NITC's Electronic Commerce duty Force set out to develop an electronic commerce framework that reflects the

needs of all parties involved while compromising discordant interests. The task force has taken the step to reach out to all parties involved including government agencies, Internet service providers and computer-related industries. Interviews have been arranged with concerned parties to discuss controversial issues such as the balance between government regulations and promotion of free trade. The task force is tackling controversial issues such as taxation, telecommunication infrastructure, human resource development and technology (Kaoanantakol, 1999). Consequently, in reaction to this movement, NITC has proposed setting up Thailand's Electronic Commerce Coordination Center (EC 3) where NECTEC would be given a role as central point in coordinating with other governments and private agencies for the development of electronic commerce in Thailand. In general, EC 3 would be established with the following objectives:

- To gather information on electronic commerce developments both locally and abroad
- To study such issues as policy, direction and the country's position in regard to the adoption of electronic commerce for Thailand
- To coordinate the development activities of electronic commerce in the government sector
- To encourage the use of electronic commerce in the public and private sectors

Source: http://www.nectec.or.th/users/htk/e-commerce/intro.html

Six IT Laws

According to the Nation, an English journal in Thailand, six IT (Information Technology) laws drafts are expected to be submitted to the Thai Cabinet by the middle of 1999. Nectec plans to propose the first two drafts of a law in line with Article 78 and the Computer Crime Law to the Cabinet by March 1999. Three months later, it intends to submit the remaining four electronic commerce laws including the Electronic Data Interchange Law, the Digital Signature Law, the Electronic Funds Transfer Law and the Data Protection Law for Cabinet approval.

The Data Protection Law

This relates to protect the right of privacy in the Information Society.

The Computer Crime Law

This is related to crimes committed on computer systems and networks. The law will detail penalties, which could be fines or imprisonment, to be enforced on those breaking the law. These kind of computer crimes include fraud by computer manipulation, computer espionage, computer sabotage, the theft of services and unauthorized access.

The Electronic Data Interchange Law

This relates to new electronic trading systems. The law will support the acceptance of any transactions and contracts made via computer systems and networks as legal evidence. Meanwhile, it will include methodology in order to help legal authorities decide on the quality of the electronic evidence.

The Digital Signature Law

This relates to electronic commerce. This law will focus on security systems on the network by setting up a central organization called the Certification Authority (CA), to help make electronic commerce more secure. CA will help guarantee that buyers on the Internet are not cheated by disreputable businesses.

The Electronic Funds Transfer Law

This provides a legal basis for financial transaction carried out via networks. The Data Protection Law will focus on protecting sensitive information. This will cover individual protection in three aspects including the right of privacy, the right to communicate and national security.

The Universal Access Law

Bylaw of Section 78 of the Thai Constitution, this is related to create an equitable information society by promoting universal access to information in the National Information Infrastructure (NII).

Source: The Nation by Boonnoon

Thai IT market by industry segment
Value in Million Baht

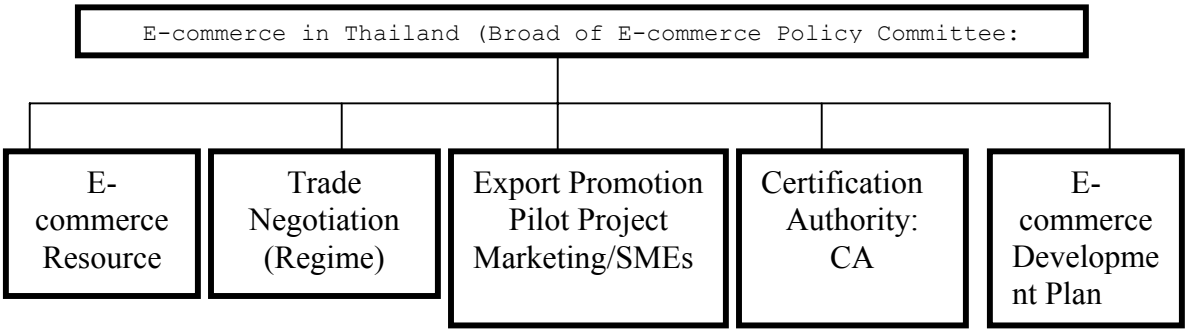
Segment	1997	Ratio	1998	Ratio	1999	Ratio
Government /State Enterp	7,250	17%	3,374	13%	5,693	21%
Financial	5,118	12%	2,076	8%	2,440	9%
Manufacturing	6,823	16%	4,931	19%	4,880	18%
Health Care	1,279	3%	519	2%	542	2%
Hotel	1,279	3%	519	2%	271	1%
Telecommunication	5,544	13%	4,152	16%	3,253	12%
Education	5,544	13%	3,374	13%	2,982	11%
Home Uses	5,118	12%	3,633	14%	3,253	12%
Other	4,691	11%	3,374	13%	3,795	14%
Total	**42,646**	**100%**	**25,953**	**100%**	**27,109**	**100%**

Thai IT hardware & information services
Value in Million Baht

Segment	1997	Ratio	1998	Ratio	1999	Ratio
Hardware	27,595	65%	13,597	52%	13,667	50%
Software	6,851	16%	5,126	20%	5,227	19%
Professional /Services	8,200	19%	7,229	28%	8,215	30%
Total	**42,646**	**100%**	**25,953**	**100%**	**27,109**	**100%**

Noted: ATCI/ATSI/CAT-VG

Chart of E-commerce in Thailand



1 DATA CENTER	1 WTO: TARIFFS: Still, No New Tax	1 Domain Name; E-commerce for thai official: http://www.thaicommerce.net	1 Certification Authority (CA) of E-commerce	National Economics and social Development Board: NESDB
2 Human Resources Development: HRD	2 APEC: US and Thai coshare in steering group. - Study and Research in SMEs tropics - Ecotech cooperation - Electronic Data Interchange: EDI (paperless) - E-commerce paperless (EDI) in 2005 A.D. for developed countries - E-commerce paperless (EDI) in 2010 A.D. for developing countries	2 Registration: E-commerce trust: http://www.exporter.org	2 Root (RCA): control Public Key Infrastructure (PKI) or registry (Trade Siam)	2 E-commerce Master plan
3 Training	3 Department of Business Economics (DBE)	3 Ministry of Commerce and Public Sector Cooperation	Subordinate CA (SCA) Registry Agent (RA) : Public and Private Sectors or WANs audit operation	
4 E-commerce 6's IT Laws			Entity Users	
5 NECTEC and Ministry of justices				

Source: http://www.thaiecommerce.net/ecom.htm

Summary

Electronic commerce may be the new phenomenon in the 21st century and the big revolution in the business world by using the feature of the Internet and Information Technology. For Thailand, NITC and NECTEC will get things ready for electronic commerce framework as the roadmap. The Electronic Commerce Coordination Center (EC 3) will assist the domestic and international developments in all sectors for efficiency and economical purposes.

Chapter III

Methodology

Introduction

Research Methodology applies to the ways researchers come close to problems and seek answers. Qualitative methodology defines, in the broadest sense, investigations that produce descriptive data: people's own written or spoken words, observable behavior, and in-depth interviews.

According to Kvale (1996), qualitative research interview is an essay to understand the world from the subjects' points of view, to unfold the meaning of people' experiences and, to uncover these people's lived world prior to scientific explanations. This is the study involving an interview question. The purpose of this study is to understand the feasibility of electronic commerce in Thailand. Furthermore, the respondents are people who work for information technology organizations in Thailand.

Research problem

The problem of this research study is to know the status and opportunities of electronic commerce in developing countries such as Thailand.

Method of study

The researcher developed an interview questionnaire and sent them via electronic mail to the five key actors in information technology and research institutions in Thailand. The data collection took the form of interview questions from the

people who have important roles and work on e -commerce projects in Thailand. Moreover, the Internet was used for a media tool of connecting the researcher and the interviewees. The activities took place over the Internet. The data was gathered from the interview questionnaire, and the analysis was translated from the opinions and ideas of the interviewees.

Sample selection

Five people who take part in the e-commerce campaign in Thailand were selected for interviews. The questionnaire was specific to what these chosen people thought about the direction of Thailand; what they thought about the e-commerce in Thailand; and also if this new business was suitable for the Thai people.

Research instrument

Before doing a survey, the cover letter told interviewees how important the survey was and that all surveys would be confidential. This study was designed to collect data through the use of an interview questionnaire via electronic mail. The questionnaire consisted of 7 questions based on the research that was studied. Moreover, the questions are related to the opinions of the respondents toward electronic commerce in Thailand. The cover letter and questionnaire were sent together and the researcher informed them that the gathered information was being used for a study and not for commercial purposes. Also, the data was to be kept confidential and the information obtained would be strictly used for the research project.

Limitation for study

The limitations of the study were as follows:

- The researcher worked on the project in the United State of America and not at the source of study which is Thailand.
- The activities between the interviewer and the interviewee took place over the Internet by using the Internet media, e.g. electronic mail.
- Lack of adequate resources to support the intent of the study.
- Lack of face to face interaction with the interviewee.

Data analysis

After the interviews were completed, the data was sorted, transcribed and interpreted for their main ideas.

Chapter IV

Summary of Findings

Introduction

The aim of this study was to find out the outstanding characteristics of Electronic Commerce in Thailand. As mentioned in the methodology chapter, a questionnaire was designed as a tool for data gathering. The questionnaire composed of 7 questions. In addition, the study was conducted during June 2000 by distributing the questionnaire to 5 key actors who are crucial to the information technology and e-commerce projects in Thailand. The questionnaires were distributed by electronic mail. To inform participants about this research study, the researcher sent out the cover letters along with the questionnaires on June 15, 2000. Each participant was asked to participate in questionnaire interview and return it via electronic mail. Moreover, on June 25,2000 the researcher sent out the follow up mail and attached the questionnaires interview via electronic mail to remind the 5 key actors. 3 out of the 5 key actors returned the questionnaire to the researcher.

The findings

The following section is the findings of the survey.

1. Key actor 1 works for National Electronics and Computer Technology Center National Science (NECTEC)

and Technology Development Agency Ministry of Science Technology and Environment, Thailand.

2. Key actor 2 is a member of Thai Association of Thai Computer Industry.
3. Key actor 3 works for Software Park Thailand (a project initiated by the National Electronics and Computer Technology Center (NECTEC) as part of the National Information Technology Plan. The project aims to stimulate the development of the Thai software industry by attracting local and international partners to establish a critical mass of software-related businesses supported by world-class infrastructure, tools and consultative services).

The following are the responses of the actors to the survey questions.

Question 1:

What do you think about E-commerce in Thailand currently?

Key actor 1 suggested that the major companies in Thailand are now online and work hard to implement e-business. According to the survey of Internet Thailand and the E-commerce Research Center found that the sale revenue roared to 1 trillion baht (Thai Currency) in 1998 as well as the majority of business users on the Internet plans to get into some kind of revenue online within 1 year.

According to Key actor 2, the Thai Government supports only public sector, but in the private sector it is very slow due to lack of infrastructure of the payment system. He predicted that the Business-to-Business (B2B) would become popular in Thailand within 1 year.

Key actor 3 noted that currently the potential of E-commerce in Thailand is great, but the actual number of Dotcom Company is still small.

Question 2:

How do you forecast Electronic Commerce in Thailand?

Key actor 1 suggested that there are many e-commerce infrastructures and projects that will be set up in 2000 as follow:

- Enactment of the Electronic Transaction Act and Electronic Signature Act by August 2000.
- Enactment of Computer Crime Act, Electronic Funds Transfer Act, Data Protection Act and Universal Access Act by the end of 2000 or early 2001.
- The schoolNet project to connect all secondary schools in the country by the end of 2000.
- Launching the largest "Commerce Infrastructure Service" by Internet Thailand (Thailand's Internet Service Provider) which is a large portal site with the following integrated facilitation:
    1. Free Hosting, free bandwidth at the heart of the Internet backbone of Thailand (NECTEC/IIR)
    2. Risk-free, transparent, low overhead payment gateway service to bank and financial bushiness.

3. Low overhead goods insurance service.
4. Discount carrier services.
5. Launching of Mobile Internet using WAP (Wireless Application Protocol) and Second generation SIMM (Single in line Memory Module) for GSM (Global System for Mobile Communications, is the standard mobile service for Europe, Japan, Australia) cellular phones.
6. Tremendous enhancement of the local Internet exchange towards gigabit bandwidth.

Key actor 2 believed that e-commerce will become a new business model in Thailand as other countries, but it may not extend as fast as the western countries. As a result, the present amount of people who subscribe for Internet service is less than 1 million subscribers. Furthermore, Business to Customer (B2C) is a good topic of discussion, however, it will not be easily established by the Thai tradition.

Key actor 3 noted that even though in the present there are approximately 1 million people with the Internet access. They also need the 6-cyber laws to be passed soon to make e-commerce activities legal. However, using mobile phone access to the Internet and e-commerce actions with the WAP (Wireless Application Protocol) technology that can make a big impact on the customer market.

Question 3:

How does the word "E-commerce" applies to Thailand?

Key actor 1 observed that Thai people embrace the term e-business as general meaning rather than original term of "e-commerce." E-commerce to them means Internet commerce and mobile commerce.

Key actor 2 stated that his idea is the same as question 2 i.e., that e-commerce is a new business model for Thai people.

Key actor 3 believed in Thailand Electronic Data Interchange (EDI), transmission of standard electronic documents between computer systems of companies or business organizations, should be closed electronic commerce mostly.

Question 4:

Good point and Bad point of e-commerce in Thailand?

Key actor 1 noted that good point of e-commerce in Thailand is that Thailand has a lot of products to be exported with a new flexibility for e-business such as Tourism, Agricultural product and Handcraft. However, the lack of Information Technology (IT) equipment and software for running the e-business is a bad point.

Key actor 2 believe there is neither bad point nor good point about e-commerce in Thailand. However, it will take a long time for the Thai people to adjust and understand e-commerce as a new way of conducting business online, and accept this as a new form of business.

Key actor 3 thought that bad point of e-commerce is that it group Thais into Internet and Non-Internet people. On the other

hand, the good part of it is that it will give small businesses the opportunities to join venture and grow up in larger markets.

Question 5:

What do you see chief barrier to e-commerce in Thailand?

Key actor 1 found issues with:

- Knowledge of the understanding of e-commerce concept and meaning, especially those who are not Internet literate.
- Bandwidth (Maximum rate at which data can be transferred in a communications network): it is expansive to get high-speed lines to connect to the Internet
- Law to protect the use of reliable electronic media and computer crime.

Key actor 2 noted that Thai consumers are not familiar with the direct sell and catalog sell. Moreover, Thai people do not trust in "Money back guarantee" or "Return" policy. These are all western commercial culture. The current barrier is "Trust". To present consumer right, this business needs cyber laws to protect consumers. In addition, the secure payment system and the cheaper telecommunication services are the core barrier as well.

Key actor 3 expressed the concern that currently the minorities of people who use the Internet access services are the hindrance.

Question 6:

How do you compare e-commerce in Thailand to other developing country?

Key actor 1, Key actor 2, and Key actor 3 expressed the same opinion that English language is the foreign language that is used mostly on the Internet and e-commerce transactions. As a result, Malaysia and Singapore can go farther than Thailand because those countries use the English language as their second language in contrast with Thailand that uses only Thai language. This is the reason why the e-commerce businesses of Malaysia and Singapore are more developed than e-commerce business in Thailand.

Question 7:

What is the future of e-commerce in Thailand?

Key actor 1 thought that the future of e-commerce in Thailand is very promising and very bright. If the real e-commerce projects can be made interesting, fast, useful, and can give values to the visitors.

Key actor 2 noted that Business-to-Business (B2B) would be flourished within a near future, yet Business-to-Customer (B2C) may consume much time before gaining a sizable population due to the Thai consumers behavior.

Key actor 3 suggested that the trend of e-commerce in Thailand is very good. They are no alternatives to go with it, but e-commerce business in Thailand need time to develop and apply.

These are the responses that were taken from the interview questionnaire via electronic mail in order to complete the objectives that had been set for this research project. It is important to note that there are limitations in distance, time, and lack of face-to-face interaction with the interviewees. As a result, the researcher had to rely on their answers from electronic mail (see appendix)

Chapter V

Summary, Conclusions and Recommendations

This chapter contained a summarization, conclusions and recommendations of the study. The goal of the study covered the main points, which were (1) To find out the current status of e-commerce in Thailand, (2) To determine the possibility and trend of Thailand's e-commerce, (3) To identify the core obstacle of e-commerce in Thailand, and (4) To determine the key actors' opinion about present circumstances of e-commerce in Thailand.

Summary

Restatement of the problem

The purpose of this study was to identify the status, opportunity, and to forecast the e-commerce in developing countries such as Thailand.

The samples for this study were the key actors, i.e. the group of people who participated in e-commerce activities in Thailand such as those who work as director of National Electronics and Computer Technology Center (NECTEC), president of Thai association of Thai computer industry, and director of software park of Thailand (A project initiated by NECTEC as part of the national information plan).

Methods and procedures

Interview questionnaire was designed for gathering the data through electronic mail (e-mail). The questionnaire composed of

7 open ended questions. The respondents were asked about their ideas and opinions toward the status and situation of e-commerce in Thailand currently. The researcher sent out the cover letters along with the questionnaires on June 15, 2000. The cover letter notified the interviewees the importance of this study. In addition, this study ensured confidentiality and limitation for academic purposes only.

The data of this study were classified, transcribed, and interpreted for the critical ideas. The results were explained and shown in the following section.

Conclusions (Core Findings)

- The respondents indicated that in Thailand, both technology infrastructure and legal actions needed to be studied to determine whether a plan of new revolution business model is worth implementing or not before the launch of electronic business.
- The traditional consumer of Thai people is difficult to adopt with e-business. Because Thai people cling to the old fashioned way of shopping by cash rather than credit card.
- In Thailand, the communication structure such as Telephone line, telecommunication system, and Internet Service Providers (ISPs) should be improved to support the new business model.

- The small number of Internet user in Thailand when compared with any other country's impact on the e-commerce growth is of smaller significance.
- The cyber laws, which compose of

1.The Data Protection Law

2. The Computer Crime Law

3. The Electronic Data Interchange Law

4. The Digital Signature Law

5. The Electronic Funds Transfer Law and,

6. The Universal Access Laws are important issues for e-commerce in Thailand because these laws will be used to take care of consumer rights online and make a reliable transaction.

- The future of E-commerce in Thailand is going to expend to the wireless technology based on the technology WAP (Wireless Application Protocol), a secure description allows users to access information instantly via handheld wireless devices such as mobile phones, pagers, two-way radios, smartphones and communicators.

Recommendations for further study

This section contains recommendations for further research.

- Future researchers should examine the key actor attitude.
- Further study should consider the perceptions of Thai people toward the knowledge of transaction electronics.

- This subject should be looked at from the viewpoint of being a necessity for Thai people in order to assess the new way of business transaction.
- A pilot test about the understanding of E-commerce should be studied prior to taking an E-commerce project in Thailand.
- A pilot test should deal with the e-commerce awareness and the essential of the e-commerce for Thai people.

References

Bangkokbiznews online (2000,Feb 25). Electronic Commerce and Thai Economics. http://www.bangkokbiznews.com/2000/kit/2000kit/0224/kit2411/kit2411.html [2000, Feb 26].

Blacker, Keith.(1994). The basics of Electronic Data Interchange. Birmingham, UK: Edistone Books.

Boonnoon Jirapan (1998). Nectec's IT drafts due by mid-1999. The Nation [Online]. http://www.nationmultimedia.com/byteline/byteline/171198/st8.html

[2000,March 25].

De Kare-Silver, Michael. (1999). E-shock. Broadway, NY: American Management Association.

Durongkaveroj, Pichet. (1997). Electronic Commerce in Thailand. The document from the workshop on Cryptography Policy OECD's Emerging Market Economy Forum. Paris, 1997.

Estabrooks Maurice.(1995). Electronic Technology, Corporate Strategy, and World Transformation. Westport, CT: Quorum Books.

Koanantakool, Thaweesak. (1999, May 22). Electronic Commerce Development in Thailand. < http://www.nectec.or.th/users/htk/e-commerce/intro.html> [2000, March 15].

Mougayer, Walid.(1998). Opening Digital Markets. New York, NY: McGraw Hill Books.

Sokol, P. K. (1989). EDI: The Competitive Edge. New York, NY: McGraw Hill Books.

Stallings, William & Van Slyke, Richard. (1998). Business data communications. New Jersey: Prentice-Hall Inc.

Tangkitvanich, Somkiat.(1999, May). The status of Electronic Commerce in Thailand. http://www.ecommerce.or.th/doc/chapter1.pdf [2000,March 15].

Tapscott, Don.(1996). The Digital Economy. New York, NY: McGraw Hill Books.

Thaiecommerce.net (1999). Statistic of Economic in Thailand. <http://www.thaiecommerce.net> [2000,March 23].

Thaiecommerce.net (1999).Electronic Commerce in Thailand.

<http://www.thaiecommerce.net> [2000,March 23].

Thailand EDI Council (1998). EDI standard. http://www.nectec.or.th/users/kate/TEDIC/edi-standard.html [2000,March 15].

Ware, J. P., Gebauer, J., Hartman, A. & Roldan, M. (1998). The search for digital excellence. New York, NY: McGraw Hill Books.

APPENDIX A

Interview Consent

Purpose of the Interview

The purpose of this interview is to identify the relate to the status and opportunities of E-commerce in Thailand.

Procedures

Seven questions will be asked that relate to the status and opportunities of E-commerce in Thailand currently by using electronic media (i.e. Electronic Mail). Five key actors, the people who involve elctronic commerce activities in Thailand, will be selected for this research.

Risk

There is minimal risk or no risk to you about this questionnaire interview. Your responses are completely confidential.

Safeguards

All information gathered by the interviewer will be used to academic purpose. The interviewee's name will not be attached to the research paper.

Confidentiality

The information gather from the interview will be used to find out the status of e-commerce in Thailand in academic purpose. Interviewee's responses will not be used for any other purpose.

Offer to Answer Inquiries

All inquiries regarding this interview may be addressed to:
Dhamadit Charoenying
charoenyingd@post.uwstout.edu , Dhamadit@hotmail.com
(206) 368-9356

Third Party Referral for Concerns

Dr. Abel Adekola. Research Adviser. (715) 232-1438

Signature

"I consent to this interview."

Signature of Interviewee_____

APPENDIX B

Cover letter for interview

A study of Electronic Commerce in Developing countries: The case Of Thailand

Dear Respondents,

I am Dhamadit Charoenying, a graduate student from the University of Wisconsin – Stout. Currently working on a field problem in Management Technology program in the topic "A study of Electronic Commerce in Developing countries: The case of Thailand. I would like to need your help and assistance in conducting a study of the movement and status of E-commerce in Thailand. The purpose of this study is to know the status and to predict the growth and opportunities of E-commerce in Thailand.

You are very important to the success of this study. I am asking for you to please participate in the key actor interview. I would appreciate you valuable time to help me.

Your response will be kept confidential and the information obtained will be strictly used for my research project

Sincerely yours,

Dhamadit Charoenying
Researcher
131 North Hall
Menomonie, WI 54751
(715) 232-3222

Dr. Abel Femi Adekola
Research Advisor
Department of Business
College of Technology,
Engineering and Management
University of Wisconsin - Stout
(715) 232-1438

APPENDIX C

Follow up letter

University of Wisconsin - Stout
Menomonie, Wisconsin 54751

Dear Sir,

Last _____, I wrote to you about questionnaire interview about E-commerce in Thailand, As of today, I have not yet received your complete questionnaire. It is important to have tie results of the project are as accurate as possible. If you have already mailed in your questionnaire and I have not yet received it, thank you very much. If not please send it in. I have enclosed another copy of the questionnaire in case you misplaced the original questionnaire.

You response is very important. Please invest a few minutes of your time complete the enclosed questionnaire.

You cooperation is greatly appreciated.

Best Regards,
Dhamadit Charoenying

APPENDIX D

7 Interview Questions for key actors

Q 1. What do you think about E-commerce in Thailand currently?

Q 2. How do you forecast Electronic Commerce in Thailand?

Q 3. How does the word "E-commerce" applies to Thailand?

Q 4. Good points and Bad points of the E-commerce in Thailand?

Q 5. What do you see chief barrier to E-commerce in Thailand?

Q 6. How do you compare e-commerce in Thailand to other developing country?

Q 7. What is the future of e-commerce in Thailand?

You are very important to the success of this study. I am asking for you to please participate in the key actor interview. I would appreciate you valuable time to help me.

Your response will be kept confidential and the information obtained will be strictly used for my research project

Best Regards,
Dhamadit "Joe" Charoenying
Researcher
131 North Hall
Menomonie, WI 54751
(715) 232-3222

APPENDIX E

Original email message from Key actor 1

-----Original Message-----
From: [redacted] *[mailto: xxxxxx@nectec.or.th]*
Sent: Tuesday, June 27, 2000 12:35 PM
To: Joe Charoenying
Subject: Re: Follow-up Letter

Dear Khun Joe,

Here is my return questionnaire. Apology for late reply. If you want me
to clarify in any point, please do not hesitate to write an email.

[redacted]

7 Interview Questions for Key Actors

Q 1. What do you think about E-commerce in Thailand currently?

There are naby early adopters of E-commerce and much more E-Commerce aware" businesses in Thailand as we may observed on their Internet usage.
According to a survey of Internet Thailand, its corporate customers account total to over 1 trillion baht of sales revenue in 1998. This means that major companies in Thailand are now online. According to survey by the E-Commerce Resource Center, the majority of business users
on Internet plans to get into some kind of revenue online within a year.
So, we can say that the businesses are working hard to implement e-business.

Q 2. How do you forecast Electronic Commerce in Thailand?

Eventhough it was estimated to be only 1,220 million baht in 1999 (IDC Survey), I expect that the growth can be at a staggering rate since many
e-commerce infrastructures will be in place in 2000. These infrastructures are
- enactment of the Electronic Transaction Act and Electronic Signature
Act around August 2000.
- enactment of Computer Crime Act, Electronic Funds Transfer Act, Data
Protection Act and Unversal Access Act by the end of 2000 or early 2001.
- completion ofg SchoolNet project to reach ALL secondary schools in the
country by end of 2000
- Launch of a largest "Ecommerce Inrrastructure Service" by Internet Thailand today (May 2, 2000) which is a large protal site with the

following integrated facilitation:

1. Free hosting, free bandwidth at the heart at the heard of the Internet backbone of Thailand (NECTEC/IIR)
2. Risk-free, transparent, low overhead payment gateway service to many banks
3. Low overhead goods insurance service
4. Discount Courier services
5. Launch of Mobile Internet using WAP and second generation SIMM for GSM Phones.
6. Tremendous enhancement of the local Internet exchange towards gigabit bandwidth.

Q 3. How does the word "E-commerce" applies to Thailand?
It means Internet commerce and Mobile commerce. However, even when the term e-business was introduced, the Thai society embraces the more general
meaning of e-business inside the original term "e-commerce".

Q 4. Good points and Bad points of the E-commerce in Thailand?
Good point:
Thailand has a lot to export with new flexibilities from e-business. The
identified areas where e-commerce can make a big sifference in income structure of the following sectors: Tourism, Agriculture and Handicraft.
Perhaps Thai food is also something that cen be innovated for e-commerce
purchasing style.

Bad point:
Lack of own IT equipment and software producers make Thailand very vulnerable to excessive import of IT equipment and software in order to run e-commerce.

Q 5. What do you see chief barrier to E-commerce in Thailand?

1. Knowledge of business owners, especially those who are not Internet literate.
2. Bandwidth: it is expensive to get high-speed lines to connect to the Internet.
3. Back-office processes for companies which want to convert their back office to the Internet. It is also a problem for start-ups to have good
book keeping. Without good back-office, e-commerce can only be just a sotrefront with manual back office system. Maybe outsourcing the non-core
business to others might be worthwhile.
4. Law to protect the use of reliable electronic media. Instead of paper
document.

Q 6. How do you compare e-commerce in Thailand to other developing country?

Right now Thailand is below Malaysia and Singapore in the region. We are
better off than others in ASEAM.

Q 7. What is the future of e-commerce in Thailand?
Very promising and very bright. Many feels that Thailand can een make a
better recovery if real e-commerce projects can be made interesting, fast,
useful and give values to the visitors.

APPENDIX F

Original email message from Key actor 2

-----Original Message-----
From: [redacted] *[mailto:*[redacted]*@inet.co.th]*
Sent: Wednesday, June 28, 2000 9:56 AM
To: Joe Charoenying
Subject: Re: Follow up message (A study of E-commerce in Thailand)

Dear Joe,
I am sending the attached answers as reply to your questionnaires. Good
Luck.
[redacted]

7 Interview Questions for Key Actors

Q 1. What do you think about E-commerce in Thailand currently?
Ans 1 The Government is actively driving the ecommerce but the private sector reacts very slowly. Most of the infrastructure still not in place such as payment system. I expect B2B will become active within the next 12 months.

Q 2. How do you forecast Electronic Commerce in Thailand?

Ans 2 Definitely ecommerce will become a new business model here in Thailand, same as elsewhere. But it may not be happening as fast as in the West. We have only less than 1 million Internet subscribers now. B2C is nice to talk about but it will not be easily accepted by the Thai culture.

Q 3. How does the word "E-commerce" applies to Thailand?
Ans 3. I do not quite understand your question! Do you mean does ecommerce well adapted to the Thai culture? If that is what you mean then the Ans 2 above has answered it.

Q 4. Good points and Bad points of the E-commerce in Thailand?
Ans 4. If we accept that ecommerce will become a new way of conducting business, then there is no bad nor good. But of course it will take time for the Thai people to adapt and adopt it. Good and bad about ecommerce in Thailand will be the same as elsewhere. However, Thailand will be more a ecommerce consumer rather than a ecommerce supplier. Most of the products sold as B2C and other related businesses are of benefit to the West especially US.

Q 5. What do you see chief barrier to E-commerce in Thailand?

Ans 5. Thailand is not familiar of direct selling and catalog selling. Thai people do not trust merchants that they can see and

touch. They do not believe in “Money back guarantee”, etc. These are all Western culture. The current barrier is “Trust”. We need cyber laws to protect consumers. We need a secure payment system. We need cheaper telecom services.

Q 6. How do you compare e-commerce in Thailand to other developing country?

Ans 6. It depends which developing country you are talking about. If Loas, Burmese, Cambodia, then we are much more advance. If it is Philippines, China, Malaysia, India we are either at par or behind some of these countries.

Q 7. What is the future of e-commerce in Thailand?

Ans.7. B2B ecom will be booming within a short distance. B2C may take a while before we can gain a sizable population for reasons that stated above.

APPENDIX G

Original email message from Key actor 3

-----Original Message-----
From: [redacted] *[mailto:xxxxxxx@nectec.or.th]*
Sent: Monday, June 26, 2000 6:58 AM
To: Joe Charoenying
Subject: Re: Follow-up Letter

Dear Khun Joe,
Sorry, your first letter came with unreadable questionnaire, the second
Without questionnaire. Only this one is readable.
I would like to suggest you look at www.ecommerce.or.th and check there
for some more information. Perhaps interviewing the people at E-Commerce
Resource Center (ECRC) such as Dr.xxxxx (xxxxxxxx@nectec.or.th)
is going to be more relevant to your area than people like myself.

Regards,
[redacted]

7 Interview Questions for Key Actors

Q 1. What do you think about E-commerce in Thailand currently?
A 1. I think the potential is great but the actual number of dotcoms is still relatively small.

Q 2. How do you forecast Electronic Commerce in Thailand?
A 2. Opportunity is good. Although we only have about 1 million people with Internet access, it will have to be with WAP technology that can make big impact on the consumer market using mobile phones for e-commerce. We also need the 6-cyber laws to be passed soon to make possible fully legal e-commerce activities.

Q 3. How does the word "E-commerce" applies to Thailand?
A 3. I think it is EDI (closed network) mostly.

Q 4. Good points and Bad points of the E-commerce in Thailand?
A 4. Good points: Will allow SME's to access larger markets.
Bad points: Will widen the "digital divide" between the "Internet People" and the "Non-Internet People".

Q 5. What do you see chief barrier to E-commerce in Thailand?
A 5. Small number of people with Internet access and number of mobile phones.

Q 6. How do you compare e-commerce in Thailand to other developing country?
A 6. We are getting there with the rest of the world.

Q 7. What is the future of e-commerce in Thailand?
A 7. Good. We have no choice but to go with it.