This study intends to analyze environmental and policy factors contributing to e-commerce diffusion in the US, Germany, Japan and Indonesia. A substantial portion of this analysis is based on the papers provided by Gibbs (2003) and Kraemer (2006) which offered framework to analyze e-commerce activities. This study consists of four chapters. Chapter 1 focuses on literature review starting with definition of e-commerce based on some references, e-commerce types and e-commerce payment system. Chapter 2 covers the conceptual framework of environmental and policy factors shaping e-commerce diffusion. In addition the Chapter also proposes additional factors that responsible for e-commerce diffusion. Chapter 3 investigates the e-commerce evolutionary process and experiences in U.S.A, Germany, Japan and Indonesia. By using case study, the chapter investigates interdependence between the environmental and policy factors contributing to e-commerce diffusion in the selected countries. Finally, Chapter 4 ends with conclusion based on international comparison and proposals for e-commerce in Indonesia.

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Study on E-commerce Diffusion in US, Germany, Japan and Indonesia—Their Environmental and Policy Factors

By
Wahyudi Agustiono, Ph.D

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ABSTRACT

E-commerce was first introduced in major countries as a new business channel; however, the evolutionary process has varied among different countries. This study attempts to investigate e-commerce experiences in selected countries (the USA, Germany, Japan and Indonesia) and to derive implications from their experiences. It also tries to make proposals for Indonesia's e-commerce.

The approach in this study is in line with the papers on e-commerce described by Gibbs (2003) and Kraemer (2006) in the American literature, which intend to analyze and compare e-commerce activities in major countries. Recent papers tend to focus on the factors contributing to e-commerce evolutionary process; the process has been most likely affected by such factors as international environments, domestic economic situations, and government policies. The international environment factors include ICT globalization, big business strategies, and trade liberalization. The economic situation factors include income level, industrialization/deindustrialization process, and social infrastructure especially for ICT. The government policy factors include liberalization of telecommunication, legal arrangements, and tax considerations for e-commerce.

This study has found that e-commerce evolutionary process has been quite different in the selected countries. The US economy has increasingly relied on e-commerce, represented by, in particular, Yahoo, Amazon, and eBay. Overall, the US economic environments and government policies have been favorable for e-commerce. The German developments have been supported by e-commerce related activities of ICT based exports and innovative medium and small-sized businesses. The Japanese e-commerce has been promoted by the EDI which had already been adopted; the shift to e-commerce has been also strengthened by corporate grouping (*keiretsu*) tradition, conviny-store networks, and mobile technological innovations. By contrast, e-commerce has not been well-established in Indonesia, which needs lessons from foreign experiences. However, there are some successful cases of e-commerce despite many barriers including poor information infrastructure, and concern about security and privacy.

Based upon the above mentioned findings, the Author presents the following three proposals for the Indonesia's e-commerce improvement:

a. Strong leadership or efforts are needed to coordinate ICT infrastructure including network extension, ICT literacy, and potential ICT business chances.
b. Locational considerations should be made for internet café, telecenter, and information access point (IAP), including ICT business cluster.
c. Coordinated business network needs to be established among merchants, Internet and e-commerce providers, financial institutions, and delivery services.

LIST of ABREVIATIONS

APJII	Indonesian Internet Service Provider association
AWARI	the Indonesian Internet Café Association
BEA	U.S Bureau of Economic Analysis
BSN	National Standardization Agency of Indonesia
CIO	Chief Information Officer
DHL	Dalsey, Hillblom and Lynn (Germany Company that provides international Mail, Express, Logistics and Finance)
DOC	U.S. Department of Commerce
DSL	Digital Subscriber Line
ECOM	Next Generation Electronic Commerce Promotion Council of Japan
FCC	Federal Communication Commission
FTTH	Fiber to the Home
ICT	Information and Communication Technology
IPR	Intellectual Property Right
ITE	The Indonesian Law of Information and Electronic Transaction
ITFA	The Internet Tax Freedom Act
ITU	International Telecommunication Union
KSO	Joint Operating Scheme
MASTEL	the Indonesian Telecommunications Society
MNC	Multinational Corporation
MoFE	the Ministry of Finance and Economy of Japan
MPHPT	Ministry of Public Management, Home Affairs, Posts and telecommunications of Japan
NTT	Nippon Telegraph and Telephone
OECD	Organization for Economic Co-operation and Development
PHS	Personal Handy-phone System
SEC	U.S. Securities and Exchange Commission
SME	Small Medium-sized Enterprise
TIKI	Indonesia Delivery Company
UKM	Indonesia Small Medium-sized Enterprise
UNCITRAL	United Nations Commission on International Trade Law
UNCTAD	United Nation Conference on Trade and Development
UPS	United Parcel Service
VAT	Value Added Tax
WPIIS	Working Party on Indicators for the Information Society

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INTRODUCTION

Background

The Internet's development and its maturity have provided opportunities in improving quality of life and sustaining overall economic health. The Internet intensification also has driven creation of new innovation model of business activities such as buying, selling and providing support for products and services through Internet which is commonly known as electronic commerce (e-commerce). The e-commerce, as one of the most important applications of the Internet technology, is undoubtedly bringing countries together to create a global network economy with expectation of reducing transition costs, increasing market transparency and making business more efficient (Zhang, 2004). However there is a variation in the extent of e-commerce evolutionary process among different countries.

The variation is affected by the international environment and facilitated by the domestic environment and government policy factors. International environment factors include processes such as globalization of information and communication technology (ICT), trade liberalization, multinational corporation (MNC) strategies, technical innovation, global competition, and e-commerce movements have contributed to many countries and industry sectors toward Internet and e-commerce adoption.

The domestic environment factors may constrain or enhance e-commerce evolutionary process and contribute to the diversity in e-commerce experiences across the countries, including growing income, infrastructure for ICT, consumer preferences, and the industrialization/deindustrialization. Government policies include liberalization of telecommunications and ICT markets, broadband policy, development of information infrastructure, investment in human capital, and regulations such as consumer protection and intellectual property rights protection. In addition the direct e-commerce law and provision have also contributed to the e-commerce as these provide adjustment regulatory upon e-commerce operations such as digital signature, privacy and security.

The difference in the domestic environments and national policies has created the unique pattern of e-commerce evolutionary process and different experiences in several countries. For instance, the different of consumer preferences in every country has affected different e-commerce business type. In addition the difference national policies such as legal arrangement for ICT, liberalization on telecommunication, and tax consideration have made e-commerce businesses respond in various ways. Therefore, this study attempts to investigate e-commerce experiences from selected countries (the USA, Germany, Japan and Indonesia) and to derive implications from their experiences. This study also tries to make proposals for a higher level of e-commerce in Indonesia based upon international comparative study. In

order to focus the investigation, the following research questions are addressed: What international, domestic environments and policy forces affect the diffusion of e-commerce? Which factors are drivers or enablers and which are barriers or inhibitors; and how do they influence e-commerce adoption?

Methodology and Book Structure

This study intends to analyze environmental and policy factors contributing to e-commerce evolution. A substantial portion of this analysis is based on the papers on e-commerce provided by Gibbs (2003) and Kraemer (2006) which intend to analyze e-commerce activities in major countries. The proposed framework identified the contributing factors for e-commerce diffusion as drivers or enablers as well as barriers or inhibitors, however the framework only posits until the adoption stage. In order to analyze the evolutionary process of e-commerce, some contributing factors beyond the framework should be considered as contributing factors for e-commerce evolution. Therefore, this study tries to extend the framework with additional factors which also responsible to e-commerce evolution. For instance, the framework did not mention international standardization, transportation infrastructure, and venture capital/business; indeed they are also contributing factors for e-commerce evolution, thus this study categorized them as contributing factors.

This study consists of four chapters. Chapter 1 focuses on literature review starting with definition of e-commerce based on some references, e-commerce types and e-commerce payment system. Chapter 2 covers the conceptual framework of environmental and policy factors shaping e-commerce diffusion. In addition the Chapter also proposes additional factors that responsible for e-commerce diffusion. Chapter 3 investigates the e-commerce evolutionary process and experiences in U.S.A, Germany, Japan and Indonesia. By using case study, the chapter investigates interdependence between the environmental and policy factors contributing to e-commerce diffusion in the selected countries. Finally, Chapter 4 ends with conclusion based on international comparison and proposals for e-commerce in Indonesia.

Those four countries are chosen for the following reasons, firstly, the U.S.A is the place where e-commerce was initiated and has best practices in e-commerce business. Secondly, Germany is predetermined to play an important role in the field of e-commerce due to its economic power and long tradition in industry sector. Thirdly, Japan is the most developed country in Asia and has important role in the economy, technology as well as e-commerce business. In addition Japan is the place where the Author is studying; therefore, it is important to understand the environmental and policy factors contribute the Japanese e-commerce evolutionary process. Lastly, Indonesia is the Author's country whereas e-commerce has been introduced since a decade ago, yet the development is still infancy. Recently, Indonesia has gained a new momentum in the e-commerce development with its

new Information and Electronic Transaction Law. The Law—legalized on March 25, 2008—is the first direct provision regarding e-commerce operation but only a little progress has been made. Indonesia as the fourth largest country is potential market for the future e-commerce business; therefore, it is crucial to learn from other countries' experiences.

Scope and Limitation

Since this paper is based on several case studies from different countries, there are some constraints; the major constraint is the number of selected countries and case studies, and; other obstacles are the limitation in accessing to some of the required data and the limitation in clarifying some ambiguous data/information. Therefore, there are some possible issues during the research that will not be covered in depth. Those matters will be recommended for future study.

CHAPTER I

BASIC CONCEPTS for E-COMMERCE

1.1. Definition of E-commerce

There are many different formal definitions of e-commerce since its advent either from scientific views or from organizational directives. Since it is still developing and transforming to the new form, a precise definition is difficult to provide. Indeed some scholars have defined and categorized e-commerce in different ways[1]. In this study the definition provided by Turban (2006) is adopted, because it represents the current e-commerce development. E-commerce definition provided by Turban (2006) is the process of buying, selling, or exchanging products, services, or information via computer networks. It includes activities such as servicing customer online, collaborating with business partners and exchanging business documents within an organization over the Internet or other private networks (Turban, 2006).

In addition, many associations and organization bodies also have directives upon e-commerce definitions such as followings;

1.1.1. Definition from United Nation Conference on Trade and Development (UNCTAD)[2]

In search of a working definition of E-commerce, UNCTAD considers two main basic concepts of e-commerce from description to implementation (operational) as well as new business models. At the stage of operational definition, e-commerce is defined as horizontal definition and vertical definition. The first one (horizontal definition) corresponds to the transactional aspects of ecommerce, whereas the second one (vertical definition) focuses on the various layers of requirements necessitated by the implementation of an e-commerce strategy.

The definition of e-commerce as new business models by UNCTAD is about doing business electronically. It is based on e-processing and transmission of data, text, sound and video. It implies many diverse activities such as e-trade of goods and services, online delivery of digital content, e-funds transfer, e-trade sharing, e-bills of landing, public procurement,

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[1] These include definitions by (1) Zwass, V., "Electronic commerce: structures and issues", Journal of Electronic Commerce, 1 (1) 3-23, 1996; (2) Whitely, D., "E-Commerce: Strategy, Technologies and Applications", 1998, McGraw Hill; (3) Gibbs, J., et al., "Environment and Policy Factors Shaping Global E-Commerce Diffusion: A Cross-Country Comparison", The Information Society, 19:1, 5 – 18, 2003; (4) Turban, E., et al., "Electronic Commerce: A Managerial Perspective", 2006, p.4 Prentice Hall

[2] This argument is mainly based on UNCTAD paper "Building Confidence, Electronic Commerce and Development", 2000.

direct consumer marketing, after sales services, etc. It involves products, services (information services, financial and legal services), health care, education, and virtual malls.

Table 1.1 The OECD definitions of e-commerce and WIIPS guidelines [3]

E-commerce transactions	OECD definitions	WPIIS guidelines for the interpretation of the definitions
BROAD definition	An electronic transaction is the sale or purchase of goods or services, whether between businesses, households, individuals, Governments and other public-private organizations, conducted over **computer-mediated networks.** The goods and services are ordered over those networks, but the payment and ultimate delivery of the good or service may be conducted on or offline.	**Include:** orders received or placed on any online application used in transactions such as Internet applications, EDI, Minitel or interactive telephone
NARROW definition	An Internet transaction is the sale or purchase of goods or services, whether between businesses, households, individuals, Governments and other public-private organizations, conducted over **the Internet**. The goods and services are ordered over those networks, but the payment and the ultimate delivery of the good or service may be conducted on or offline.	**Include**: orders received or placed on any Internet application used in transactions such as Web pages, Extranets and other applications that run over the Internet, such as EDI over the Internet, or over any other Web-enabled application regardless of how the Web is accessed (e.g. through a mobile or TV set). Exclude orders received or placed by telephone, facsimile or e-mail

Source: OECD, 2002

1.1.2. Definition from Organization for Economic Co-operation and Development (OECD)[4]

In April 2000, OECD member countries endorsed two definitions of e-commerce, based on narrower and broader definitions of the communications infrastructure. According to

[3] The OECD WPIIS met first in June 1997, as an ad hoc meeting held under the aegis of the newly created OECD ICCP (Information, Computer and Communications Policy) Statistical Panel. The status of "Working Group" was granted in 1999. WPIIS is composed of representatives from national statistical offices (NSO) of OECD member countries. Information society measurements have also been discussed in other forums, such as the UN Voorburg Group, a group that works on services statistics, or Eurostat. The OECD WPIIS, however, is the group that has advanced most the work on definitions, methods and model surveys and its recommendations are followed by NSO of many countries, including non-OECD members (UNCTAD, 2001, 2003).

[4] This argument is mainly based on OECD direction "Measuring the Information Economy, Paris, 2002

the OECD definitions, the method by which the order is placed or received, not the payment or the channel of delivery, determines whether the transaction is an Internet transaction (conducted over the Internet) or an electronic transaction (conducted over computer-mediated networks). To help navigate through this conceptual labyrinth, the OECD Working Party on Indicators for the Information Society (WPIIS) adopted a building blocks approach for interpreting the definitions of electronic commerce and encouraged member countries to take such guidelines into account when classifying the e-commerce businesses (see table 1.1).

1.1.3. Definition from the U.S. Department of Commerce (DOC)[5]

The definition of e-commerce was put forth by the U.S. Department of Commerce in its report titled *"Measuring Electronic Business: Definitions, Concepts, and Measurement Plans*". Electronic commerce is any transactions completed over a computer-mediated network that involves the transfer of ownership or rights to use goods or services. A transaction is an event occurring within selected e-business processes (e.g., buying and selling process). An ecommerce transaction is "completed" when agreement is reached between the buyer and seller to transfer the ownership or rights to use goods or services. This electronic agreement is the trigger for determining an e-commerce transaction, not the payment.

Based up on those various definitions given by some organizations, this study also adopts the e-commerce definition provided by OECD. Because many countries applied this definition in recent year for its acted as a reality check and had a major impact on policies and business strategies. In addition although OECD member countries have agreed on two definitions of e-commerce transactions and on some general guidelines for their interpretation, several issues remain open and continue to be discussed. Therefore the definitions and guidelines will be reviewed in light of their statistical feasibility[6].

1.2. Types of E-commerce

There are many different types of e-commerce which are classified based on the nature of the transactions found in the literatures[7]. Although e-commerce always involves at least two participants, and these participants can be of different nature depending on the pair involved, some very distinct type of e-commerce will take place. The main three categories of

[5] This argument is mainly based on U.S. Department of Commerce (DOC), "Measuring Electronic Business: Definitions, Concepts, and Measurement Plans", 2001

[6] OECD, "Measuring the Information Economy, Annex 4: The OECD Definitions of Internet and E-commerce Transactions", Paris, 2002

[7] See, (1) Simon. A and Shaffer. S, "Data Warehousing and Business Intelligence for E-Commerce", Morgan Kaufmann Publishers in early, 2001 (2) Bidgoli. H, "Electronic Commerce: Principle and Practice", Academia Press, 2002.

agents likely to be involved in such pairing are: business, individual and government. According to the participants, e-commerce can be categorized as follows:

1.2.1. Business to Consumer (B2C)[8]

The most popular model is B2C (business to consumer), which links a business with individual customers. B2C is a business model that stores or firms provide consumers with goods and services through websites with the Internet as their communication tool. This is the major model of e-commerce, which can be divided into C2C model and C2B model.

1.2.1.1. Consumer to Consumer (C2C)

Consumer-to-consumer (C2C) is a form of electronic commerce which involves the electronically-facilitated transactions between consumers through some third party. A common example is the online auction, where a consumer posts an item for sale and other consumers bid to purchase it; the third party generally charges a flat fee or commission. An online strategy of consumers dealing directly with consumers, businesses act as agents between consumers with goods and services to sell. Online auction site eBay is perhaps the most prominent online C2C Company, where consumers from across the globe sell their goods and services to other consumers. Other examples are Excite classifieds, Yahoo! Auctions.

1.2.1.2. Consumer to Business (C2B)

Consumer-to-business (C2B) describes a system where consumers use an online agent to look for a product or service that suits their needs. In addition, consumers (individuals) can name their price for various products or services, offer products and services to companies and the companies pay them. Priceline.com is a prime example of the C2B model. Other examples are ShopBot.com, AutobyTel.com

In this type of e-commerce, consumers get a choice of a wide variety of commodities and services, along with the opportunities to specify the range of the prices they can afford or are willing to pay for particular item. As result, it reduces the bargaining time, increases flexibility and creates ease at the point of sale for both the merchant and the consumer.

1.2.2. Business to Business (B2B)

Business-to-business (B2B) commerce is less in the public eye than B2C but is a rapidly growing segment of the Internet economy. In this model, businesses offer goods and services to other businesses over the Internet. B2B e-commerce has been used for quite a few

[8] Simon. A and Shaffer. S, "Data Warehousing and Business Intelligence for E-Commerce", Morgan Kaufmann Publishers in early, 2001

years and is more commonly known as EDI (electronic data interchange). In the past EDI was conducted on a direct link of some form between the two businesses where as today the most popular connection is the internet. For instance, Safetylogic.com provides corporations with an easy way to distribute safety materials to satellite plants and fill out Occupational Safety and Health Administration (OSHA) reports online. Other examples are Extensity.com, StaplesLink.com, Lexis-Nexis.

1.2.3. E-commerce Related to Government [9]

Three types of e-commerce which are related to government are G2C (government to citizen), B2G (business to government), and C2G (Citizen to Government).

1.2.3.1. Government to Citizen (G2C)

G2C provides citizens with state and local government's online information and services. In addition, businesses of all sizes have various opportunities to interact with the government. G2C is the online non-commercial interaction between local and central government and private individuals, rather than the commercial business sector B2G.

1.2.3.2. Business to Government (B2G)

B2G, a variant of the B2B model, creates a platform to exchange information and conducts business between companies and different levels of government (city, state, or country). Business -to-Government (B2G) actively drives e-transactions initiatives such as e-procurement and the development of an electronic marketplace for government purchases; and carry out government procurement tenders through electronic means for sale of goods and services.

1.2.3.3. Citizen to Government (C2G) [10]

The Citizen-to-Government provides the momentum to put public services online, in particular through the electronic service delivery for exchange of information and communication. The C2G deals with the government ability to conduct transactions with one or on behalf of its citizens over networked system. C2G operations allow each individual to engage in online transactions and manage data such as accounts, email, collaboration, taxes and benefits.

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[9] The argument is based on Fang. Z. "E-government in Digital Era: Concept, Practice and Development", International Journal of Computer, The Internet and Management, 2002.

[10] The argument is based on IBM, "Providing Highly Secure Access to Information Across Government organizations", 2004

1.2.4. Business to Employee (B2E)

B2E is used to describe a segment of the Internet marketplace that focuses on the relationship between business and employee. The B2E portal is a customized, personalized, ever-changing mix of news, resources, applications, and e-commerce options that becomes the desktop destination for everyone in an organization - and the primary vehicle by which people do their work. B2E becomes the starting point for the employees' online experience and enables employees to be more productive and efficient. It also enables companies to more effectively communicate with employees, reduce costs, and continue to expand online offerings to their employees[11].

1.2.5. Peer-to-Peer (P2P) E-commerce[12]

Peer-to-peer technology enables Internet users to share files and computer resources directly without having gone through a central web server. Since 1999, entrepreneurs and venture capitalists have attempted do adapt various aspect of peer-to-peer technology into peer-to-peer (P2P) e-commerce. To date there have been very few successful commercial application of P2P e-commerce with the notable exception of illegal downloading of copyrighted music.

One example is Napster.com, which was established to aid Internet users in finding and sharing online music files, was the most well known P2P e-commerce until it was put out of business in 2001 by a series of negative court decision.

1.2.6. Mobile Commerce (M-commerce)

Mobile commerce or M-commerce refers to the use of wireless digital devices to enable transaction on the web. M-commerce involves the use of wireless networks to connect cell phones, handheld devices such Blackberriers, and personal computers to the Web. Once connected, mobile consumers can conduct transactions, including stock trades, instore price comparisons, banking, travel reservations and more. Thus far, m-commerce is used most widely in Japan and Europe (especially in Scandinavia), where cell phones are more prevalent than in the United States.

1.3. E-commerce Payment Systems

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[11] Pricewaterhousecoopers (PWC) LLP, “Innovations in Organizational Transformation: Opportunities for Ontario Hospitals”, 2001

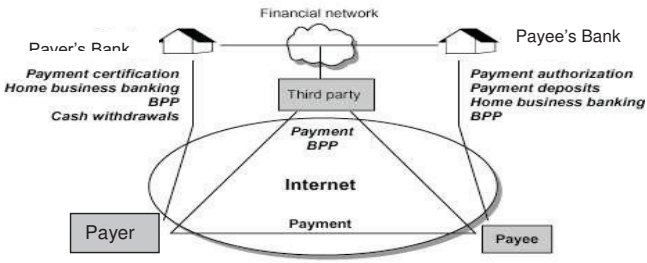
[12] The argument is mainly based on: Laudon. K and Traver. C, ”E-commerce: business, technology, society”, Pearson Education International, 2007

Initially the focus of any electronic commerce (C2B, B2C, B2B, G2C, B2G and B2E) is on selling goods to consumers through online channel. One of the main elements of an automated order processing system on e-commerce is the ability to accept some kind of payment electronically. In order to bring an on-line transaction to completion, payment must be fully integrated into the on-line dialogues. Just as the complexity of conventional commerce has led to the evolution of many different payment instruments, electronic commerce will also demand a range of electronic payment system[13].

Electronic payment systems have evolved from traditional payment systems, and consequently the two types of systems have much in common. Electronic payment systems are much more powerful, however, especially because of the advanced security techniques that have no analogs in traditional payment systems. An electronic payment system in general denotes any kind of network (e.g., Internet) service that includes the exchange of money for goods or services. The goods can be physical goods, such as books or CDs, or electronic goods, such as electronic documents, images, or music. Similarly, there are traditional services, such as hotel or flight booking, as well as electronic services, such as financial market analyses in electronic form. (Hassler, 2001)

A typical electronic payment system is shown in Figure 1.1. In order to participate in a particular electronic payment system, a customer and a merchant must be able to access the internet and must first register with the corresponding payment service provider. The provider runs a payment gateway that is reachable from both the public network (e.g., the Internet) and from a private inter-bank clearing network. The payment gateway serves as an intermediary between the traditional payment infrastructure and the electronic payment infrastructure. Another prerequisite is that the customer and the merchant each have a bank account at a bank that is connected to the clearing network.

Figure 1.1 Typical Electronic Payment Systems.



Source: adapted Hassler. V, p.69, 2001 and revised by Author
Note: BPP (Bill Presentation and Payment)

[13] O' Mahony et.al, "Electronic Payment System for E-commerce, 2nd Edition", Artech House, London, 2001

When purchasing goods or services, the customer (or payer) pays a certain amount of money to the merchant (or payee). Let us assume that the customer chooses to pay with his debit or credit card. Before supplying the ordered goods or services, the merchant asks the payment gateway to authorize the payer and his payment instrument (e.g., on the basis of his card number). The payment gateway contacts the payer's bank to perform the authorization check. If everything is fine, the required amount of money is withdrawn (or debited) from the customer's account and deposited in (or credited to) the merchant's account. This process represents the actual payment transaction. The payment gateway sends notification of the successful payment transaction to the merchant so that he can supply the ordered items to the customer. In some cases, especially when low-cost services are ordered, the items can be delivered before the actual payment authorization and transaction have been performed.

1.3.1. Electronic Payment Methods [14]

The main difference between e-commerce and traditional payment methods can be seen when evaluating the natures of the two media. Unlike traditional payment method, e-commerce encourages payment transactions which do not require physical funds (like cash) but instead involve only data transfer (credit/debit cards). Because the nature of e-commerce operation is varying, some electronic payment methods may be used by the e-commerce player as follows:

1.3.1.1. Off-line versus Online

An electronic payment system can be online or off-line. In an off-line system, a payer and a payee are online to each other during a payment transaction, but they have no electronic connection to their respective banks. In this scenario the payee has no possibility to request an authorization from the issuer bank (via the payment gateway), so he cannot be sure that he is really going to receive his money. Without an authorization, it is difficult to prevent a payer from spending more money than he actually possesses. An online system requires the online presence of an authorization server, which can be a part of the issuer or the acquirer bank. Clearly, an online system requires more communication, but it is more secure than off-line systems.

1.3.1.2. Debit versus Credit

In a credit based system (e.g., credit cards) the charges are posted to the payer's account. The payer later pays the accumulated amounts to the payment service. In a debit-

[14] This argument is mainly based on Hassler. V. "Security Fundamentals for E-commerce"., pp. 69-68., Artech House, Inc. 2001

based system (e.g., debit cards, checks) the payer's account is debited immediately, that is, as soon as the transaction is processed.

1.3.1.3. Macro versus Micro

An electronic payment system in which relatively large amounts of money can be exchanged is usually referred to as a *macro-payment* system. On the other hand, if a system is designed for small payments (e.g., up to 5 euros); it is called a *micro-payment* system. The order of magnitude plays a significant role in the design of a system and the decisions concerning its security policy. It makes no sense to implement expensive security protocols to protect, say, electronic coins of low value. In such a case it is more important to discourage or prevent large-scale attacks in which huge numbers of coins can be forged or stolen.

1.3.2. Electronic Payment Instruments

Electronic payment systems have introduced two new payment instruments: electronic money (also called digital money) and electronic checks. As their names imply, these do not represent a new paradigm, but are rather electronic representations of traditional payment instruments. However, in many respects, they are different from their predecessors. Common to all payment instruments is the fact that the actual flow of money takes place from the payer's account to the payee's account.

Payment instruments can in general be divided into two main groups: cash-like payment systems and check-like payment systems. In a cash-like system, the payer withdraws a certain amount of money (e.g., paper money, electronic money) from his account and uses that money whenever he want to make a payment. In a check-like system, the money stays in the payer's account until a purchase is made. The payer sends a payment order to the payee, on the basis of which the money will be withdrawn from the payer's account and deposited in the payee's account. The payment order can be a piece of paper (e.g., a bank-transfer slip) or an electronic document (e.g., an electronic check). The following sections give an overview of payment transactions involving different payment instruments according to Hassler (2001)[15].

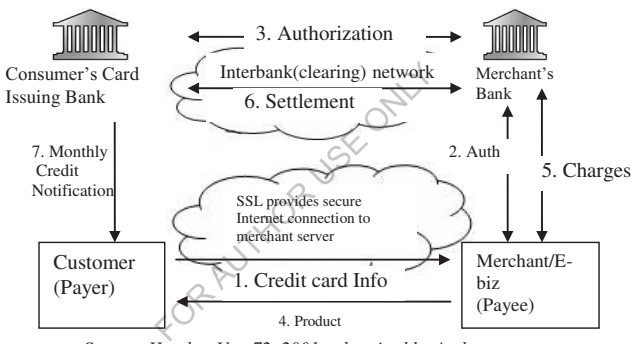
1.3.2.1. Credit Card

Credit cards, for example, are currently the most popular payment instrument in the Internet. Figure 1.2 illustrates a typical payment transaction with a credit card as the payment instrument. The customer gives his credit card information (i.e., issuer, expiry date, number) to the merchant (1). The merchant asks the acquirer bank for authorization (2). The acquirer

[15] See, Hassler, 2001

bank sends a message over the inter-bank network to the issuer bank asking for authorization (3). The issuer bank sends an authorization response (3). If the response is positive, the acquirer bank notifies the merchant that the charge has been approved. Now the merchant can send the ordered goods or services to the customer (4) and then present the charge (or a batch of charges representing several transactions) to the acquirer bank (5 up). The acquirer bank sends a settlement request to the issuer bank (6 to the left). The issuer bank places the money into an inter-bank settlement account (6 to the right) and charges the amount of sale to the customer's credit card account. At regular intervals (e.g., monthly) the issuer bank notifies the customer of the transactions and their accumulated charges (7). The customer then pays the charges to the bank by some other means (e.g., direct debit order, bank transfer, check). Meanwhile, the acquirer bank has withdrawn the amount of sale from the inter-bank settlement account and credited the merchant's account (5 down).

Figure 1.2. A credit card payment transaction.



Source: Hassler. V, p.72, 2001and revised by Author
Note: SSL (Secure Socket Layer)

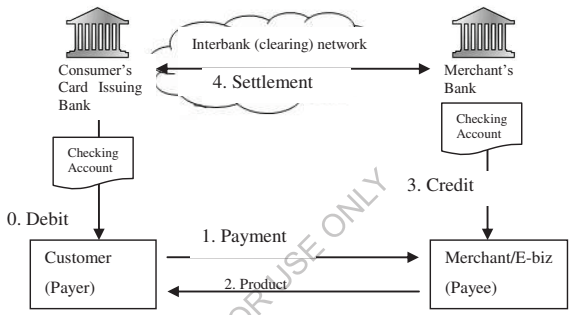
1.3.2.2. Electronic Money

Electronic money is the electronic representation of traditional money. A unit of electronic money is usually referred to as an electronic or digital coin. For the following discussion, the actual value of a digital coin in units of traditional money is irrelevant. Digital coins are "minted" (i.e., generated) by brokers. If a customer wants to buy digital coins, he contacts a broker, orders a certain amount of coins, and pays with "real" money. The customer can then make purchases from any merchant that accept the digital coins of that broker. Each merchant can redeem at the broker's the coins obtained from the customers. In other words, the broker takes back the coins and credits the merchant's account with "real" money.

Figure 1.3 illustrates a typical electronic money transaction. In this example the issuer bank can be the broker at the same time. The customer and the merchant must each have a current or checking account. The checking account is necessary as a "transition" form

between the real money and the electronic money, at least as long as the electronic money is not internationally recognized as a currency. When the customer buys digital coins, his checking account is debited (0). Now he can use the digital coins to purchase in the Internet (1). Since digital coins are often used to buy low-value services or goods, the merchant usually fills the customer's order before or even without asking for any kind of payment authorization. The merchant then sends a redemption request to the acquirer bank (3). By using an inter-bank settlement mechanism similar to that described in Section 1.3.2.1, the acquirer bank redeems the coins at the issuer bank (4) and credits the merchant's account with the equivalent amount of "real" money.

Figure 1.3 An electronic money payment transaction.



Source: Hassler. V, p.73, 2001 and revised by Author

1.3.2.3. Electronic Check

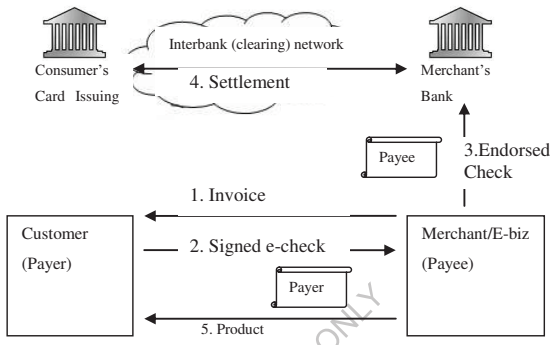
An electronic check is an electronic document containing the following data:

- Check number;
- Payer's name;
- Payer's account number and bank name;
- Payee's name;
- Amount to be paid;
- Currency unit used;
- Expiration date;
- Payer's electronic signature;
- Payee's electronic endorsement.

A typical payment transaction involving electronic checks is shown in Figure 1.4. The customer orders some goods or services from the merchant, whereupon the merchant sends an electronic invoice to the customer (1). As payment, the customer sends an electronically signed electronic check (2). (Electronic signature is a general term that includes, among other things, digital signatures based on public-key cryptography.) As with paper checks, the

merchant is supposed to endorse the check (i.e., sign it on the back) (3). (Electronic endorsement is also a kind of electronic signature.) The issuer and the acquirer banks see that the amount of sale is actually withdrawn from the customer's account and credited to the merchant's account (4). After receiving the check from the customer, the merchant can ship the goods or deliver the services ordered.

Figure 1.4 An electronic check payment transaction.



Source: Hassler. V, p.75, 2001and revised by Author

1.3.2.4. Electronic Wallet

Electronic wallets are stored-value software or hardware devices. They can be loaded with specific value either by increasing a currency counter or by storing bit strings representing electronic coins. The current technology trend is to produce electronic wallets in the smart card technology. In the electronic payment system developed in the CAFE project (Conditional Access for Europe, funded under the European Community's ESPRIT program), the electronic wallet can be either in the form of a small portable computer with an internal power source (Γ-wallet) or in the form of a smart card (α-wallet). Electronic money can be loaded into the wallets online and used for payments at point-of-sale (POS) terminals.

1.3.2.5. Smart Card

A smart card is a plastic card with an embedded microprocessor and memory. Similar to electronic wallets, it introduces an additional piece of hardware and also a communication node into the payment system. From the point of view of payment semantics, smart cards represent a technology, not a new payment instrument. In other words, a smart card can be used as either a credit card or storage of electronic money or an electronic check device, or a combination of these.

For several years now, smart card-based electronic wallets, which are actually reload-able stored-value (prepaid) cards, have been in use, mainly for small payments. The wallet

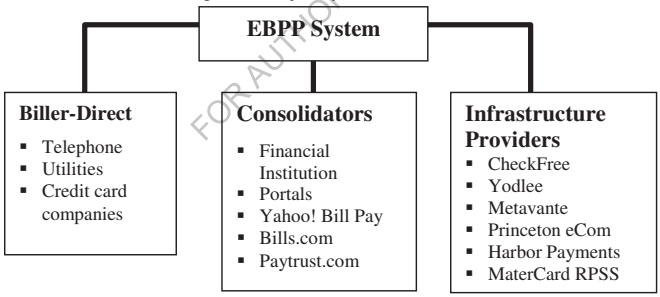
owner's account is debited before any purchases are made. The owner can load the card at a machine such as an ATM. Shops accepting such payments must be equipped with a corresponding card reader at the cash register. Examples are the Austrian Quick1 and Belgian Proton2 systems.

Another example of the use of smart cards in e-commerce is SET (Secure Electronic Transactions), an open specification for secure credit card transactions over open networks. In the current version of SET, a customer (i.e., cardholder) needs a SET cardholder application installed on, for example, his home PC. A set of already approved SET extensions introduces a smart card that can communicate with the cardholder application. Since many credit cards are already made with smart card technology, in this way they will be easily integrated into SET.

1.3.2.6. Electronic Billing Presentment and Payment (EBPP) System [16]

EBPP systems are systems that enable the online delivery and payment of monthly bills. EBPP services allow consumers to view bills electronically and pay them trough electronic funds transfer from bank or credit card accounts. Electronic payment systems reduce considerably the cost associated with paying bills, because normally the bills are issued every month and it is costly from time to time.

Figure 1.5. Major Payers in the EBPP Market Place



Source: Adapted from Laudon, 2007p.342

Figure 1.5 shows the major players in EBPP marketplace, the two main competing businesses are biller-direct and consolidator. The bill-direct system was originally created by utility companies that send million of bills each month, the purpose is to make easier customer to pay utility routinely. The second model is consolidator model, in which third party such as financial institutions, portals; aggregates all bills for consumers and ideally permit one stop bill payment (pay anyone). Supporting these two primary business models are

[16] The argument is mainly based on: Laudon. K And Traver. C, 2007, "E-commerce: Business Technology Society", 3rd edition Pearson

infrastructure providers such as Harbor Payments, Princeton eCom, Yodlee that provide the software to create EBPP system or handle billing and payment collection for the biller.

1.3.2.7. B2B Payment System

The B2B payments market is actually much larger than the B2C market because of the larger size of transaction among business and the frequency of transaction. The B2B payment system (sometimes referred to as electronic invoice presentment and payment (EIPP) system or just electronic invoicing and payment (EIP)) is much more complex than B2C. Table 1.2 describes some of the features of B2B payment systems.

Table 1.2 Key Features of B2B Payment System

Feature	Description
Credit verification and guarantee	Provides an assessment of creditworthiness and payment guarantee
Escrow service	Helps assure that both parties will perform their obligations
Nonrepudiation	Ensures that purchases are not reversible; allows unknown parties to trade with one another more confidently
Funds collection for seller	Handles fund transfers, remittal, and storage
Financing	Provides "float" or variable payment delay to buyers in return for a fee
Integration with others business documents	Integrates purchase orders, invoices, shipping documents and payments
Fraud detection	Helps seller trade more securely
Accounting	Provides account summary and invoice detail
Dispute handling	Provides a method for adjudicating disputes
Integration to back-end corporate systems	Links payment systems with shipping, accounting, and other corporate system
Online bill presentment	Has the ability to generate and present electronic bill
Multiple payment option	Enables buyer to pay with credit card, debit card, ACH check, electronic fund transfer, or other means

Source: Adopted from Laudon, 2007, p.343

There are three major types of players in the B2B payment systems market: companies that hope to replace traditional banks, financial institutions hopping to extend to the B2B marketplace, and credit card companies. It is important to note that no system on the market today yet provides all of the features listed in the table 1.2 in one package.

1.3.2.8. Mobile Payment [17]

Mobile payment (m-payment) is an electronic payment done using mobile devices. One of the main uses of m-payment is in mobile commerce (m-commerce). M-commerce is the buying and selling of goods and services through mobile devices. These mobile devices include mobile phones, Personal Digital Assistants (PDAs), smart phones, and laptops. M-commerce is actually a subset of e-commerce carried out over wireless networks. SMS (Short

[17] The argument is mainly based on Tadesse. W and Kidan. T, "e-Payment: Challenges and Opportunities in Ethiopia", United Nation, Economic Commission for Africa, 2005

Message Service), WAP (Wireless Application Protocol) and Bluetooth application are the technology that enabled m-commerce.

M-payment is used for online payments and for POS (Point of Sale) transactions. Online payment is used for the purchase of digital goods such as mobile phone entertainment (ringtones, wallpaper and so on). Generally, there are three types of m-payments. The first is based on the billing system of the network operator. This method lets the user bill their purchase to their monthly carrier bill or deduct it from their pre-paid deposit. M-Pay Bill service from Vodafone and Mobilepay by Sonera are instance for this type of payment.

The second type of m-payment to uses the credit card over a wireless network. The payment mechanism in this type of payment is all about secure transmission of credit card data to the credit card company. Credit card data is stored securely on the mobile phone. This is done either using a dual slot mobile phone or by employing a dual chip mobile phone. EMPS –Electronic Mobile Payment System by MeritaNordbanken, Nokia and Visa is an instance of dual chip alternative. In dual chip mobile phone credit card is stored securely on the mobile phone.

In the third type of m-payment account is held at the bank. Transactions such as transferring money between accounts and paying bills can be performed using this type of payment system. Examples are Paybox, and MobiPay. The existing banking infrastructure and technology are used for this type of payment. As compared with other e-payment systems, m-payment has got some advantages such as ubiquity, accessibility and convenience.

1.3.3. Electronic Payment Security Issues

The availability of electronic payment system as well as the safety electronic transactions is the key tache for realization of e-commerce. It is essential to ensure the safety of electronic payment system from the security problem that might occur. In addition this safety must automatically overcome the security problems in the “traditional” payment system. The security problems of traditional payment systems are well known:

a. Money can be counterfeited;
b. Signatures can be forged;
c. Checks can bounce.
d. Electronic payment systems have the same problems as traditional systems, and more:
e. Digital documents can be copied perfectly and arbitrarily often;
f. Digital signatures can be produced by anybody who knows the private key;
g. A payer’s identity can be associated with every payment transaction.

Obviously, without additional security measures, widespread e-commerce is not viable. A properly designed electronic payment system can, however, provide better security

than traditional payment systems, in addition to flexibility of use. Generally, in an electronic payment system, three types of adversaries can be encountered:

a. Outsiders eavesdropping on the communication line and misusing the collected data;
b. Active attackers sending forged messages to authorized payment system participants in order either to prevent the system from functioning or to steal the assets exchanged;
c. Dishonest payment system participants trying to obtain and misuse payment transaction data that they are not authorized to see or use.

The basic security requirements for electronic payment systems can be summarized as

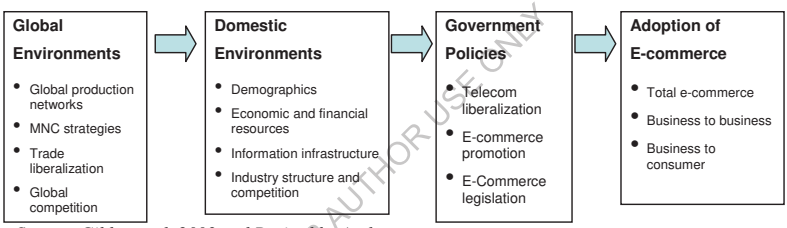
a. Payment authentication implies that both payers and payees must prove their payment identities, which are not necessarily identical to their true identities. If no anonymity is required, one of the authentication mechanisms may be used to satisfy this requirement. Authentication does not necessarily imply that a payer's identity is revealed. If anonymity is required, some special authentication mechanisms are needed.
b. Payment integrity requires that payment transaction data cannot be modifiable by unauthorized principals. Payment transaction data includes the payer's identity, the payee's identity, and the content of the purchase, the amount, and possibly other information. For this purpose an integrity mechanism from the area of information security may be employed.
c. Payment authorization ensures that no money can be taken from a customer's account or smart card without his explicit permission. It also means that the explicitly allowed amount can be withdrawn by the authorized principal only.
d. Payment confidentiality covers confidentiality of one or more pieces of payment transaction data. In the simplest case it can be achieved by using one of the communication confidentiality mechanisms. In some cases, however, it is required that different pieces of the transaction data are kept secret from different payment system participants. Such requirements can be satisfied by certain specially tailored payment security mechanisms.

CHAPTER II

ENVIRONMENTAL AND POLICY FACTORS CONTRIBUTING to E-COMMERCE

The study intends to analyze environmental and policy factors contributing to e-commerce evolutionary process. A substantial portion of this analysis is based on the conceptual framework of e-commerce diffusion study provided by Gibbs et al (2003)[18]. According to Gibbs et al (2003), the determinants of e-commerce diffusion were conceptualized as drivers or enablers and barriers or inhibitors. Drivers propel e-commerce growth whereas enablers facilitate its growth. Barriers prevent or limit e-commerce growth whereas inhibitors slow its growth. The first part of three sections (section 2.1 to 2.3) will summarize the environmental and policy factors shaping e-commerce diffusion based on study by Gibbs et al (2003) while in the fourth section (2.4) will show author's view on contributing factor to e-commerce evolution due to some uncovered factors in the first part.

Figure 2.1 Conceptual Framework.



Source: Gibbs, et al. 2003 and Revised by Author

The framework posits that the adoption of e-commerce is driven by forces in the global environment that are intermediated by national environmental and national policy factors (Figure 2.1). At the global environment level, processes such as globalization of production and markets, multinational corporation (MNC) strategies, open trade regimes, and global competition more broadly are driving all countries and industry sectors toward the adoption of e-commerce.

At the national level, there are two factors that influence e-commerce adoption. The first is the national environment, including a country's demographics, economic and financial resources, information infrastructure, industry structure and competition, organizational environment, and social and cultural factors such as consumer preferences. The second is national policy, including liberalization of telecommunications and ICT markets, government promotion initiatives for e-commerce and CIT in general, and e-commerce legislation.

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[18] Gibbs, et al (2003), "Environment and Policy Factors Shaping Global E-Commerce Diffusion: A Cross-Country Comparison", The Information Society, 19:1, pp.5 – 18.

This section will explore the factors in the framework which responsible or contribute to e-commerce diffusion:

2.1. Global Environments

Several global trends have been identified in the cases as common factors creating pressure for e-commerce adoption by all countries. These trends focus on forces that promote stronger economic linkages across countries, including the rise of global production networks, the increased influence of multinational corporations, the creation of open trade regimes, and increasing levels of global competition faced by firms in all countries.

2.1.1. Global Production Network

Production networks in industries such as automobiles, electronics, and textiles are being extended across national borders to become increasingly global. Participation in global production networks is an important driver of e-commerce diffusion, as these networks rely heavily on ICT and e-commerce for coordination. Some countries have domestic firms that participate in these global networks as suppliers or subcontractors (e.g., Taiwan) or as bases for subsidiaries of multinational corporations (e.g., Singapore), while others are coordinators of such networks (e.g., the United States and Japan). One can be seen from the expanding phenomenon of global production network was the strategy of Dell Computer on the direct customer relationship across the world[19]. Although the roles differ, the integration of countries into global production networks often involves the adoption of B2B e-commerce by firms in these countries as a condition for participating in such networks.

2.1.2. Multinational Corporation (MNC) Strategies

Multinational corporations (MNCs) drive the process of e-commerce diffusion across global supply chains. MNCs are mentioned specifically as drivers of e-commerce; in addition MNCs bring global competition to local markets and provide links to global production networks, as well as transferring technology and knowledge to local firms on how to conduct e-commerce.

2.1.3. Trade Liberalization

Openness to external trade and investment is expected to enable e-commerce diffusion, because openness brings foreign investment. MNCs bring ICT-based business practices and ICT systems, and local firms adopt these practices and systems to participate and/or compete with the MNCs. Pressures to liberalize or deregulate national markets are

[19] See, (1) Kraemer et al., "Refining and Extending the Business Model with Information Technology: Dell Computer Corporation", CRITO, 2000; (2) Kraemer et al., (2001) (3) Kraemer et al.,,(2002)

driven by transnational organizations such as the World Trade Organization (WTO) and Organization for Economic Cooperation and Development (OECD), as well as regional associations such as the European Union (EU) and North American Free Trade Agreement (NAFTA). The countries with a greater degree of trade openness and liberalization, such as Singapore and the United States, are characterized by greater e-commerce diffusion.

2.1.4. Global Competition

Global competition is perhaps the most significant force driving e-commerce development across countries. A country's integration in global production networks, the presence of MNCs, and the extent of trade liberalization are all factors that increase the level of global competition and therefore the pressure for countries to adopt e-commerce as a mean of reducing costs and/or expanding markets.

In summary, global factors by definition potentially influence e-commerce adoption in all countries. However, they appear to have more prominence in shaping e-commerce diffusion in countries that are part of open trade regimes, have a high proportion of MNCs, have more firms that are part of global production networks, and have more firms engaged in global competition. While these factors represent global pressures for countries to adopt e-commerce, their influence will depend upon characteristics of each country. Some countries such as Singapore, which has historically been an entrepot in East Asia, are more trade oriented, and therefore more open, MNC friendly and part of global networks. Others such as Mexico, which is a supplier to global MNCs, are heavily engaged in production networks by virtue of trade liberalization and location adjacent to a very large market. China, on the other hand, has enormous market potential and trade regimes that require MNCs to set up production to access their markets. Germany and the United States, which have high wages, face competitive pressure to reduce labor costs.

2.2. Domestic Environments

The domestic environment, which is one of the key features of the selection environment of firms and consumers that affect innovation outcomes, includes a country's demographics, economic and financial resources, information infrastructure, industry structure, organizational environment, and consumer preferences that are mainly enablers of e-commerce adoption.

2.2.1. Demographics

Country's demographics are likely to act as enablers or inhibitors for e-commerce development,[20] as they relate to market size and concentration, consumer needs, and ease of access to technology. The densely populated nations enjoy strong ICT infrastructures, whereas large countries with low population density, suffer from underdeveloped infrastructures, plus distribution and delivery problems. Urban density may enable wired cities; however, high density may also lead to strong traditional retail networks that compete with online purchasing. The larger, wealthier countries seem to be most favorable to both e-commerce supply and demand.

The presence of an ICT labor force emerges as another enabling condition for e-commerce, in that it provides needed skills for ICT production and use. General ICT literacy enables access to both B2C and B2B e-commerce, and is influenced by demographic factors such as income, education, age, and gender. The distribution of wealth is a major barrier or limit to ICT usage. A more equal distribution of wealth is conducive to e-commerce in that a greater proportion of the population is able to participate in e-commerce through access to ICT.

2.2.2. Economic and Financial Resources

Wealth has already been mentioned as a key factor enabling e-commerce adoption as it determines consumer purchasing power. The size of the economy and the wealth of the population is probably a strong factor affecting the development of e-commerce, although there is no causal data to prove this. The GDP is one of tools that can indicate the size of economics and the macro economics situation of the nations. Furthermore, the wealth of the country is probably an enabler of e-commerce. Substantial disposable income provides attractive opportunities for innovators in B2C marketing efforts, and the strength of the economy on the consumption side is mirrored on the production side, opening opportunities for B2B e-commerce.

2.2.3. Information Infrastructure

A widely available and affordable information infrastructure is another important enabler of e-commerce diffusion. Availability includes both the extent of coverage and the range of technologies in use. High penetration of multiple technologies (teledensity, wireless, Internet, broadband, and personal computers [PCs]) enables e-commerce in that several channels are available for conducting it. Availability of ICT tends to be higher in wealthy, smaller, densely populated countries.

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[20] See also, Ho. S et al., "A Growth Theory Perspective on the International Diffusion of E – commerce", pp.61 ICEC'05, August 15–17, 2005, Xi'an, China.

Rapid growth in infrastructure might also be an enabler, as suggested by trends for teledensity and wireless growth. [21] The explosion of the Internet is evident the rapid growth information infrastructure. The high cost of Internet access can be an inhibitor to ecommerce diffusion. High costs of Internet access limit the amount of time consumers use the Web for information or purchases.

2.2.4. Industry Structure and Competition

Industry structure and industry concentration might affect e-commerce development, and there is speculation about how this might occur. Some claim that more concentrated industries have an e-commerce advantage due to economies of scale and scope, and the ability to build e-commerce on the back of already large production and distribution capacity. Others argue that smaller firms have an advantage in e-commerce due to their flexibility and the opportunity to enter the markets at a relatively low cost, previously accessible only to large firms.

Firm size is another factor identified in the cases. Large domestic firms tend to be leaders in adopting e-commerce, as they possess the ICT resources (technology, financial, and human) needed for e-commerce and can leverage e-commerce investments over a large revenue base. Although large firms are often the dominant players in online transactions, they make up a small percentage of the labor force in many countries. The dominance of small and medium-sized enterprises (SMEs) poses a structural inhibitor to e-commerce, since such firms often lack of the financial and human resources for ICT. In certain cases, SMEs may have advantages such as being more flexible and innovative and able to adapt to organizational changes required by e-commerce than large firms. However, for the most part SMEs are mentioned as an inhibitor to the spread of e-commerce due to their lack of technological expertise and lack of funds to implement e-commerce solutions.

Another characteristic of industry structure that may act as an inhibitor to e-commerce is the existence of strong traditional retail networks. While such outlets compete with online commerce, they might also encourage e-commerce, because such retail networks are located in urban areas with concentrated economic activity and high Internet usage, and they might adopt "click and mortar" strategies of integrating their physical and virtual infrastructures for competitive advantage. An example is Seven-Eleven's "7dream.com" service in Japan, which allows customers to place orders online and then pick them up and make payment at a local store. This suggests that e-commerce will be better suited as a complement to, rather than a substitute for, traditional brick and mortar retail outlets.

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[21] Zwass, 1999; Wolcott, et. al. 2001; Travica, 2002 have looked at infrastructure as he primary diffusion factors.

2.2.5. Organizational Environment

The organizational environment impacts both B2B and B2C e-commerce through several factors. The strongest driver of e-commerce is the near-universal desire of businesses to extend their markets, reach new markets, protect existing markets, or gain advantage over their competitors[22]. Firms view e-commerce as an additional channel for doing business, as a means of reducing cost, as a vehicle for improving operational performance, and/or as a whole new platform for doing business with great prospects for achieving these gains.

A related organizational aspect facilitating e-commerce is the existence of an entrepreneurial business culture. The organizational and legal environment in the United States and Taiwan, for example, encourages entrepreneurial and innovative business cultures, for example, by making bankruptcy financially survivable so failed entrepreneurs have another chance to try again without being stigmatized by failure. The lack of entrepreneurial support is evident in Japan, Singapore, and Germany. For example, Japanese financial institutions are reluctant to fund entrepreneurial startups through venture capital or equity. Cultural factors also shape entrepreneurship. The Chinese saying "It is better to be the head of a chicken than the tail of an ox" captures its entrepreneurial culture (Dedrick & Kraemer, 1998), while the Japanese proverb "The nail that sticks up gets pounded down" reflects pressure for conformity over entrepreneurship.

In many countries corporate culture is an inhibitor to e-commerce and ICT more broadly. In Asian countries, such as Taiwan, personal relationships are important in doing business, and anonymous online relationships threaten to undermine these established interpersonal networks. In highly unionized countries, such as Denmark, e-procurement and automation of public services are perceived as a threat to job security by government and public officials. In most countries organizational readiness for e-commerce is still restricted by high perceived costs of ICT, security concerns, and lack of integration of information systems with business partners.

2.2.6. Consumer Preferences

B2C e-commerce is driven by consumer desires for valuable and useful content, convenience, lifestyle enhancements, and greater product and service selection. It is meant that lack in expertise is a major inhibitor to greater diffusion of B2C e-commerce. High acceptance of ICT and the Internet is a key enabler of B2C. "Internet fever" has caught on internationally and has generated high hopes and expectations for positive economic and

[22] See also Kraemer. K, et al., " Dell Computer: Using E-commerce To Support the Virtual Company ", CRITO, 2001

social impacts. But inhibitors similar to those in business culture are evident among consumers as well.

Consumers have significant reservations about purchasing online, which stem from lack of trust in business practices, privacy/security concerns regarding credit card and other personal information, resistance to using credit cards, and preferences for in-store shopping and inspection of products. These concerns are particularly acute in countries where no legal consumer protection exists and buyers and sellers have no recourse for faulty products or negligent payment. For example, the life content of products, transactions security, price, vendor quality, ICT education and Internet usage significantly affect the initial willingness of Singaporeans to e-shop over the Internet[23]. Language is an inhibitor among non-English-speaking consumers due to the prevalence of English content on the web, particularly in Asia where the older generation lacks knowledge of English and Western written characters. Beyond language, preferences for local content (even among those who speak English) are evident across countries. As the Web becomes increasingly multilingual and incorporates more local content, consumers are likely to participate more in online commerce.

2.3. Government Policies

In addition, to the features of the domestic environments, national policies shape technological diffusion and e-commerce diffusion in particular. Key policy factors include liberalization of telecommunications, government promotion of e-commerce and ICT more broadly, and specific legislation passed on e-commerce and ICT.

2.3.1. Telecom Liberalization

Market liberalization enables e-commerce by opening up markets to allow for competition that leads to higher quality products and services and lower prices. Firms in competitive markets are motivated to adopt e-commerce technologies in order to enhance productivity and provide better services. Telecommunications liberalization, in particular, encourages ICT and Internet diffusion by making rates more affordable and giving consumers a wider selection of services and options. Liberalization is taking place in many countries, although each country has liberalized in different ways and to different degrees.

2.3.2. E-commerce Promotion

Initiatives to promote e-procurement and e-government have been established in most countries and are direct drivers of e-commerce between governments and with businesses that

[23] See, Liao. Z, Cheung. T, "Internet-based e-shopping and consumer attitudes: an empirical study", Information & Management Volume 38, Issue 5, April 2001

interact with government as sellers or applicants for services (regulatory approval, permits, and licenses). They contribute to total e-commerce revenues, pave the way for private-sector e-commerce initiatives, and build up the e-commerce services industry, thereby fuelinge-commerce evolution.

Government and industry promotion is mainly an enabler of e-commerce. New leaders and governments have been instrumental in mobilizing ICT initiatives and promotion: for example, the Clinton/Gore administration in the United States strongly pushed the Internet, the term "Fox factor"[24] (after President Vicente Fox) had been coined to describe the Internet fervor in Mexico that has prompted public initiatives such as the eMexico program[25], and France's new government elected in 1997 shifted the country to an ICT focus that embraced the Internet. Industry associations, especially in the ICT industry, also have been strong promoters of e-commerce in countries such as Denmark, Japan, Mexico, and the United States—sometimes in partnership with government. Government and industry promotion takes various forms from country to country, but the most common areas are promotion of ICT and e-commerce in businesses, especially SMEs, by providing them with technical support, training, and funding for ICT use.

2.3.3. E-commerce Legislation

At this point, none of the countries have developed comprehensive legislation regarding e-commerce. Countries have focused on different issues, but the key areas have been legislation on digital signatures, privacy, consumer protection, copyright and intellectual property, and content regulation (Table 2.1). The table shows all countries except China have passed laws regarding recognition of digital signatures as legally binding. Country-specific legislation tends to reflect cultural values. For example, France and Germany have passed privacy and consumer protection laws, reflecting an emphasis on individual rights. China and Singapore, on the other hand, have focused on content regulation, reflecting a value on social control. Internet taxation is not an issue in most countries, because e-commerce is small, but could be a major enabler or inhibitor in the future. The impact of e-commerce legislation remains to be seen. For example, despite the implementation of legislation in the United States recognizing electronic signatures in 2000[26], e-signatures are not yet catching on.

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[24] It refers to the social and political momentum generated in the nation when Vicente Fox won the presidential election in July 2000 and particularly since he took office in December 2000 and began to form his overtly pro-business administration.

[25] Palacios. J, "Globalization and E-Commerce: Diffusion and Impacts in Mexico", CRITO 2003

[26] U.S Federal Law, Electronic Signatures In Global And National Commerce Act, 2000

In summary, all of the foregoing national policies were found to have influence in at least some of the countries. However, market and telecommunications liberalization seem to be significant enablers, because they drive down costs of access and use and increase infrastructure availability. Government legislation and promotion could be important enablers or inhibitors but do not appear to have much role currently. Promotion policies seem to be more important than e-commerce legislation per se, as several countries noted that e-commerce is taking place without specific legislation. However, many of the cases indicated that lacking trust, privacy, and financial safeguards were inhibitors to consumer engagement with e-commerce, and lack of legislation might be hampering the growth of e-commerce.

Table 2.1. E-commerce legislation (laws/amendments)

	France	Denmark	Germany	U.S.A	Brazil	Mexico	China	Japan	Singapore	Taiwan
Digital Signature	X	X	X[a]	X	X	X		X	X	X
Privacy	X		X[a]	X				X		X
Consumer Protection	X		X[a]	X		X		X		
Copyright			X[a]	X				X	X	X
Content Regulation			X[a]	X[b]			X	X	X	
Taxation			X[a]	X					X	

Source: Adapted form Gibbs (2003) and revised by Author
Note: X, country has passed legislation
[a] *EU Legislation*
[b] *Overturned by courts.*

2.4. Environmental and Policy Factors Responsible for E-commerce

The proposed framework identified the contributing factors for e-commerce diffusion as drivers or enablers as well as barriers or inhibitors, however the framework only posits until the adoption stage. The framework proposed by Gibbs did not cover the contributing factor to e-commerce evolutionary process. Since this research tries to investigate the e-commerce evolution in selected countries, the framework should be extended.

In order to analyze the evolutionary process of e-commerce, some potential factors beyond the framework should be considered as contributing factors for e-commerce evolution. Therefore, this study tries to extend the framework with additional factors which also responsible to e-commerce evolution. For instance, the framework did not mention international standardization, transportation infrastructure, and venture capital/business; indeed they are also contributing factors for e-commerce evolution, thus this study categorized them as contributing factors. In addition, the framework did not mention whether the factors have contributed to direct or indirect diffusion among consumers, firms or national level and It is important to know the impact the those entities. Table 2.2 summarized the contributing factors for e-commerce evolution.

Table 2.2. Factors Contributing to e-commerce

Framework for E-commerce Evolution		Factors Contributing to E-commerce			
		Driver	**Enabler**	**Barrier**	**Inhibitor**
Environment	**International**	Globalization, Global production network; global market; technical innovation; e-commerce movement; MNC strategies; pressure for cost reduction; International standardization	Trade liberalization; international standardization; Opening of economy; market liberalization; Government promotion and investment; Foreign investment	Global economy crisis; International fraudulent (cyber crime)	Digital divide; intellectual property issues; global security issues
	Domestic	Wealth; industry structure; information infrastructure; Consumer desire for convenience and great product/service selection; urbanization; high Internet and PC penetration; venture capital availability; credit card penetration; businesses desire to reach new market and protect it.	Business practices; Education level; Consumer purchasing power; Rapid Internet diffusion: high ICT literacy, strong ICT Infrastructure; human capital; ICT investment; firm size, industry structure and concentration	Lack of Infrastructure; Business environment and culture: risk; difficulty changing organizational; lack of resources and skills; Lack of management on small business; inequality in socio economic level	National culture: lack of innovation; Limited scope of e-commerce; Language differences; lack of delivery system, geographic characteristic; traditional retailing, lack useful content, lack security and privacy; cash based community
Government Policy		Telecommunication liberalization; Broadband deregulation policy; e-government initiative	legal government and regulatory on e-commerce provision (digital signature, tax); Government procurement	Political concerns and instability, short-term focus;	tax system; Lack of customer service; Lack of online payment mechanisms; telecommunication monopoly

Source: Made by Author

CHAPTER III

E-COMMERCE EVOLUTIONARY PROCESS in SELECTED COUNTRIES

E-commerce has achieved steady growth in the global environment; nevertheless the diffusion of e-commerce across countries have varied depend upon the national environments and government policies. The e-commerce market is expanding rapidly in developed countries such as USA, Germany, Japan, and Canada.[27] It is reported that in the ASEAN region, where most of the members are developing economies, more efforts have been made to catch up with these advanced countries[28]. So far only Singapore has been very successful.

There is a clear reason why Singapore has been more successful. Singapore with its strategic location in the international trade has been a popular entreport centre. Entreport trade made up 75% of Singapore's income in 2007. Ships from other countries carried goods into the Singapore port and carried out them to other places. This opportunity has put Singapore ahead of the other ASEAN countries, because Singapore has enjoyed economic progress in the most international atmosphere. The international trading sector constituted 60% of the GDP (US$222.7 billion) in 2007[29] and thus Singapore has availed itself of many opportunities in adopting e-commerce as part of its international activities.

The geographical advantage has also let Singapore to many Multinational Corporation's (MNC) channels and to much greater opportunities in the global economy, compared with other ASEAN countries. Since the MNCs have evolved e-commerce especially in the distribution channel, their subsidiary companies in Singapore have followed the same way. Especially in the B2B e-commerce establishment, Singapore has had more advantages, compared with ASEAN countries since it is the Asian center of international businesses.

The domestic environments of Singapore are also favorable for e-commerce evolution, as Singapore has a high degree of ICT penetration, and advanced financial services with many skilled workers and policies support. By contrast, the ASEAN4 (Indonesia, Malaysia, Thailand and the Philippines) still face many domestic obstacles, which deter development and evolution of e-commerce. Recently, however, Malaysia and Thailand have emerged more visibly ahead of Indonesia, the Philippines and other ASEAN member countries. Meanwhile, Indonesia and the Philippines, whose GDP per capita is lower than Malaysian and Thailand,

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[27] See, BEA (2008) and Researchmarkets.com (2008), "Asia-Pacific B2C E-Commerce".

[28] Reports include: (1) The National Office for the Information Economy, 7 March 2005; (2) eCommerce B2B Report 2004, eMarketer

[29] Singapore Department of Statistics (2008), :Singapore in Figures 2008".

the ICT penetration and the potential e-commerce growth is limited, because the cost of owning PC and Internet connection is unaffordable.

This chapter tries to explore e-commerce experiences in advanced countries (USA, Germany and Japan) and picks up Indonesia as a catching up country which needs lessons from other countries.

3.1. US Experiences

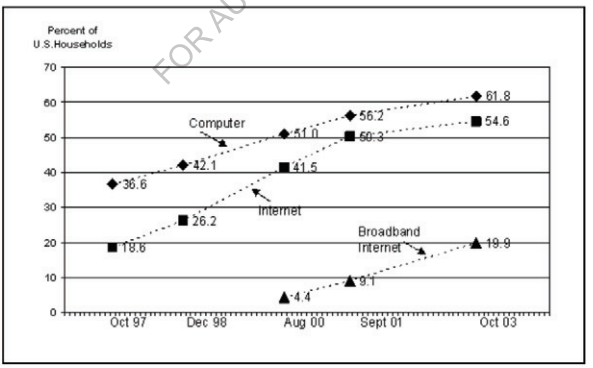
The United States is the place where internet and e-commerce was initiated. Overall, the US domestic environments and government policies have favored to e-commerce development, which lead the USA as the leader in e-commerce evolutionary process.

3.1.1. National Environments

3.1.1.1. Population and Demographics

Some aspects of population and demographics are clearly correlated with the indicator of e-commerce diffusion, such as use the of computers in population (PC penetration), and the Internet users. The US population is the third largest in the world after China and India. According to The US Census Bureau's stats, as of July 2007 the US population is over 300 million[30]. The US is mainly an urban/suburban population with a normal age distribution. About 80% live in cities, and 21% are under 15 years of age[31].

Figure 3.1: Percent of Households with Computers and Internet Connections 1997-2003



Source: Adopted from U.S. Department of Commerce, 2004

[30] U.S Census Bureau, "U.S and World population Clocks-POP Clocks", available at: http://www.census.gov/main/www/popclock.html visited on April 12, 2008

[31] Fomin, V. et al., Globalization and electronic commerce: Environment and policy in the U.S. Irvine, CRITO, University of California, Irvine, 2003

According the U.S Department of Commerce (Figure 3.1) the proportion of U.S. households with computers reached 61.8 percent in 2003, and 87.6 percent of those households used their computers to access the Internet. As a result, 54.6 percent of U.S. households had Internet connections (54.1% in households with a personal computer or laptop, plus an additional 0.5% using a mobile telephone or some other home Internet access device). Household Internet connections increased only four percentage points in the 25 months between the two most recent surveys, compared with an almost nine percentage-point increase during the 13 months separating the previous two surveys (August 2000 and September 2001)[32].

In addition according to The Pew internet and American Life Project's survey[33] most internet users (81%) have done something online connected to buying products or researching things they may buy offline. Online shopping has been a feature of online life since the late 1990s and has now become commonplace. It is obvious that the PC penetration and Internet connection have enabled the Americans to go online and driven the e-commerce evolution in the U.S.

3.1.1.2. Economy and Industry Structure

Table 3.1 the U.S Macroeconomic Indicator 2002-2006 [34]

Indicator	2002	2003	2004	2005	2006
GDP in US$ bn	10,417.60	10,918.50	11,679.20	12,416.51	13,201.82
GDP per capita US$	35,180	37,570	41,060	43,560	44,970
GDP growth	1.61%	2.72%	4.23%	3.20 %	3.30%

Source: Made by Author based on World Bank, "World Development Indicators Online"

The US Gross Domestic Product was US$ 13,843.8 billion in the third quarter of 2007[35]. US GDP grew steadily during the 2000's, ranging from 1.61% to 4.23%. The United States is one of the world's wealthiest nations, with average personal income of US$ 44,970 in 2006 (Table 3.1). The current economic picture appears favorable indications which will present a favorable environment for e-commerce[36].

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[32] The U.S Department of Commerce (DOC), 2004, "A Nation Online: Entering the Broadband Age"

[33] PEW Internet American Life Project, "Online Shopping: Internet users like the convenience but worry about the security of their financial information", February 2008

[34] Generated from: http://publications.worldbank.org/WDI/ visited on May, 2008

[35] The U.S Bureau of Economic Analysis ,"Gross Domestic Product: Fourth Quarter 2007"

[36] GDP is one of indicator for e-commerce development in U.S, this argument mainly based on (1) McGann, S., et al., "Globalization of E-Commerce: Growth and Impacts in the United States of America," Sprouts: Working Papers on Information Environments, Systems and Organizations,

The size of the US economy and the wealth of the population is a strong factor affecting the adoption of e-commerce. GDP per capita and the related gross national product (GNP) per capita are drivers of national wealth. They are likely to affect the extent of observed new product or technology development in a country[37]. Those indicators are likely to be an important driver of B2C e-commerce diffusion directly for the United States.

3.1.1.2.1. Firm Size, Industry Structure and Concentration

The three major industries which contribute significant shares are manufacturing (11.7% of GDP), distribution (18.7% of GDP) and finance (20.9% of GDP) (BEA, 2008). 99% of the U.S firms are Small Businesses and 97% of them are exporter firms (SBA, 2007). The structure and the concentration have created environment where exporter firms need to develop internet-based channel for entering into the international market. It is important enabling factor for B2B e-commerce establishment in the United States, as the firms reach global market.

The commercialization of e-commerce has brought U.S as the country's ICT firms are world leader such as Microsoft, Yahoo, and Dell. Especially the computer and electronic equipment industry has made extensive use of ICT in manufacturing and distribution (e.g., Intel, Cisco, IBM, Dell). Internet-based channel is one prominent channel to support manufacturing and distribution process. For example, in 2000 Dell used the virtual company approach to expand the scope of its business without a commensurate expansion of its own work force and without making a major acquisition. It was done by developing a network of software and services companies that offer technologies and skills that Dell lacks in its existing value of web (Kraemer, 2001). The new distribution channel has contributed to the B2C e-commerce diffusion in U.S. indirectly as it has encouraged the customer to use e-commerce for ordering.

3.1.1.2.2. Importance of Foreign Multinational Corporations

Globalization has brought Multinational Company (MNC)[38] take into account in the U.S economy. The worldwide value added by non-bank U.S. MNCs increased 9.3 percent in

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Volume2, Issue 2, pp 59-86, 2002; (2) Fraumeni. B., "E-commerce: Measurement and Measurement issues", The American Economic Review, Vol. 91 No.2 , 2001

[37] Studies on positive relation between GDP and adoption new innovation: (1) Talukdar et al (2002); (2) Rogers (2003).

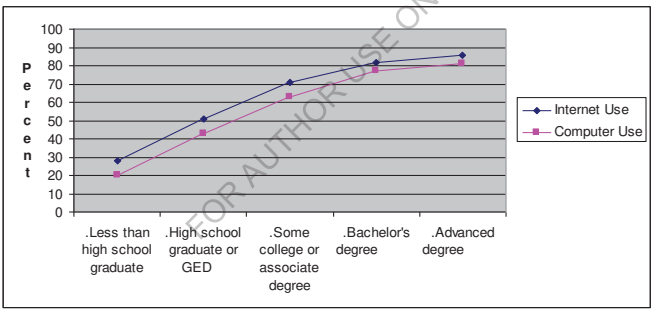
[38] U.S BEA defines the MNC as being a firm based in one country (the "parent") with at least a 10% equity interest in a firm located in a second country (the "affiliate").

2003 after declining in 2001 and 2002. The value added by parents[39] increased 6.7 percent, and the value added by their foreign affiliates increased 17.1 percent. The growth in the value added by U.S. MNCs in 2003 reflected both growth in real output by MNCs and the effects of changes in prices, such as changes in the foreign-currency price of the dollar. It also reflected the continued expansion in worldwide economic activity: Worldwide real gross domestic product (GDP) grew at an estimated 2.8 percent in 2003, up from 1.8 percent in 2002 and 1.4 percent in 2001[40].

US multinational firms have playeed a larger role in the B2B e-commerce establishment as the expansion purposes they evolve Internet-based channel for the coordination between parent companies and sub-ordinates. For example, Japanese and other foreign OEMs have built assembly plants in the US, often bringing about changes in domestic company practices and strategies such as ICT evolvement. It is one of factors fueling the B2B e-commerce establishment directly among U.S multinational firms.

3.1.1.3. Human Resources

Figure 3.2. US Internet and Computer Use by Educational Attainment, 2003



Source: Made by Author based on U.S. Census Bureau, Current Population Survey, October 2003

According the U.S. Census Bureau, 86 percent of all adults 25 and older reported they had completed at least high school and 29 percent at least a bachelor's degree in 2007. The data also showed that more education continues to pay off in a big way: adults with advanced degrees earn four times more than those with less than a high school diploma[41]. Adults (age

[39] **U.S. Parent**. a person, resident in the United States, that owns or controls 10 percent or more of the voting securities, or the equivalent, of a foreign business enterprise. "Person" is broadly defined to include any individual, branch, partnership, associated group, association, estate, trust, corporation, or other organization, or any government entity.

[40] The estimates of the growth in worldwide GDP are from the World Bank Web site at <www.worldbank.org/data>.

[41] The US Census Bureau (BEA 2008), "One-Third of Young Women Have Bachelor's Degrees"

25 and above) with education beyond college were the most likely to be both computer and Internet users. Those with Bachelor's degrees trailed close behind. At the opposite end of the spectrum are those adults whose highest level of education is less than high school.

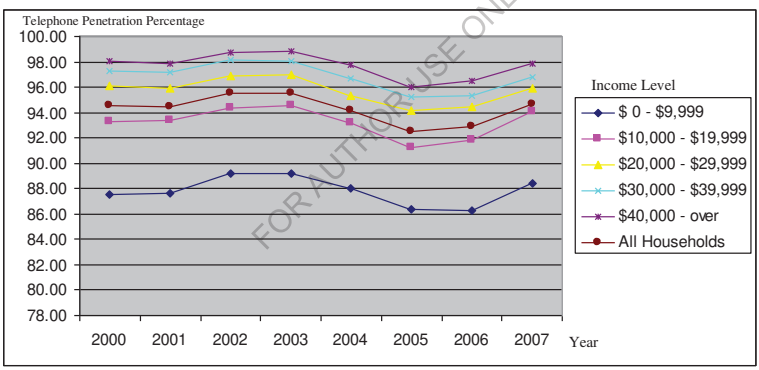
Based on the data, education has appeared as indirect enabling factor for e-commerce diffusion, the level of educational attainment in a population is correlated with economic productivity and earning potential. Educational attainment is also contributing factor for computer and Internet use. The higher a person's level of education, the more likely he or she will be a computer or Internet user (Figure 3.2)

3.1.1.4. Infrastructure

The U.S telecommunications infrastructure has expanded greatly over the past few decades in which e-commerce has relied on. In addition the transport infrastructure and system also enable the e–commerce evolution.

3.1.1.4.1. Information and Communication Infrastructure

Figure 3.3 Telephone Penetration Rates by Income

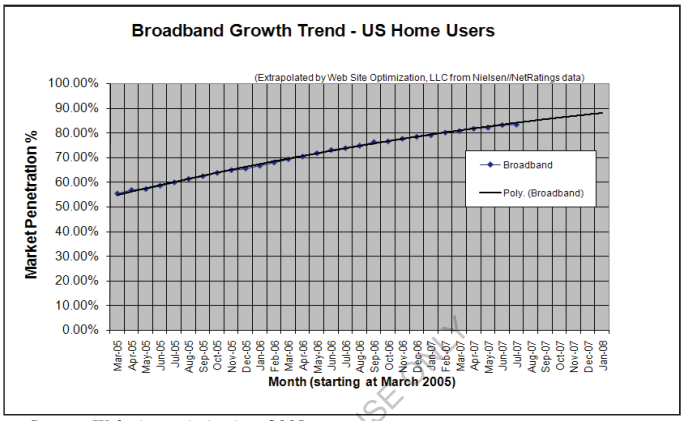


Source: Made by Author based on FCC report on Telephone Penetration by Income by State, 2008

According to a new FCC report, 92.8 percent of all households in the United States had telephone service in March of 2006. The data came from the Current Population Survey (CPS) completed by the Census Bureau in that month (FCC, 2006). In addition, federal and state governments have supported mechanisms that defray the cost of telephone service for low-income consumers to increase the number of subscribers among low-incomes (Figure 3.3). This fact sheets might have been an important but indirect enabler of B2C (Business to Costumer) e-commerce, because Internet users on dial-up service do not incur high telephony charges while searching on-line for product specifications and pricing.

Moreover the connection pattern has changed with the expansion of Broadband[42] services over cable television infrastructure, or Digital Subscriber Line service on copper telephone lines. High speed Internet connections in the U.S jumped from 51.2 million to 64.6 million in the first six months of 2006, the FCC reported In July 2007, broadband penetration in US homes grew 0.2 percentage points to 83.43% up from 83.28% in June 2007 (figure 3.4).

Figure 3.4 Broadband Connection Speed Trend - Home Users (US)



Source: Web site optimization, 2008

The shift towards broadband is progressing with an emphasis on the competitiveness and flexibility of the communications market will be a direct factor which enabling e-commerce diffusion among Americans. It has provided more opportunities to access internet as well as e-commerce.

3.1.1.4.2. Transport Infrastructure

The United States delivery system is one of prominent in the world, the most famous of these is Federal Express, which pioneered the advent of time-definite delivery and next-day service, but United Parcel Service, DHL and the US Postal Service are also part of this infrastructure. B2B e-commerce is dependent on the global freight transportation industry, which is fragmented among several vertical niches, including warehousing, trucking, railways, airfreight, and ocean freight. The core operation of contemporary transport infrastructure requires inter-networked ICT tools and B2B systems. For example, the National Transportation Exchange's online network helps keep trucks full, while ocean container space is being auctioned via GoCargo's Internet exchange (eMarketer 2001, p.58).

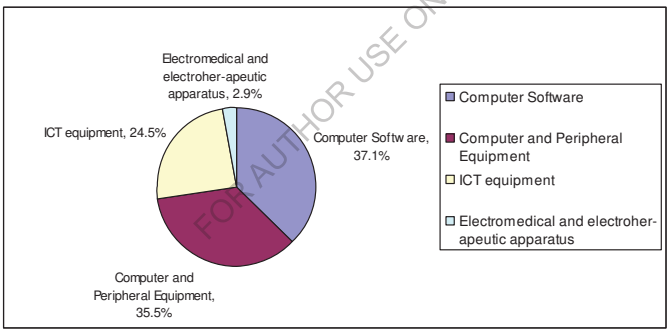
[42] Broadband is 200 kbit/s in one direction, and advanced broadband is at least 200 kbit/s in both directions

In addition U.S. Department of Transportation seeks technology solutions to improve safety and reduce traffic congestion which called "SafeTrip-21"[43]. SafeTrip-21 is built upon research into the use of electronic information, navigation, and communications technologies to prevent accidents and alleviate congestion by providing drivers with real-time safety warnings, traffic and transit information, and advanced navigational tools (DOT, 2008). This Intelligent Transport System (ITS) has improved transportation safety and mobility and has contributed to e-commerce operation in the U.S.

3.1.1.4.3. Enterprise Infrastructure

The number of U.S. businesses connected to the Internet is rising fast, according to eMarketer (2001). The year 2003 will see 99% of all medium- to large-sized firms wired, versus a projected 85% of small companies. Smaller players will narrow the gap when it comes to e-commerce; however, 80% of them are expected to be doing transactions online within three years, closely trailing the projected 85% penetration of e-commerce at large-and medium-sized firms.

Figure 3.5 Total Capitalized Expenditures Distribution for ICT



Source: Made by Author based on U.S Census Bureau, 2006

The enterprise infrastructure readiness also can bee seen from the firm's spending on the ICT budget. In 2006, total capitalized ICT spending in 2006 was $159.9 billion includes purchases of ICT equipment accounted for $100.6 billion, an increase of 6.8 percent from 2005. Capitalized purchases and payroll for developing software accounted for $59.3 billion, an increase of 18.4 percent from 2005 (Figure 3.5)[44]. This readiness will be an important contributing factor to e-commerce adoption among firms.

[43] Since December 17 2007 The U.S. Department of Transportation's Research and Innovative Technology Administration (RITA) and stakeholders have innovated Safe Trip-21 research.

[44] U.S Census Bureau, "2006 Information and Communication Technology Survey",2006

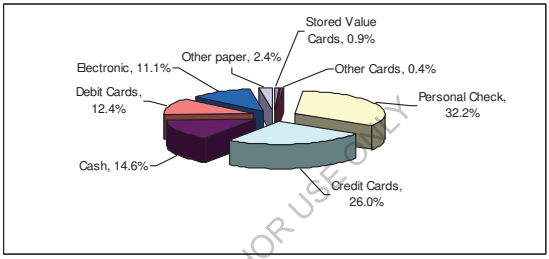
3.1.1.5. Financial Resources

The financial resource is one obvious factor that account in the e-commerce diffusion[45]. The U.S has been a country with the massive and leader in the financial resources and this is the favor situation for the e-commerce adoption and operation.

3.1.1.5.1. Use of Credit Cards

Credit card transactions continue to grow in number, taking a larger share of the U.S payment system. The use of general purpose credit cards has grown substantially since 1981. In 1995, credit card transaction accounted for approximately 14.9 billion transactions[46]. This pattern shows that credit card is one of popular payment instrument in the U.S and is key factor enabling B2C e-commerce diffusion.

Figure 3.6 Most Common Payment Systems by Dollar Amount



Source: Made by Author based on data from U.S. Census Bureau, 2005. Laudon & Traver, E-Commerce

The use of credit cards among American for e-commerce transaction has been more popular (Figure 3.6), first of all, the Government plays important role by providing protection from credit card fraud. For example, federal law exempts a credit card customer from liability above $50 for illegal use by a third party due to lost or stolen credit cards and credit card numbers. Secondly, the e-commerce business and credit card companies also try to improve customer satisfaction by evolving security technology on credit card payment such as: encryption, Card data invisibility, Automated fraud detection, Address Verification (AVS) and Card Holder Verification (CHV), as well as authentication[47]. Lastly, as consumers online experiences have increased with reputable online merchants, their trust and confidence in the vendors grows. That also shows that the American online consumers have grown to be mature and thus it is the important factor which contributes to e-commerce.

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[45] See:(1) Shalhoub., K and Al Qasimi L., 2006; (2) Hsu., P," 2006

[46] Traylor., N et al., "Payments, Clearance, and Settlement: A Guide to the Systems, Risks, and Issues", DIANE publishing 1989.

[47] Technical definition refers to: Ollington,. C and Reuvid. J., "The Secure Online Business Handbook: E-commerce, IT Functionality & Business", Kogan Publisher, pp.78-79, 2004

3.1.1.5.2. Venture Capital

The availability of venture capital plays significant role in propelling the e-commerce evolution. Rapid increase in the availability and international flow of venture capital has resulted in the generation of e-commerce technologies in various locations in the world[48]. During the 1990's venture capitalization dramatically expanded and followed by internet booming, the concepts of e-commerce and dot-com[49] quickly were embraced and start received venture capitalization with the dramatic number of investment. However the combination of rapidly increasing stock prices, individual speculation in stocks, and widely available venture capital created an exuberant environment in which many of these businesses dismissed standard business models, focusing on increasing market share at the expense of the bottom line. This anticlimax situation is called the dot-com bubble burst.

Table 3.2 Changes in selected dot-coms share prices

Company	[a] Jul 2 – Aug 4 1999	[b] Aug 4 – Dec 31 1999	[c] Mar 27- Apr 21, 2000	Share price on1st August 2003 as a percentage of the all time high [d]
Amazon	-22%	72%	-28%	38%
Ariba	+40%	394%	-43%	2%
Ask Jeeves	-58%	303%	-62%	9%
Ebay	-35%	65%	-37%	86%
iVillage	-41%	-41%	-40%	2%
Priceline	-30%	-28%	-26	33%
Yahoo	-28%	258%	-39%	13%

Source: Made by Author based on Leffy. D, 2004

Note: [a]Table 5, "Changes in selected dot com share prices 2nd July – 4th August 1999"
[b] Table 6, "Changes in selected dot coms share prices: 4th August – 31st December 1999"
[c] Table 4, "Changes in selected dot com share prices 27th March - 21st April 2000"
[d]Table 7, "Changes in selected dot coms share prices 1st October 2002 – 1st August 2003"

Dot-com bubble brought negative effect on dot-com business-many were closed down and others had experienced considerable falls in their share prices. Some dot.com ventures whose businesses are focused on sound business principles rather than on bandwagons[50] as they assemble their plans still survive. Table 3.2 illustrated share price changed of some dot-com companies. After all the gloom which had engulfed the sector,

[48] The argument based up on: (1) Kshetri., N., "Determinants of the Global Diffusion of B2B E-commerce", Electronic Market, 2002; (2) Mcm institute, "Electronic Markets", the International Journal of Electronic Commerce & Business Media

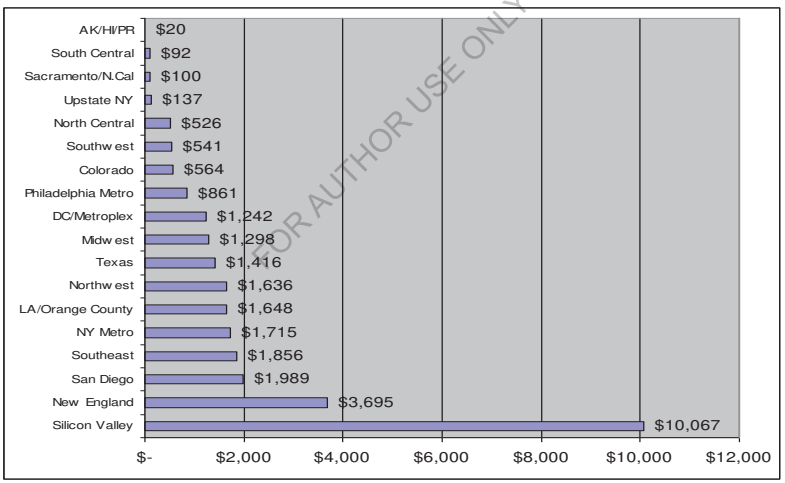
[49] Chaffey (2002, p54) defines dot com as "business whose main trading presence is on the Internet."

[50] Bandwagons are used to characterize "irrational exuberance" of investor in the stock market. According to this view, investors observe that others have recently been highly successful in the market. They then follow their example, regardless of market fundamental. (Rohlfs, 2001)

August 2003 saw the start of a dramatic increased in the value of many dot-com companies. The gains were shown by the companies, which corresponded with a rise of over 40% in the NASDAQ index, some of them finally survived and now even become prominent players in the e-commerce market shares such as Yahoo, eBay and Amazon.

Moreover the dot-com crisis showed that US capital markets are very flexible and can respond quickly to the innovation. This is important key success factor for the e-commerce diffusion in the US, because venture capitals have contributed to e-commerce. Venture capitalists invested $29.4 billion in 3,813 deals in 2007—marking the highest yearly investment total since 2001. The total invested in 2007 represents a 10.8 percent increase in dollars and a five percent increase in deal volume over 2006. During 2007, Silicon Valley[51] dominated the attention of investors as 34 percent of total US venture capital was invested in this region (figure 3.7). The presence of Silicon Valley itself also a driving factor toward e-commerce evolution process diffusion in U.S. as many new ICT businesses have been set up in this region.

Figure 3.7. Venture Capital Investment by Region in 2007 ($ in million)



Source: Made by Author based on PWC, 2008

3.1.1.6. Business Readiness for E-commerce

[51] Cohen et al. (2001) define the Silicon Valley model as "a set of social institutions (research universities, venture capitalists and specialized law firms) and market institutions (flexible labor market, incentive compensation, financial capital, high-skilled people from around the world) that make it possible for an entrepreneurial company to bring innovations to market quickly and at scale."

Business readiness for e-commerce can be determined by the entrepreneurial culture of willingness to engage in e-commerce. Readiness for B2C also can be seen in consumer attitudes toward e-commerce.

3.1.1.6.1. Entrepreneurial Culture

According to the U.S Census Bureau on Company Statistic (U.S Census, 2005), there are 5,983,546 firms in the U.S, 5,966,069 are SMEs and only 17,477 are large firms. This figure shows that over 99% U.S. firm are SMEs. Small business continues to embrace Internet technology, and smaller niche businesses are covering their web site costs with increased revenues. The adoption behaviors upon Internet and e-commerce among SMEs are such as following: [52]

a. 57 percent of small firms use the Internet.
b. 61 percent of those have a website.
c. A website gives entrepreneurs access to markets at low cost:
d. 67 percent gained new customers.
e. 62 percent improved their competitive position.
f. 56 percent increased total sales.
g. 56 percent attracted new types of customers.

The small business owners have seized the new opportunities of the Internet and the following activities have been done in order to support their business:

a. 35 percent sell through a website.
b. 61 percent purchase goods and services.
c. 80 percent gather information.
d. 83 percent use e-mail.

These facts show that e-commerce has diffused among small business in U.S. as the advancement of the management. The shifting culture toward internet-based business among small business has been a contributing factor to e-commerce in the U.S.

3.1.1.6.2. Consumer Preferences and Attitudes

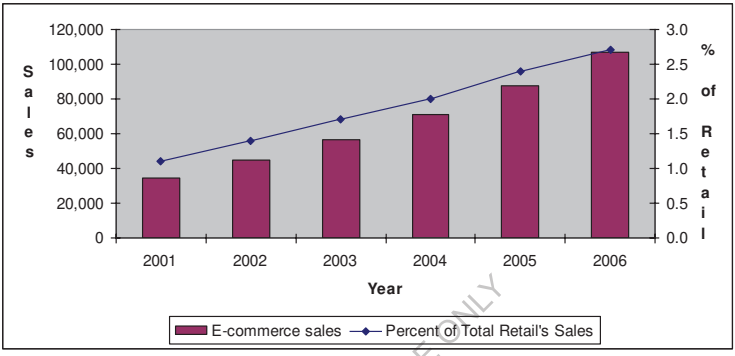
The e-commerce has become commonplace among internet users in the U.S. Almost all internet users (93%) have at one time or another done something related to e-commerce. Two-thirds (66%) of online Americans say that they have purchased a product online.[53]. E-

[52] The high light data is based up on report on "E-Biz.com: Strategies for Small Business Success" by Joanne H. Pratt, 2002, U.S Small Business Administration (SBA).

[53] The information is mainly based on: Horrigan., J., "Online Shopping", PEW Internet and Life Project, February 2008

commerce revenue has grown from $7.4 billion at the middle of 2000 to $34.7 billion in the third quarter of 2007, up from $29.1 billion in the third quarter of 2006, and $24.1 billion in the same period in 2005, according to Census Bureau, e-commerce accounts for 3.4% of total retail sales in the United States, up from 0.8% in early 2000. Year-to-year growth in e-commerce was 19.3% in the third quarter of 2007[54] (see Figure 3.8), compare with the growth in the prior year but slower than the (roughly) 40% growth rates in 2001 and 2002[55].

Figure 3.8 Estimated U.S. Retail E-commerce Sales as a Percent of Total Retail Sales (in billion)



Source: Made by Author based on U.S Census Bureau, "2006 E-commerce Multi-Sector Report[56]*"*

According to the data from The American Customer Satisfaction Index (ACSI)[57], the U.S. customer satisfaction with e-commerce generally increases, however in the fourth quarter of 2007, the Index drops .4% to 74.9, the lowest score of 2007 (Figure 3.9). Although aggregate customer satisfaction is declining, of the 12 industries measured in the fourth quarter, 4 improve, 3 are unchanged and 5 decline. But the decliners drop more than the gainers improve. Health insurance, department & discount stores, e-Travel (travel websites), life insurance and gas stations all decline by an average of 1.4%. Results are mixed at the company level as well, with 44% of the companies improved, 13% unchanged, and 43% registering a decline.

[54] U.S. Census Bureau, (2008), "Quarterly Retail E-commerce Sales 4th Quarter 2007."

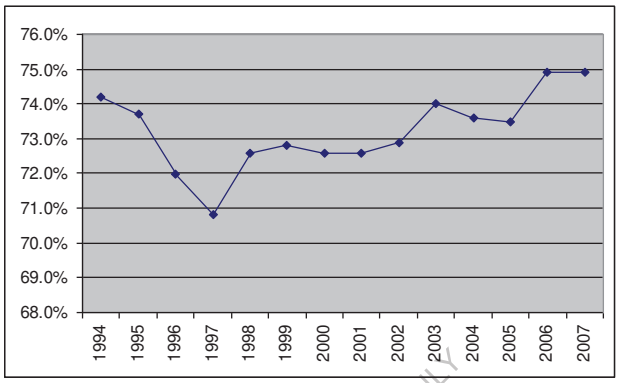
[55] U.S. Census Bureau, Estimated Quarterly U.S. Retail Sales (Adjusted): Total and E-commerce http://www.census.gov/mrts/www/data/html/07Q3table3.html visited on March 20, 2008

[56] U.S. Census Bureau, (2008), "2006 E-commerce Multi-Sector Report", Table 7, "Summary of U.S. Shipments, Sales, Revenues, and E-commerce: 2000-2006"

[57] ACSI, "Fourth Quarter, 2007: Retail Trade; Finance & Insurance; E-Commerce February 19, 2008", available: http://www.theacsi.org/index.php?option=com_content&task=view&id=177&Itemid=180 visited on April 28, 2008

Those trends have shown that American e-consumer's preferences and attitudes have reached a level of maturity in the United States. The positive consumer's attitudes and preferences are the key success for B2C e-commerce business. Therefore those have been main driver to B2C e-commerce evolutionary process in the U.S.A.

Figure 3.9 The U.S Customer Satisfaction Index on E-commerce



Source: Made by Author based on ACSI, 2008

3.1.2. Government Policy

The first focused statement of national policy for e-commerce was proposed by the President Clinton Administration's policy initiative on National Information Infrastructure (NII) in July 1, 1997. The Clinton Administration's Framework for Global Electronic Commerce was issued on July 1, 1997 and originally had five principles[58]:

a. The private sector should lead.
b. Governments should avoid undue restrictions on electronic commerce.
c. Where governmental involvement is needed, its aim should be to support and enforce a predictable, minimalist, consistent and simple legal environment for commerce.
d. Governments should recognize the unique qualities of the Internet.
e. Electronic Commerce over the Internet should be facilitated on a global basis.

In order to enhance the framework, the NII 's had extended the following principles and objectives[59]:

a. Promote private sector investment, through appropriate tax and regulatory policies.
b. Extend the "universal service"[60] concept to ensure that information resources are available to all at affordable prices.

[58] The White House, (1997), "A Framework For Global Electronic Commerce".

[59] The National Information Infrastructure: Agenda For Action Executive Summary

c. Act as a catalyst to promote technological innovation and new applications.
d. Promote seamless, interactive, user-driven operation of the NII.
e. Ensure information security and network reliability.
f. Improve management of the radio frequency spectrum.
g. Protect intellectual property rights.
h. Coordinate with other levels of government and with other nations.
i. Provide access to government information and improve government procurement.

The policies have been an important milestone for the legal, financial, social, and technological enablers in the development of the U.S. Internet and electronic commerce. These encompassed everything that produces, contains, processes, or uses information, in whatever form, or whatever media, as well as the people who develop the information, applications, and services, etc (Kahin 1997, p.163). In addition the Framework recognizes that governments can have a profound effect on e-commerce, either facilitating or inhibiting it. Knowing when and how the government should act is crucial to the development of e-commerce (Zhu, 2006). In order to see the role of national policy in the U.S. e-commerce evolution, therefore, this section will describe the competence government institutions and their enabling policy to the legal framework of e-commerce.

3.1.2.1. Competence Government Institutions

The US e-commerce diffusion has been influenced by policies arising from congress in the passage of legislation, from many executive branch agencies in the implementation of legislation, and from the Federal Courts in the interpretation of legislation and executive actions. The lists of actors and agencies that sought to play particular roles deal with e-commerce legislation can bee seen in Table 3.3.

Table 3.3 Important policy institutions

Institution	Policy Roles Regarding E-Commerce
Congress	Enacts legislation related to e-commerce and controls the financing of federal government actions
Administration	President signs legislation into law and executes law as he interprets it; directs all federal mission agencies
Office of Management and Budget	Sets budget and priorities for federal agencies, including activities related to e-commerce
Justice	FBI investigates and federal prosecutors prosecute violation of laws related to e-commerce
Treasury	Internal Revenue Service implements tax policy related to ecommerce; banking

[60] Universal Service based on "Communications Act" of 1934 Section 1, Purposes of Act, Creation Of FCC

	regulators govern online banking and other payments practices including electronic funds transfer.
Federal Reserve	Regulates key aspects of banking and finance that affect ecommerce; operates the world's largest electronic funds transfer network (FEDWIRE) involving over 9,000 depository institutions.
Commerce	Promotes e-commerce activity through studies sponsored by the National Telecommunications and Information Administration
Transportation	Facilitates and regulates passenger and freight transport that uses or is vital for e-commerce
FCC	Has plenary jurisdiction over common carrier communication and exercises considerable influence over the evolution of digital data communication
SEC	Regulates many aspects of securities trading, including on-line trading aspects of e-commerce
National Science Foundation	Makes major investments in research related to information technology that affect e-commerce
Federal Courts	Interpret the constitutionality of federal and state legislation, and have decided many cases related to regulated common-carrier infrastructure, Internet-based commerce taxation, attempts to control content on the Internet, etc.
Farm Credit System	FCA issues guidance to Farm Credit System institutions on their use of e-commerce

Source: Fomin et al, 2002 and revised by Author

Those important policies deal with e-commerce have contributed effectively to the national e-commerce development. It encourages private sectors, universities, ICT providers and financial institutions engaged into e-commerce. In addition the presence of the policy has attracted the consumers to utilize e-commerce as a new media for transaction, in particularly it will be a driving factor for e-commerce diffusion in U.S.

3.1.2.2. Enabling Policies

The enabling policies up on e-commerce are related to the technical of e-commerce operation. There are five aspects of enabling policy are at least in principle, and important in establishing the current position of the US in the ICT industry, and e-commerce[61]:

3.1.2.2.1. Telecommunications Liberalization

Perhaps the single most important thing that any country can do to improve the climate for e-commerce is to liberalize its telecommunications introducing competition at all levels (local, long distance and international) and for all technologies (wireline, wireless, and cable), and by privatizing its state-owned carriers. United States launched major liberalization policies aimed to open all telecommunications markets for competition. Telecommunications

[61] The argument is mainly based on Fomin et al, 2003.

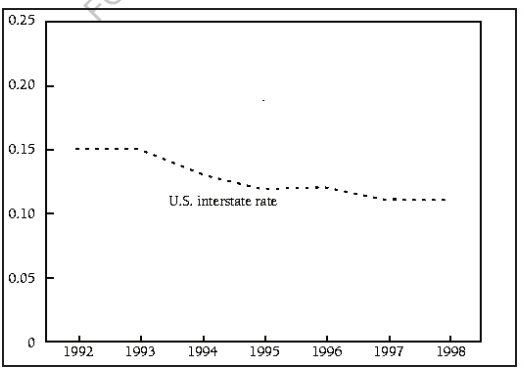
liberalization had begun in the United States in the 1970s and U.S had a clear first-mover advantage in some markets compare with Europe[62].

In the United States, regulation of telecommunications was in the hands of federal and state (provincial) regulators. All interstate services were regulated by the Federal Communications Commission (FCC), but intrastate (including local) services were regulated by state commissions. The United States' Telecommunications Act of 1996 is the most comprehensive piece of U.S. legislation to be enacted in this sector since the 1934 Communications Act. Its stated purpose is to provide for a pro-competitive, de-regulatory national policy framework designed to accelerate rapidly private sector deployment of advanced telecommunications and information technologies and services to all Americans by opening all telecommunications markets to competition. The act is designated to increase competition in three areas:

- Long-distance telephone service;
- Local-exchange telephone service; and
- Local cable television service.

The deregulation has had profound consequences in opening telecommunications to competition, as a result it push down the price. Telecommunication liberalization policy has facilitated e-commerce evolution in the US. One is flat-rate local telephone service (a single monthly fee for unlimited use) that probably contributed to high Internet penetration (see figure 3.10. Over 80% of Internet users in the US use dial-up connection, and flat-rates mean they do not have to worry about high connection fees (Fomin, 2003).

Figure 3.10. Average Domestic Long-Distance Rates the United States 1992-1998



Source: FCC (2000, table 9)

3.1.2.2.2. Telecommunications Broadband Policy

[62] Telecommunication liberalization in Europe was started in UK 1982. (Cave, 2001)

For the past six years the Federal Communications Commission (FCC) has been crafting policies on high-speed Internet access, also known as broadband[63]. Broadband is very important, because it provides users with the technical capability to access a wide range of resources, services, and products that can enhance users' needs in a variety of ways. From a regulatory perspective, broadband involves different kinds of industries and technologies under different regulatory regimes. Therefore it is complicated in the regulation issue, because it is hard to distinguish between information services and the underlying telecommunications carriers when the owners of facilities integrate carrier and information service functions[64]. Especially to U.S. there have been different regulations on broadband policy among the states.

The U.S. broadband market is increasingly competitive, especially with the rollout of wireless broadband. As telephone companies upgrade their networks and cable companies continue to expand their cable capacity, more and more Americans have a choice of service from these two sources. In some cities, more than one cable company offers broadband. Moreover, new technologies, such as wireless access, are increasing competition even further.

Although high-speed Internet access through cable and DSL[65] are similar services, providers of these services face completely different regulations. Local telephone companies supply DSL through standard telephone lines. The FCC therefore, classifies DSL as a telecommunications service subject to regulation. Local cable TV companies supply broadband through their coaxial cables. The FCC has attempted to classify cable broadband as an information service, thus leaving it largely unregulated, but it has been rebuffed by a federal appeals court.

The U.S. try to boost broadband penetration and download's speeds by creating conditions that allow for the emergence of facilities-based competition. Therefore in an August 2003 decision, the FCC began moving away from these regulations, completing the deregulation of broadband by eliminating the right of entrants to share the incumbents' lines at very low prices. Telephone companies no longer will have to give competitors access to most new broadband investments, thereby increasing incentives to invest in new infrastructure

[63] The FCC defines broadband service as data transmission speeds exceeding 200 kilobits per second (Kbps), or 200,000 bits per second, in at least one direction: downstream (from the Internet to the user's computer) or upstream (from the user's computer to the Internet). The detail technical information on broadband can be found at: http://www.fcc.gov/cgb/broadband.html.

[64] National Academy of Science (NAS). (2002). Broadband: Bringing Home the Bits. Edited by N. A. . Science. Washington, DC: National Academy Press.

[65] DSL or xDSL originally stood for digital subscriber loop is a family of technologies that provide digital data transmission over the wires of a local telephone network. DSL electronically enhances the conventional copper telephone voice line, enabling it to simultaneously provide both voice service and high-speed data traffic. (FCC)

such as optical fiber to homes, which will provide faster data transmission capabilities than is possible over copper lines. However, the FCC rules allow the states to decide whether to require incumbent telephone companies to lease their entire platforms to competitors at wholesale rates, which the competitors could, in turn, use to deliver broadband service. The decision to allow states to mandate unbundling of all of the facilities in the network platform, however, now has been reversed by the D.C. Circuit.[66] The administration has elected not to appeal this ruling, though the long-distance companies have appealed it to the Supreme Court. Allowing the D.C. Circuit's opinion to stand would remove an important investment disincentive for broadband, at least for the incumbent telephone companies.

In August 2005 the Federal Communications Commission adopted a policy statement that outlines four principles to encourage broadband deployment and preserve and promote the open and interconnected nature of public Internet: (1) consumers are entitled to access the lawful Internet content of their choice; (2) consumers are entitled to run applications and services of their choice, subject to the needs of law enforcement; (3) consumers are entitled to connect their choice of legal devices that do not harm the network; and (4) consumers are entitled to competition among network providers, application and service providers, and content providers. Although the Commission did not adopt rules in this regard, it will incorporate these principles into its ongoing policymaking activities. All of these principles are subject to be the enabling factor for e-commerce diffusion.

3.1.2.2.3. Tax Treatment of Electronic Transactions

Once after the products or services are sold trough e-commerce the issue of taxation arises; however there has been debate up on internet or e-commerce taxation[67]. The US Internet Tax Freedom Act (ITFA, 1998) is the basic policy regarding internet or e-commerce taxation. This law arose out of the principle that information should not be taxed and that the internet lent itself to complex, unfair, and often burdensome taxation of commerce. Especially concerning was the prospect for extreme taxation measures such as taxing every bit or packet of information transacted. The US Internet Tax Freedom Act contains following acts:

a. Establishes no new taxes imposed by state/local government on Internet access (from Oct. 6, 1998 to Oct. 21. 2001)
b. No multiple taxes on e-commerce.

[66] The United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit), is the federal appellate court for the U.S. District Court for the District of Columbia.

[67] Europe and the US have different visions of Internet trade taxation. Europe wants to tax domestic and international transactions while the US wants to stay away from taxation.

c. No discriminatory taxes on e-commerce (i.e. taxes that place e-commerce at a disadvantage to more traditional commerce).
d. No taxes on information exchanged on the Internet that has no comparable off-line equivalent (e-mail, etc.)
e. Meant to prohibit expansion of tax authority
f. Establishes Advisory Committee on Electronic Commerce to study the implications of internet taxation and produce formal policy recommendations to Congress by April 21, 2000. This committee met for the second time September 14th-15th.
g. Creates no federal taxes on e-commerce or access.
h. Promotes and urges the Internet to be a global tariff free zone.

The US's ITFA did not put a moratorium on Internet taxation, but only on discriminatory taxes and on Internet access taxes. In the US, sales tax cannot be levied on transactions with firms that do not have physical presence within the state of the consumer. The ITFA upheld that principle. Thus Amazon.com set up physical presence in the sparsely populated state of Washington. Amazon customers in Seattle pay sales tax but majority customers who reside outside the state of Washington do not[68]. However among states have different treatment regarding internet and e-commerce taxation. States are using e-commerce taxes and on what goods, information, and software. Some states treat Internet access charges as telecommunications services, thus subjecting those to often high telecommunications taxes. Tennessee and Wisconsin are examples[69]. The US Internet Tax Freedom Act has been extended since November 1, 2007 for seven years to the life of the moratorium, which prohibits state and local government from taxing Internet access and electronic commerce. As a result, the act now will expire November 1, 2014.

Preferential tax treatment gives e-commerce a price discount compared with traditional commerce. In addition it also gives incentive to the producers to enter the market with the competitive prices compare with the traditional commerce. The US Internet Tax Freedom Act has played important role as key enabling factor which facilitate the e-commerce.

3.1.2.2.4. E-government initiatives

Electronic government in the U.S was officially initiated based on The E-Government Act of 2002 (H.R. 2458/S. 803). It was signed by the President on December 17, 2002, with an effective date for most provisions of April 17, 2003. Its stated purpose is to improve the

[68] Cairncross. F, "The Death of Distance" Boston, Mass.: Harvard Business School Press, 2001, pp.179-180

[69] Current status of E-Commerce Taxation among States can be seen in appendix 1

management and promotion of electronic government services and processes by establishing a Federal Chief Information Officer within the Office of Management and Budget, and by establishing a framework of measures that require using Internet-based information technology to improve citizen access to government information and services, and for other purposes[70].

The E-Government Initiatives are divided into 4 portfolios and one cross-cutting security initiative. The portfolios and the initiatives they contain are presented below[71]:

a. Government to Citizen (G2C) - Provide one-stop, on-line access to information and services to individuals, example: GovBenefits.gov and Recreation One-Stop
b. Government to Business (G2B) - Reduce burdens on business, provide one-stop access to information and enable digital communication using the language of e-business, example E-Rulemaking, Expanding Electronic Tax Products For Businesses
c. Government to Government (G2G) - Enable federal, state and local governments to more easily work together to better serve citizens within key lines of business, example Disaster Management, E-Vital and Grants.gov
d. Internal Efficiency and Effectiveness (IEE) - Modernize internal processes to reduce costs for federal government agency administration, example E-Training

The implementation of the e-government initiative has enormous potential to change citizens' perceptions by providing relevant information about the government's services, empowering citizens to conduct transactions and creating awareness of the new government goals. The public views this new initiative as an attempt to make government services easier and more accessible to citizens. Government seems progressive and up-to-date while maintaining a user-friendly and easily accessed service - simplicity[72].

Table 3.6. Use of E-Government in 2001

Activities	All Online Adults
Visited some government Web site	55%
Visited state/local government	50%
Visited federal government Web site	33%
Conducted business with an E-Gov. entity	21%
Conducted business with local/state E-Gov	16%
Conducted business with Federal E-G	11%

Source: National Technology Readiness Survey (2001)

[70] http://www.whitehouse.gov/omb/egov/g-4-act.html visited on April 29, 2008

[71] The argument is based on: Sall. K, "How the US Federal Government is Using XML"

[72] Georgescu. M, "The Government In The Digital Age: Myths, Realities And Promises", "Al.I.Cuza" University, Rumania.

The e-government initiative has the potential to reshape the public's negative attitudes towards government. As can be seen in the National Technology Readiness Survey 2001 (Center of e-services of the University of Maryland; 2001), more than half of American adults (55%) with Internet access visited a government Web sites; 50 % of users visited a state or local government site and 33 % visited a federal government Website (Table 3.6).

The United States Government major initiative on e-government as well as the implementation have profoundly changed the way of Americans works, and learn. Electronic government can fundamentally recast the connection between people and their government. It can make government far more responsive to the will of the people and greatly improve transactions between them. This changing attitude has contributed to the online attitude as well as e-commerce.

3.1.2.2.5. Adjustment to the Legal Framework of E-commerce

The US national policy in the development and deployment of electronic commerce follows the five policy principles noted earlier:

a. The private sector should lead.
b. Governments should avoid undue restrictions on electronic commerce.
c. Where governmental involvement is needed, its aim should be to support and enforce a predictable, minimalist, consistent and simple legal environment.
d. Governments should recognize the unique qualities of the Internet.
e. Electronic commerce over the Internet should be facilitated on a global basis.

Those five policy principles are the fundamental for the U.S legislation to provide legal arrangements and policies that will be contributing factor to e-commerce. Table 3.7 is the summarized of legal and policy on e-commerce operation.

Table 3.7 The U.S. E-commerce-related legislation and policy action

Legislation	Status/content
Digital and Legitimacy signatures Document	E-SIGN Act signed into law by president Clinton June 30, 2000. Ensures the legal validity of electronic signatures and contracts, permits electronic delivery of legally-required notices and disclosures, and allows record retention requirements to be met through electronic means. Slow adoption due to several concerns. The Uniform Electronic Transactions Act (UETA) states that "contracts and records are not invalid simply, because they are in an electronic format rather than on paper."
IPR/Copyright	Computer Crime and Intellectual Property Section (CCIPS). Created 1991 by the US Justice Department (JD). The JD has added nine units to a program called CHIP (Computer Hacking and Intellectual Property). The CHIP team members complement the network of prosecutors at CCIPS. No Electronic Theft Act. Signed into law December 16, 1997. Closed loopholes in the criminal law so those who intentionally distributed copied software over the Internet would face criminal penalties irrespective of whether they profit from their actions. The Digital Millennium Copyright Act (DMCA) is Congress's third attempt to clarify digital IP issues in the law. The DCMA bans independent research related to anti-copying technologies.

Privacy	The Children's Online Privacy Protection Act requires sites collecting information about minors to disclose what information they are collecting and how it will be used. The Online Personal Privacy Protection Act is under consideration in the US Senate, requiring "opt-in" by Internet users for any site/service that collects sensitive personal information, and "opt-out" for less sensitive personal information. The Safe Harbor Accord between the U.S. and the European Union was enacted to protect consumer information in the international arena.
Security	In 2000 the Department of the Treasury established the Financial Services Information Sharing and Analysis Center. The center has helped protect members from the distributed denial of service attacks. National Infrastructure Protection Center (NIPC). Coordinated by FBI. Detecting and responding to cyber attacks on critical infrastructures such as electronic commerce sites. The FBI has also created the National Infrastructure Protection and Computer Intrusion (NIPCI) Program.
Taxation	WTO electronic commerce declaration which includes a moratorium on customs duties on electronic transmissions. Adopted in May 1998. The Clinton-Gore Administration worked to ensure that no new taxes were imposed on e-commerce. OECD 1998 taxation framework. Deals with products like software that are delivered online. November 28, 2001: Internet Tax Non-Discrimination Act bans Internet taxes until at least 2003
Content regulation	Communications Decency Act (CDA), February 8, 1996, and Child Online Protection Act, October 21, 1998, attempted to regulate content seen by some as obscene or harmful to minors (mainly graphic sexual content). The CDA was struck down by the Supreme Court for being too restrictive and inhibiting of First Amendment rights to freedom of speech and expression. The COPA was overturned by a Federal Appeals Court and has been heard by the Supreme Court. The Supreme Court did not strike COPA down altogether, but sent it back to the Appeals Court for more consideration.
Encryption	Policy on export of encrypted products. Developed by the Administration in cooperation with industry, law enforcement and privacy groups. Created in the fall of 1999. Allows U.S. companies to sell encryption products to most end users in global markets. The National Institute of Standards and Technology has developed a Federal Public Key Infrastructure to increase consumer confidence in electronic transactions.
Network (Net) Neutrality	Principle, which emphasizes the importance of open, neutral, and affordable access to the Internet especially to residential broadband networks. In essence, it argues that no bit of information should be prioritized over another.

Source : Based on Fomin. V et al, 2002 and revised by Author

3.2. German Experiences

Germany is predetermined to play an important role in the field of e-commerce due to its economic power and long tradition in industry sector. And the most important is e-commerce in Germany includes everything from basic electronic data interchange (EDI) to online shopping at sites like Amazon.de (Amazon.com). Indeed, the second-largest e-commerce company in the world, after Amazon.com, is a German mail-order firm, Otto (www.otto.de).

E-commerce in Germany also grows in the small companies, community forum, travel, traditional companies, department store chain, pharmacies and Business-to-business. In addition mobile phones are increasingly successful in generating sales (m-commerce), especially in the form of short message services (SMS) and ring-tone downloads. Thus, Germany is likely one of the successful country in adopting e-commerce. This section will investigate the contributing factors for e-commerce in Germany.

3.2.1. National Environment

3.2.1.1. Population and Demographics

With 82.3 million inhabitants Germany has the largest population of any EU member states. It has 231 inhabitants per square kilometer and one of the most densely populated countries in Europe which 88% of the populations live in cities[73]. This shows that the urbanization in Germany is high and urban areas typically have greater infrastructure and economies of scale. As a result, the penetration potential for various kinds of area such as technology, infrastructure and population has a higher level. Thus, telephone penetration, mobile penetration as well as Internet penetration is high and it is an important enabling factor for e-commerce in Germany.

According to Statistischen Bundesamtes (Destatis, 2007)-German Federal Statistical Office-nearly 70% of the population aged 10 years and above using the internet. Laptops and notebooks are the most popular equipment for the Internet access. Around 41% are using portable computers in 2007 while only 31% in previous year. The use of Computer (PC, Laptop and Palm PC) among household is increase, from 71% in 2006 to 73% in 2007. Moreover 65% of households have internet connection in 2007 compared with 2006 only 61%.[74]

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[73] Statistical Offices of the Lander and the Federal Statistical Office, available: http://www.statistik-portal.de/Statistik-Portal/en/ visited on May 4, 2008

[74] Destatis.de, 2007, "Nearly 70% of the population aged 10 years and above using the internet", Press release No. 486 / 2007-11-30

Table 3.8. Computer and Internet use of persons in the 1. Quarter 2007

Subject	All Use (%)	Age Group (%)		
		10-24	25-54	Over 54
Computer user	74	97	89	41
Internet User	68	94	84	33
Average Internet Use				
Each day or nearly each day	61	64	63	53
At least once in the week	26	25	25	31
At least once in the month	13	11	12	16

Source: Made by Author based on destatis.de, 2007

The ICT user's pattern (Table 3.8) in Germany shows that, almost three of fourth populations are familiar with the computer and the Internet. This is the important key driving factor for e-commerce in Germany.

3.2.1.2. Economy and Industry structure

Table 3.9 The Germany Macroeconomic Indicator 2002-2006 [75]

Indicator	**2002**	**2003**	**2004**	**2005**	**2006**
GDP in US$ bn	2,016.92	2,439.62	2,740.50	2,786.97	2,896.88
GDP per capita US$	22,980	25,600	30,730	34,780	36,810
GDP growth	0%	-0.19%	1.25 %	0.91 %	2.77 %

Source: Made by Author based on World Bank, "World Development Indicators Online"

Germany counts among the three largest economies in the world along with the United States and Japan, and the largest in Europe. As an industrial country, German economy is heavily export-oriented and leads the world in trade in research-intensive goods, along with the United States. Germany is also the biggest consumer goods market in Europe and therefore, of considerable interest economically, and especially for e-commerce purposes. In addition geographically, it is the central economic position in Europe, the considerable size of the German market and the high income of citizens, makes Germany notable in e-commerce business. Those factors have contributed importantly to German's e-commerce.

3.2.1.2.1. Firm Size, Industry Structure and Concentration

The German economy is still largely dominated by its manufacturing sector (see Figure 3.11). The automotive and chemical industries especially, have considerable importance for the German GDP and labor market. The primary sector—agriculture, forestry and fishing—was 0.9% of GDP in 2007. The secondary sector (manufacturing plus the building industry) with 30.1% of GDP is that part of the economy which is strongly export-

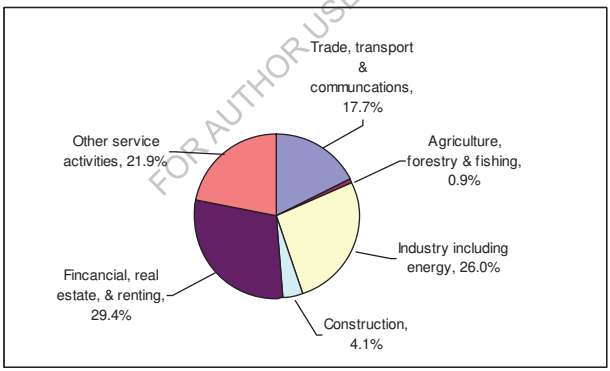
[75] Generated from: http://publications.worldbank.org/WDI/

oriented. Commerce, transportation and catering with 17.7% of GDP also contribute to the secondary sector.

The tertiary or service-orientated sector includes the finance and civil service, as well as all private businesses and service providers such as banks, telecommunications and assurances. This sector with roughly 51.3% of GDP is the dynamic base for e-commerce services and Internet distribution. This brief analysis of the German GDP shows considerable potential for e-commerce applications and market expansion, especially as the service sector is so large.

There also has been evidence that German industrial landscape shifted to outsourcing and off-shoring since mid 1990's[76]. In this landscape German big industry has been engaged in Asia for some time, to benefit from low labor costs and to supply the international markets from Asia. Moreover German mid-sized businesses are establishing ties with Eastern Europe, because the start-up costs are very much lower. Thus it shows that currently the German firms more global oriented rather than domestic oriented. It is an important driving factor for B2B e-commerce diffusion in Germany since German firms evolved the ICT and internet-based operation as their business channel.

Figure 3.11 German Production of GDP 2007



Source: Made by Author based on Federal Statistic Office 2008

3.2.1.2.2. Importance of Foreign Multinational Corporations

Table 3.10 shows that Germany is one of strong bases for foreign investment, with 9,193 foreign affiliates. It is the third only to the U. K and France. This should strategically position Germany to serve as a European base for e-commerce activities of foreign affiliates. Moreover, Germany may be a pioneer for numerous e-commerce applications and practices,

[76] See, Danninger. S and Joutz. F, "IMF Working Paper WP/07/24: What explains Germany's Rebounding Export Market Share?"

as the conditions are right to start in Germany first, and then begin to roll-out these applications and practices throughout Europe. In that sense, it seems that Germany may enjoy an initial strategic competitive advantage.

Table 3.10 Number of Foreign Affiliates of Selected EU Countries

Country	Year	Parent corporations	Foreign affiliates
Belgium	2003	991	2,341
Denmark	1998	9,356	2,305
France	2002	1,267	10,173
German	2005	5,855	9,193
Italy	2005	5,750	7,181
UK	2005	2,360	13,667

Source: Made by Author based on UNCTAD, "World Investment Report 2007" New York, 2007, p.217

The impacts of foreign MNCs on German SMEs and the diffusion of e-commerce are illustrated in the following case study, which provides information about a typical e-commerce transmission process from IBM to a larger mid-sized German SME in the machine industry—ARBURG GmbH. In recent years, IBM Germany has followed a strategy of supporting SMEs to better exploit ICT. IBM consulted and helped ARBURG to install and run the host system (WebSphere) together with the connection to the in-house network.

More than 1,000 PCs are in use throughout the company providing technical data processing (engineering support, bills of materials, operations sequencing) and accounting, controlling and other business applications. The ARBURG ICT network handles more than 800,000 transactions per day. ARBURG provides a central hosted shopping cart solution for spare parts with a 3% rebate for its foreign branches customers using the on-line shop. Since 2001, ARBURG had offered catalog data as commerce XML[77] (cXML) or CSV[78] files for its customers to enable them to do semi-automatic order processing. Furthermore, remote monitoring of the moulding machines is partly possible via the Internet. But first of all, Internet services improve the worldwide availability of product information to provide customers with fast access to the necessary information for ordering. Due to the focus on highly individual and customized spare parts support in the after sales market, ARBURG does not yet plan any participation in a public electronic marketplace. (Koenig, 2002)

[77] XML is a markup language for documents containing structured information. Its primary purpose is to facilitate the sharing of structured data across different information systems, or the Internet

[78] CSV (Comma Separated Values) file is a specially formatted plain text file which stores spreadsheet or basic database-style information with one record on each line, and each field within that record separated by a comma.

3.2.1.3. Human Resources

As reported by the Federal Statistical Office (Destatis, 2008), 329,800 students were aiming at a bachelor degree and 55,700 at a master degree in winter semester 2006/2007. Compared with a year earlier, the number of students in bachelor courses rose by 63% and those in master courses by 20%. Altogether, 1.98 million students enrolled in German institutions of higher education in winter semester 2006/2007 that was 0.3% less than a year earlier[79]. In addition the Destatis also reported, 15,400 graduates successfully finished their computer science studies in examination year 2006. That was 13% more than in 2005 and more than twice as many as in examination year 1997 (+117%). While the number of graduates in computer science varied between 6,000 and 7,000 graduations between 1997 and 2002 that field of studies has recorded two-digit growth rates since then[80].

The increasing number in literacy particularly on higher education and specialized in ICT has created potential Internet user as well as e-commerce participants in Germany. A survey conducted by NFO World Group (G+J, 2001)[81] refers to young people as a response group about their Internet use and final degree. In fact, most respondents had a secondary school graduation Certification Level I, but the highest Internet usage were people with higher education levels. These groups with high education levels were equal to the group of superior wage earners in the past. These are the important key factors contribute to the e-commerce diffusion in Germany.

3.2.1.4. Infrastructure

Germany has one of the world's most developed transportation and communication infrastructures. Intensive investment since reunification in 1990 has brought the undeveloped eastern Germany in line with that of western Germany. Transport and communications utilities in Germany have been liberalized following EU requirements.

3.2.1.4.1. Information and Communication infrastructure

Germany is among the world's leaders in telecommunications, served by a modern telephone system and 46.5 million main lines connected by fiber-optic cable, coaxial cable, microwave radio relay, and a domestic satellite system. The fiber-optic cables build up the densest network in the world. Cellular telephone service is widely available and includes

[79] Destatis.de, “Ever more students aiming at a bachelor or master degree”, Press release No. 354/2007-09-05

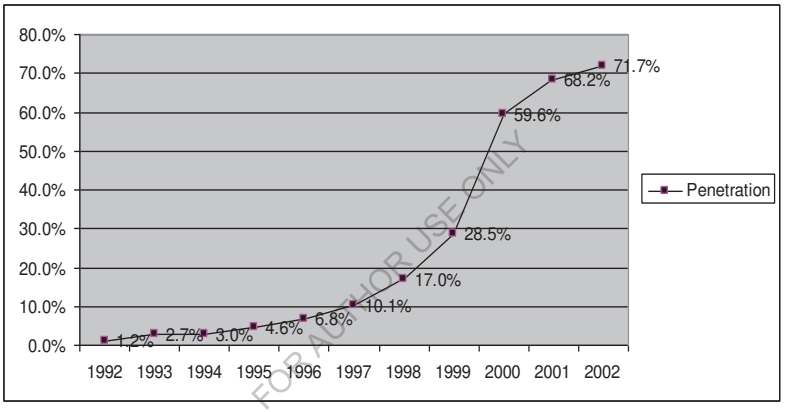
[80] Destatis.de, “13% more graduates in computer science”, Press release No. 072 / 2008-02-25

[81] G+J (Gruner und Jahr Elcetronic Media Service). 2001. On-line-Monitor Welle 7. Hamburg

roaming service to many foreign countries. Germany is one of the fastest growing markets for mobile phone equipment, and Germans owned 15.318 million mobile phones in 1999[82].

Mobile communications is one of the fastest growing areas in the German economy. Figure 3.12 shows that mobile penetration in Germany has increased dramatically from 1.2 per 100 inhabitants in 1992 to 7.1 in 1996 and to 71.7 per 100 in 2002. Some 99% of the German population is covered by mobile networks. As in most OECD countries, competition in Germany has led to the development of a wide range of innovative services, including value-added services in the e-commerce and m-commerce segments. For instance, DTAG's (Deutsche Telecom) subsidiary, T-Mobile, has been active in provision of Wi-Fi systems not only in Germany but elsewhere.

Figure 3.12. Mobile Telecommunication in German: Number and Penetration



Source: Made by Author based on RegTP, Annual Report 2002, February 2003.

Voice over IP In Germany, Voice over Internet Protocol (VoIP) services are not classified as voice telephony and do not therefore, require a license with RegTP only needing to be notified. Voice traffic takes up very little space on a broadband data pipe so expansion of broadband bandwidth could well lead to expansion of VoIP. At present, VoIP requires special phones and is considered of inferior quality to calls made over a normal telephone, but quality is improving steadily with technological developments.

The German Government recognizes that wide availability and take-up of broadband access is central to economic development and is endeavoring to accelerate broadband deployment, but there is virtually no competition in the broadband market. Broadband subscriber ship via DSL is widely available in Germany. Take up, which was about 8% of German households at the end of 2001, is expected to rise rapidly. However, by contrast with

[82] National Economies Encyclopedia, "Germany Infrastructure, power, and communications"

other telecommunications carriers in the OECD, Deutsche Telekom's sales of DSL slowed dramatically in 2002 compared with 2001. In 2001, the company sold 1.6 million DSL lines but in 2002 the increase in subscriber ship fell to 1.2 million lines.

DTAG is the dominant provider of broadband DSL services with a market share of 94%. By June 2003, DTAG had some 3.5 million customers using T-DSL (maximum 768/128 Kbps) or T-DSL 1500 (maximum 1504/192) (Deutsche Telekom, Telecom.paper, 17 March 2003). OECD data presented that in terms of broadband subscribers, Germany ranks 14th among OECD countries. DTAG had installed 2.5 million DSL lines ("T-DSL") as of 1 October 2002, while new entrants provided only 19,000 DSL lines on the basis of their own infrastructure, 190,000 DSL lines via full unbundling and a mere 15 DSL lines via line sharing. They offer an estimated 45,000 broadband connections via cable modems (OECD, 2004).

The positive effects associated with the penetration of broadband Internet are having a major multiplier effect on all sectors of the national economy and hence on the economy as a whole. Broadband Internet is enhancing and expediting communication and data exchange in the entire national economy and is contributing crucially to process optimization of those parts of the added-value chain involving the distribution of goods and services, as e-commerce shows: Germany plays a leading role in the electronic business not just within western Europe, accounting for 30 percent (EUR 203 billion in 2005). (ITU, 2006)

3.2.1.4.2. Transport Infrastructure

Transport and communications utilities in Germany have been liberalized following EU requirements. A dense and efficient network of motorways, railways, and waterways connects the country with major centers and the world. Its national Autobahn system of very well planned and designed roads permitting high-speed movement of vehicles is almost legendary. Based on these strong transportation backbones, the German transport sector with such major firms as German Parcel, UPS or Deutsche Post AG, can provide a one-day guarantee or even faster for all postal deliveries. After privatization of Germany's former monopolist Deutsche Post AG (then as part of the German PTT), the company still holds two-thirds of the postal market but looses more and more in competition with other niche service providers. The national railroad carrier, Deutsche Bahn AG (DBAG), was privatized in 1994 but still required government subsidies.

Germany's flagship air carrier, Lufthansa, is among the world leaders in the airline industry. Since the liberalization of air transportation in the European Union in 1997, Lufthansa has fought to retain its dominant position on Germany's internal routes. Marine transport is also developed, with major ports on the Baltic Sea, including Kiel, Rostock, and Luebeck, and on the North Sea, including Emden, Hamburg, Bremen, and Bremerhaven.

Major rivers ports are at Duisburg, Cologne, Bonn, Mannheim, and Karlsruhe on the Rhine; Magdeburg and Dresden on the Elbe; and Kiel on the Kiel Canal which provides an important connection between the Baltic and North Sea.

The well established transport infrastructure in Germany has contributed to the fast delivery system. In addition the privatization on the government transportation and delivery enterprises also created competitive prices that will be an incentive to the e-commerce business. Thus the Germany transport infrastructure is one of the contributing factors for e-commerce in Germany.

3.2.1.4.3. Enterprise Infrastructure[83]

The high tech industry in Germany is increasingly important as a driving force to economic growth. Increasing R&D expenditures after the worldwide economic recession in the early 1990 indicates continuous economic and structural change in Germany. The move towards a knowledge based service society is shown through technology based start-up companies. About 60% of them (27.000 formations) took place in the software industry. A second fast-growing sector is multimedia with an annual increase of approximately 150 companies. In 1995, about 600 multimedia start-up companies existed. The information society in Germany continues to develop on a high level. The trends and prospects of the information society are pointing in a positive direction. The global information society is currently preparing for another quantum leap; mobility, networking and convergence are developing ever more rapidly.

The German Software industry also contributed to the national enterprise infrastructure. The main focus and competency of the German software industry lies within user integrated software and software services. Almost half of all software development is performed by the users themselves in their internal software departments. The software industry itself consists of mostly smaller and middle sized companies. One outstanding example of the software industry is SAP AG, Walldorf. With its client/server enterprise application software, SAP is a market and technology leader in providing comprehensive solutions for companies of all sizes and all industry sectors. SAP gained revenues of DM 6,02 billion ($3.3 billion) in 1997.

Modern information and communication technologies (ICT) have become increasingly important for the German economy. The ICT sector's importance for the German economy as a whole has clearly increased over the past decade. While in 1994, ICT contributed only 4.7 percent to the GDP, this figure amounted to 6.8 percent in 2004. As far as gross valued added is concerned, ICT, with its €87 billion has surpassed mechanical

[83] The information is based on ITU, 2006

engineering and the automobile industry and now occupies the top rank. This trend will continue in the coming years, since the ICT sector is clearly growing more strongly than the economy as a whole, and it remains the driving force for business activities.

3.2.1.5. Financial Resources

3.2.1.5.1. Use of Credit Card

Germany still lags behind other European countries in credit card use, even though major cards (e.g. MasterCard, Visa and American Express) are gaining in acceptance. The most common credit card in Germany is the Eurocard, a cooperation partner of MasterCard. Due to high transaction costs for merchants and restaurants, most customers pay with debit cards. For this reason, the number of Eurocards in Germany (see Table 3.11) is significantly lower in comparison to France or the U.K. Due to the low penetration of credit cards in Germany, on-line payment is also low. This might hinder a faster diffusion of e-commerce, especially when on-line shops do not provide additional payment methods.

Table 3.11. Relative importance Payment Instrument in Selected EU Countries (%)

Country	Credit Transfer	Direct Debit	Credit Card	Cheques
Belgium	42.5	11.7	40.3	0.7
Denmark	21.6	14.2	62.6	1.6
France	17.5	18.3	37.6	25.6
German	42.2	42.8	14.2	0.6
Italy	29.6	13.3	34.3	12.6
UK	21.2	19.8	46.6	12.3

Source: Made by Author based on European Central Bank, 2007

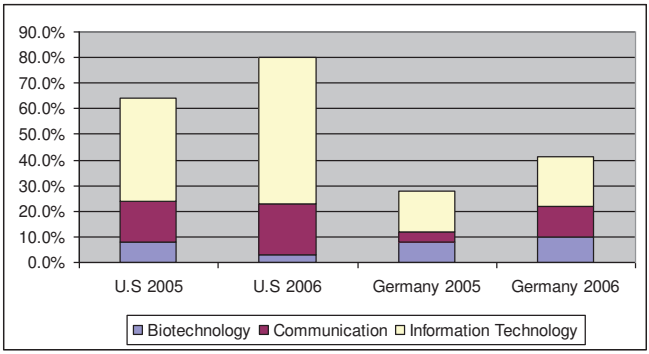
3.2.1.5.2. Venture Capital

The market for venture capital had developed very slowly in Germany, thus venture capital still plays a much smaller role than in the U.S. Moreover the comparatively large stock of unused funds held by German venture capital investment companies indicates that the very moderate rate of business start-ups over many years was not caused exclusively by shortages of financing bug also shortcoming in the informal market for venture capital and a lack of pioneering spirit[84]. In addition The Frankfurt Stock Exchange lags behind the London Stock Exchange—the most important in Europe with liquid capital readily available.

The venture capital was also minor importance in Germany in term of high technology investment. Compare with the U.S. which investment concentrated heavily on high technology especially on IT, Germany is still lag behind (Figure 3.13). This figure probably is the inhibitor factor for e-commerce diffusion in Germany.

[84] Deutshce Bundesbank, "The Market for Venture Capital in Germany", Monthly report, 2000

Figure 3.13. Investment in High technology by Venture Capital in Germany and U.S.



Source: Made by Author based on Deutsche Bundesbank, 2007

3.2.1.6. Business Readiness for E-commerce

3.2.1.6.1. Entrepreneurial Culture

Table 3.12. SME's E-commerce Readiness per Country and Sector (%)

	Denmark			France			Germany			USA		
	R	B	M	R	B	M	R	B	M	R	B	M
E-mail	100	100	100	94.1	96.8	97.2	100	100	100	98.0	100	100
Public Website	91.4	97.0	100	61.8	51.6	61.1	90.9	91.2	97.1	84.0	73.6	86.5
Intranet	74.3	78.8	96.9	67.6	71.0	61.1	69.7	82.4	91.4	44.0	58.5	55.8
Extranet	40.0	39.4	46.9	38.2	9.7	27.8	36.4	26.5	40.0	26.0	28.3	26.9
EDI	48.6	66.7	75.0	64.7	41.9	41.7	51.5	76.5	60.0	54.0	37.7	34.6
EFT	82.9	57.6	75.0	23.5	29.0	30.6	90.9	85.3	85.7	50.0	56.6	80.8
Call Centre	31.4	33.3	37.5	20.6	25.8	16.7	21.2	41.2	54.3	50.0	35.8	48.1

Source: Based on Beck et al, 2005
Note: R=Retail; B= Banking; M=Manufacturing

The Germany SME is not lack in the adoption of e-commerce, according to the study by Beck et al (2005) which investigated the diffusion and efficient use of e-commerce among SMEs in Germany, Denmark, U.S and France[85], there are some interesting findings in the area of e-commerce use US and German SMEs on average are leading, especially in the area of more sophisticated and complex applications such as EDI with customers or Internet-based supply chain management. Moreover in the retail/wholesale industry, German SMEs are at the forefront, deploying e-commerce applications such as on-line sales (55.9%), on-line

[85] Beck et al, 2005, "The Diffusion and Efficient Use of Electronic Commerce among Small and Medium-sized Enterprises: An International Three-Industry Survey", Electronic Markets, 15:1"

procurement (73.5%), EDI with suppliers (67.6%), EDI with customers (52.9%) or Internet-based supply chain management (44.1%) more often (Table 3.12).

More than 80% of the GNP is created in mid-sized companies (*Mittelstand*), which traditionally are considered as more flexible and innovative than large enterprises. The majority of these SMEs have Internet access. In addition the ICT based operation such as e-mail, web site, and EDI are familiar among SMEs (Table 3.13). The combination of global e-commerce readiness and the wide use of ICT in Germany SMEs has been a driver factor for e-commerce evolution in Germany.

Table 3.13. E-Commerce Readiness by Size of Firm and Industry (%)

Percent Using	Total [a]	Establishment size [a]		Industry [a]		
		Small [b]	Large [c]	Manufacturing	Retail	Banking
E-mail	**100**	**100**	**100**	**100**	**100**	**100**
Public Website	**91.8**	**91.7**	**100**	**90.5**	**92.0**	**94.5**
Intranet	**84.4**	**84.4**	**84.4**	**77.8**	**85.9**	**88.8**
Extranet	**22.3**	**21.7**	**51.5**	**38.8**	**15.9**	**36.6**
Accessible by Suppliers	**14.0**	**13.6**	**32.6**	**27.4**	**8.5**	**28.5**
Accessible by Costumers	**11.8**	**11.4**	**28.7**	**23.1**	**8.4**	**13.7**
EDI	**67.7**	**67.6**	**70.2**	**56.6**	**71.1**	**65.4**
EFT	**86.6**	**86.9**	**71.9**	**49.9**	**85.2**	**77.2**
Call Centre	**30.3**	**29.8**	**55.7**	**26.4**	**29.3**	**50.6**

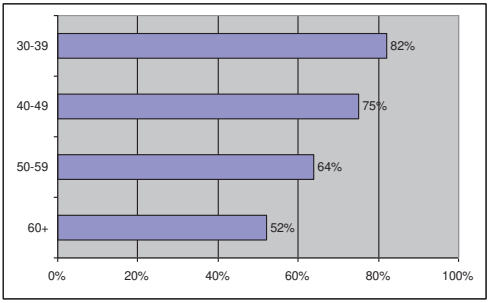
Source: Based on CRITO Global E-commerce Survey, 2002
Notes: [a] *Result are weighted by the total number of establishments in industry by size of firm*
[b] *Small firms are defined as firms with 25 to 250 employees.*
[c] *Large firms are defined as firms more than 25 to 250 employees.*

3.2.1.6.2. Customer Preferences and Attitudes [86]

Germany is the leading e-commerce market in Europe, 68% of Germans access the Internet at least once every month. Of these individuals, the number making purchases online continues to rise steadily. In Germany, as elsewhere, older people are less likely to shop online than the younger generations. However, of the Internet users over 60 years of age, more than half make online purchases (Figure 3.14). Germans who spend money online prefer German online shops. They make use of the available options, of saving delivery addresses on merchants' websites and of viewing previous transactions, and they appreciate delivery tracking, though this is only available at about 27% of online shops. Europeans tend to rely heavily on personal advice and recommendations—especially in Germany, where word-of-mouth is the most-cited influence leading to the decision to buy. This is evident in consumers' increasing participation in product ratings and reviews through portals specifically designed for sharing online shopping experiences. Hardly a negligible number, three-quarters of online shoppers reported reading these product assessments in 2007.

[86] The information is mainly adopted from: Müller. A et al, "Germany: E-Commerce 2007", The U.S. Commercial Service in Berlin, Germany

Figure 3.14. Online Shoppers to Total Internet Users in Germany By Age Group



Source: Made by Author based on EuPD Research: E-Commerce 2006

Germans, however, have a strong aversion to pop-ups, telemarketing and junk email. These were identified as the forms of advertisement German consumers would most like to ban. Internet advertisers beware: the use of pop-ups can unleash negative brand association. Floating ads are still generally seen as acceptable though – and should therefore, be used sparingly in order to avoid evoking similar anger.

Insufficient descriptions or poor product presentations lead to enough frustration already: nearly half of German online shoppers have at least once abandoned a potential online purchase due to this single type of oversight. Potential transactions were also terminated because of shipping costs and unacceptably long page loading times. Further holding German e-commerce back is the population's reluctance to transmit credit card and banking information electronically; in 2005, 25% of all online customers reported having discontinued a purchase in order to avoid paying by credit card or allowing merchants to debit their accounts. This mentality is slowly changing however, since 60% of all transactions in Germany were paid for via account debits in 2006. The most favored payment method, preferred by 85% of Germans, is bank transfers from the familiarity of their own bank's website. The chargeback rate for German shoppers has risen slightly – though only by less than 0.5%. The average chargeback fee for electronic debits is just under 5%.

Germans tend to be very price-conscious and they maintain this tendency on the Internet. The price paid for a basket of 10 goods purchased online in Germany averages EUR 521, much lower than the European average of EUR 750. Purchases tend to be done in smaller batches, though: more than 43% of the online retail sales among German shoppers were worth less than EUR 10.

3.2.2. Government Policy

In Germany, the e-commerce directive was enacted in national law (Gesetz zum elektronischen Geschäftsverkehr (EGG)) on December 21, 2001. This meant a full implementation of the country of origin principle in German law.

3.2.2.1. Competence Government Institutions

There are a number of institutions that also provide e-commerce directives as shown in Table 3.14 below.

Table 3.14. Important Policy Institution in Germany

Institution	Policy Roles Regarding E-Commerce
Federal Ministry of Economics and Technology	Responsible for all federal SME and EDI related e-commerce projects: SME IT competence center, Co-funding of SME e-commerce projects most projects and funding are co-operations with the EU and the local states
Federal Ministry of Education and Research	Responsible for all federal e-education and research related topics: Schools on-line, BAFÖG-on-line (federal student subsidies program)
Federal Ministry of the Interior	Responsible for all e-government and e-administration projects: e-procurement, e-form server (www.bund.de)
Federal Ministry of Finance	Responsible for tax related e-government services: ELSTER (electronic income tax declaration)
Federal Ministry for Health	Responsible for all e-health related topics. Projects: e-telematics, e-patient file, e-recipe
Department of Trade and Industry[a]	Issued a first Draft for the implementation of the Ecommerce Directive (2000/31/EC dated 8 June 2000). The Draft called 'Electronic Commerce Act' (dated 1 December 2000) mainly provides for changes and amendments to the German Teleservices Act from 1997

Source: Koenig, 2002 and revised by Author
Note : [a] Wuermeling, 2001

3.2.2.2. Enabling Policies

3.2.2.2.1. Telecommunication Liberalization

The Deutsche Bundespost (DBP) was a largely autonomous administration on the federal level providing postal, telecommunication and banking services. On July 1, 1989 the first level of deregulation of the telecommunication market, the Law for Restructuring the Postal Services and Telecommunications, was implemented. With the 1989 Reform, the Federal Ministry of Posts and Telecommunication (BMPT) and the Postal Telephone and telegraph (PTT) were separated and three separate public enterprises were formed the operations of the PTT. The Deutsche Bundespost TELEKOM is for the field of telecommunications, Deutsche Bundespost POSTDIENST for postal services, and the Deutsche Bundespost POSTBANK.

The network monopoly was upheld only as a monopoly for pure physical transmission. Since July 1, 1989 private operations were allowed to offer switching services and to use their own switching equipment in order to provide value added services. Private

activities were also allowed in the areas of satellite systems and mobile communications, as long as the monopoly in speech transmission was not significantly affected. Thus satellite transmission was limited up to 15 Kbit/s and mobile communication was restricted to two carriers - being the PTT. Mannesmann Mobilfunk was granted a license to operating the digital cellular D2-net as the first private telecommunication company in Germany on February 15, 1990.

Further steps of liberalization were taken with the Telecommunication Act of July 31, 1996. The Act provides the basis for the transformation of the German telecommunication market form a monopoly to an efficient competitive environment. After July 1, 1996 licensing for alternative infrastructure were permitted. Further liberalization provisions did not become effective until January 1, 1998.

In 1996 Deutsche Telekom AG has been transformed into stock corporations with a first initial offering off 2million shares in fall 1996. The Federal Ministry of Posts and Telecommunications (BMPT) have been resolved by the Regulatory Authority for Telecommunications and Posts (Reg TP) on January 1, 1998. The Reg TP is a higher federal authority within the scope of business of the Federal Ministry of Economics. Its functions are specified in the Telecommunications Act (TKG) and in the Postal Act. Table 3.15 shows the Germany telecommunication deregulation overview.

Table 3.15. Deregulation Overview

Telecommunication Area	Deregulation Date	Deregulation Law
Telecommunication Networks	July 31, 1996	The Telecommunication Act
Voice telecommunication services (except wireless)	January 1, 1998	The Telecommunication Act
Wireless telecommunication services	July 1, 1989 (first license Feb. 15, 1990)	Reform of 1989
Satellite transmission (15 Kbit/s)	July 31, 1996	Reform of 1989
Switching services	July 1, 1989	Reform of 1989
Equipment	July 1, 1990	Reform of 1989
Cable TV	July 31, 1996	The Telecommunication Act

Source: Made by Author based on Simon, 1998

Even though the telecommunication market can only be accessed after obtaining a license, the act is considerate liberal since licenses may only be limited due to technical restrictions such as limited frequencies. Additional directives to the Telecommunication Act have proven the Regulatory authority to be in favor of competition and consumer protection. For example is the regulation on pricing of interconnections July 1997. Furthermore, several actions of the Deutsche Telekom to sustain their market position have been rejected.

Before liberalization Germany was considered to have the highest prices in the OECD, in particular for international long distance calls. Since the German voice telephony market was deregulated on 1 January 1998, there has been a big drop in the price of long distance calls as a result of competition. RegTP estimates that prices for some national long distance calls during weekdays are now only about 7% of what they were during the monopoly period. Since 1998, competition has driven down the price of international calls by as much as 95%.

3.2.2.2.2. Telecommunication Broadband Policy

The Regulatory Authority for Telecommunications and Posts (RegTP) was an early mover in awarding WLAN frequencies. In July 2002, RegTP conducted a public consultation on the proposed general frequency assignment for WLAN concluding that WLANs would not pose a threat to Universal Mobile telecommunication Systems (UMTS) and that the two systems would complement each other to benefit market players. On this basis, RegTP decided to provide frequencies in the 5 GHz band for new WLAN applications in addition to those in the 2.4 GHz band. In November 2002, RegTP published a general assignment of frequencies in the bands of 5GHz (5150 MHz – 5350 MHz and 5470 MHz – 5725 MHz) for general use of WLANs without charge[87]. Germany was the first EU member state to do so[88]. In the interests of technological neutrality a specific technical standard was not prescribed thereby enabling manufacturers to place flexible and innovative solutions on the market and thus enhance prospects of achieving high consumer take-up. This ruling is consistent with the need to foster multiple broadband access platforms. In the second half of 2003 there were 30 providers operating about 1,600 hotspots in Germany.

3.2.2.2.3. Tax treatment of Electronic Transaction

The European Union agreed in 2002 on a single approach to taxing electronic commerce. From July 2003, therefore, Germany has levied value-added tax (VAT) at the regular rate of 16% (19% from January 1st 2007) on goods sold over the Internet by non-EU businesses. This tax also applies to digital services such as data storage or online media subscriptions. In business-to-business transactions, the EU-based business accounts for the VAT. In business-to-consumer transactions, the vendor must ensure that the appropriate VAT is included in the sale prices and paid to the tax authorities in the EU. Thus, e-commerce

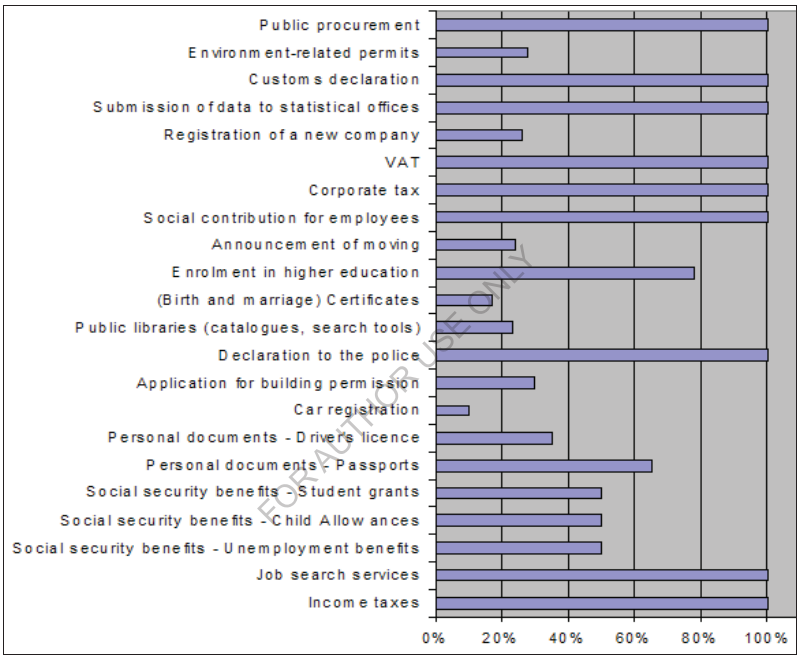
[87] RegTP Press Release, "WLAN frequencies in the 5 GHz band available for general use," Bonn, 13 November 2002.

[88] Germany's action was consistent with a later EC recommendation that asks member states to facilitate the use of WLAN and subject the use of available radio spectrum to the least onerous authorisation system. Ëuropean Commission adopts recommendation to promote public broadband services in Europe," europemedia.net, 21 March 2003.

firms are, by German law, required to pay the German value-added tax (VAT), if the firm's plant is located in Germany (has nexus) or if the product's origin is Germany. Therefore, both traditional catalog sellers and new e-commerce traders have to follow the same standards.

The businesses that collect the VAT are allowed to deal with just one tax administration and to complete their obligations online. Revenue is subsequently re-allocated among member-states based on the country of consumption and the appropriate national tax rate.

Figure 3.15. E-government Services Available On-line in Germany 2005



Source: Made by Author based on, EC; Summary Report Web-based Survey on Electronic Public Services2005

3.2.2.2.4. E-government Initiatives

E-government is another important driving force for additional growth in the ICT sector and for the transformation of Germany into an information society. The Federal Government, the Federal States and the municipalities are promoting the expansion of e-government services involving all levels of government (Figure 3.5). E-government has the potential to promote a cultural change through the use of new technologies, to contribute to the consolidation of budgets and the reduction of bureaucratic costs in Germany. Individual municipalities have already achieved remarkable successes, although others show a great need to make up for lost ground.

The e-government initiatives are centrally coordinated by the Federal Ministry of the Interior, in contrast to the private e-commerce initiatives led by the Federal Ministry for Economic Affairs. Therefore, the e-government projects in Germany are uniform at the federal levels, but vary from state to state, and city to city administrative units. Figure 3.5 depicts government services offered by the German government and administration. The Figure also sows the degree of availability among the provided e-government applications.

3.2.2.2.5. Adjustment to the Legal Framework of E-commerce

Table 3.16. The Germany E-commerce-related legislation and policy action

Legislation	Provision
Intellectual property	Software is not patentable in Germany; instead, it is protected under the copyright laws. A new copyright law in force since September 2003 outlaws digital copies made from illegal sources even when they are only for private use. It also makes the bypassing of anti-copying devices illegal, and punishable with fines or even prison sentences when done for commercial purposes. But the law also expands the number of instances when users may make copies, especially in schools and research institutions for use in their intranets. Passage of this law brought German copyright law in line with the World Intellectual Property Organization Copyright Treaty and the Performances and Phonograms Treaty. An amendment to this law (which parliament had not yet approved by end-July 2006) would end the tolerance for private copies made from protected digital sources in small numbers. Under the proposed bill, authors and artists and the makers of copying and storage devices would agree on a licensing fee to be added to the price of the device. The e-commerce law covers the legal responsibility of Internet service providers (ISPs) for the content that users offer on their sites. Under this law (Gesetz über rechtliche Rahmenbedingungen für den elektronischen Geschäftsverkehr, BGBl. I 2001 S. 3721), ISPs need not search the information that they store or transfer for illegalities, and they cannot be held liable without concrete evidence of their own wrongdoing.
Consumer Protection	Germany e-commerce law strengthens consumer protection and privacy, thereby tightening the 1997 electronic data-protection law (Teledienstedatenschutzgesetz, BGBl. I 1997 S. 1870). Under its provisions, e-commerce companies must inform their customers if they collect personal data that could identify the customer. Customers must consent in writing for their data to be used for advertising purposes. The e-commerce companies must delete the data if the user revokes the agreement. Otherwise, the company may collect personal data only for billing purposes and must ensure that third parties do not gain access. The law also sets strict rules requiring e-commerce firms to provide extensive information about themselves on their websites, ranging from address and telephone contacts to their tax-registration numbers. Disputes involving consumer rights are dealt with by courts in the company's country of residence (whereas in all other questions, the law of the consumer's country of residence applies). A law in effect from July 2004 makes unsolicited e-mail advertising, or spam, illegal unless the consumer agrees to receive such mail. An additional bill was passed in June 2006, under which concealing the sender or the advertising nature of e-mails is subject to a fine of €50,000. Senders from abroad, however, are not affected. A law on the sale of financial products via the Internet, telephone or fax, entered into effect in December 2004, transforming an EU directive of 2002 into national law. Under the law, financial-service providers (such as credit-card companies or unit trusts/mutual funds) have to inform potential

	customers of prices, payment, contract law and risks before a contract is signed. The customer has the right to withdraw from a contract until 14 days after its conclusion (30 days for pension insurance, zero days for price-sensitive deals such as currency trading). Banks have warned about attempts to steal account and PIN numbers (known as phishing) from online banking customers. Banks have responded by introducing indexed transaction numbers. Under this system, a specific number from a list of numbers previously handed to the bank customer must be entered upon prompt before a banking transaction can be carried out. The Voluntary Self-Control of Multimedia Service Providers (Freiwillige Selbstkontrolle Multimedia www.fsm.de) is an association that promotes self-regulation of service providers under a shared code of conduct. It offers a complaint office that can take action against its members. Membership is voluntary.
Contract law and dispute resolution	Requirements of an electronic contract. Contracts concluded via the Internet follow the same rules as conventional contracts. Consumers have the right to withdraw from most contracts within 14 days (with the exception of certain items such as food or travel tickets). When e-commerce companies do not comply with the law (for example, by not giving their contact information), the time period is extended to six months. Germany's law on electronic signatures (Gesetz über Rahmenbedingungen für elektronische Signaturen, BGBl. I 2001 S. 876) creates the legal framework to conclude Internet-based contracts. It establishes three types of electronic signatures: simple, qualified and with state accreditation. To obtain state accreditation, the Regulatory Authority for Telecommunications and Posts (Regulierungsbehörde für Telekommunikation und Post) must verify the company's information-technology infrastructure and the existence of qualified staff. Companies may opt for state accreditation to use the official seal as a marketing tool. Jurisdiction of e-commerce disputes. Under the European Union's e-commerce directive and the German e-commerce law, the law of the company's country of residence applies. (This is different from the jurisdiction of conventional cross-border trade, where the law of the customer's country of residence applies.) This should benefit Internet companies, because they no longer have to take into consideration many national rules and regulations when selling to customers abroad. There is one important exception, however, to the law on e-commerce jurisdiction: the law of the consumer's country of residence applies in matters of consumer protection.
Classification of e-commerce transactions	Physical goods ordered via the Internet are considered regular transactions, requiring payment of value-added tax (VAT). If they are imported into the European Union, they are also subject to import duties.
Compliance and enforcement issues	The German copyright law sets fines or even prison sentences for copying files from illegal sources or breaking anti-copying devices. The German e-commerce law sets fines of up to €50,000 for companies violating privacy rights. From 2002 the laws of the country of origin of e-commerce transactions (that is, of the vendor company) applies for legal enforcement, except where consumer rights of the end-customer are concerned. For tax purposes, the country-of-destination principle applies; this requires non-EU companies to register in an EU member-state of their choice.

Source: Summarized from the Economist Intelligence Unit, 2006 by Author

3.3. Japanese Experiences

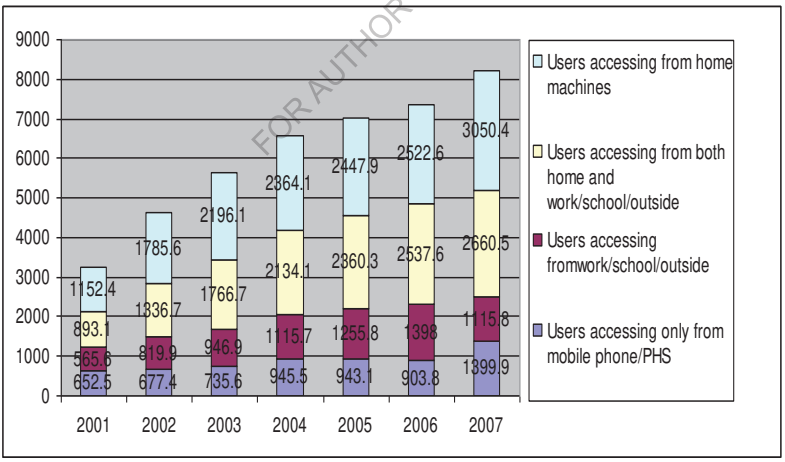
3.3.1. National Environment

3.3.1.1. Population and Demographics

Japan with total population more than 127 million[89], has 87.5 million Internet users in 2007. Compared with the year 2000, the internet users were only 47 million; this means that during 7 years user growth reach 85%. With the high number of Internet user, Japan accounts the second rank in Asia after China which has 210 million users. But in term of internet penetration, Japan has higher penetration (68.7%), this made Japanese people has higher internet access after Korea and Hong Kong[90]. This demographic profile of the accessibility to the Internet access has been a driver for Japan engages into internet and e-commerce as well.

According to Shibatani (2007), the current trend shows that most of Japanese people (around 37%) prefer use internet at home. The increase is especially because of the popular use of the home equipments and mobile phones. School and work place is another common place to access Internet, with percentage 13% and 32% respectively. In addition, 17% of the users access the Internet by using mobile phone only (see Figure 3.16).

Figure 3.16 The Number of Internet Users by Location and Terminals (in million)



Source: Made by Author based on Shibatani, 2007

[89] Statistics Bureau, 2008 "Population Estimates by Age (5-year group) and Sex, Monthly Report.

[90] The information is derived mainly based on: Internet World Stats "Internet User in Asia December 2007", available: http://www.internetworldstats.com/stats3.htm visited on: May 29, 2008

3.3.1.2. Economy and Industry Structure

Table 3.17 Japan Macroeconomic Indicator 2002-2006 [91]

Indicator	2002	2003	2004	2005	2006
GDP in US$ bn	3,918.34	4,229.10	4,605.94	4,549.11	4,368.43
GDP per capita US$	33,240	33,420	36,690	38,930	38,630
GDP growth	0.26 %	1.41%	2.74%	1.91 %	2.20%

Source: Made by Author based on World Bank, "World Development Indicators Online"

According to World Bank, Japan's Gross Domestic Product was US$ 4,368.43 billion in 2006. Japan's GDP grew steadily from 2002 to 2006 ranging from 0.26% to 2.74%. During 2004 Japan enjoyed the highest growth, in 2005 the growth only 1.91% and grew 2.2% in 2006. With GDP per capita US$ 38,630 Japan is one of the wealth countries, those macro indicators have been an important factor for Japan in adopting new technology such as Internet as well as e-commerce.

3.3.1.2.1. Firm Size, Industry Structure and Concentration

Japanese industrial structure changed dramatically after the war, primary industries such as agriculture and forestry have rapidly declined. Secondary industries include mining, constructing and manufacturing, raised the ratios during the industrialization period in the 1950s-60s. The most notable feature of Japan's economic growth since the war is the rapid development of manufacturing, with progress in quantitative growth, quality, variety, and efficiency. Manufacturing has played the leading role in economic development. The most remarkable Japan's manufacturing industries are electronic (microelectronic technology) and automobiles. Since the 1970s, the tertiary sector's such as finance, communication, and services proportion in the industrial structure has continuously increased (see Figure.3.17).

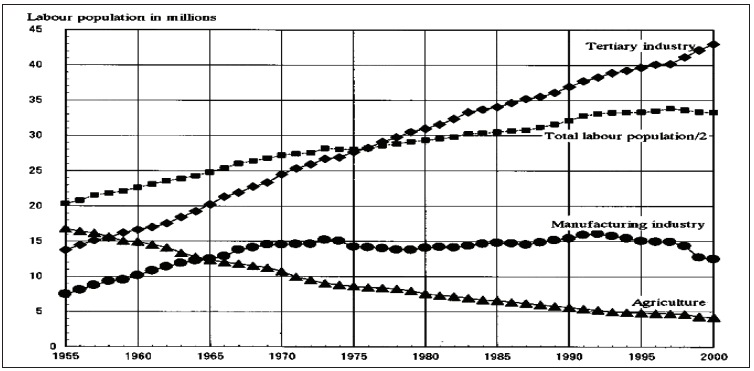
This shift is a main trend in Japan at present, currently the tertiary sector's working population rose to 69% in 2005, and the GDP reached more than 70%. As the tertiary sector is made up of diverse activities which offer various services to people and institutions, such a change of industrial structure is called a shift to the service industry (Kabori, 2008). The shift has been a contributing factor to e-commerce since the tertiary sectors (finance, services, and communication) evolved ICT in the operations.

According to United Nation Statistics (2007), the manufacturing sector accounts for 20 percent of GDP. The major manufacturing sub-sectors include electric/electronic, precision equipment, automobiles, general machinery, and chemicals. The wholesale and retail sector accounts for 13 percent of GDP, among wholesalers, food and medicine are the largest sub-sectors. By number of stores, the 100-yen shops, drugstores, and casual wear are the largest

[91] Generated from: http://publications.worldbank.org/WDI/

retail sub-sectors. Japan has strong retail networks which outlets located either in urban or sub-urban area. In addition those networks have evolved ICT in the services in which allows customers to place orders online and then pick them up and make payment at a local store.

Figure 3.17. Trend of Labor Population in Japan's industries, 1955–2000



Source: Based on Hitomi, 2004

The retail networks also encourage B2C e-commerce, because such retail networks are located in urban areas with concentrated economic activity and high Internet usage, and they might adopt "click and mortar" strategies of integrating their physical and virtual infrastructures for competitive advantage. However, in a high density may also lead to strong traditional retail networks that compete with online purchasing customers. Thus, it might be an inhibitor to B2C e-commerce, as customers find convenience shopping in the retail outlets.

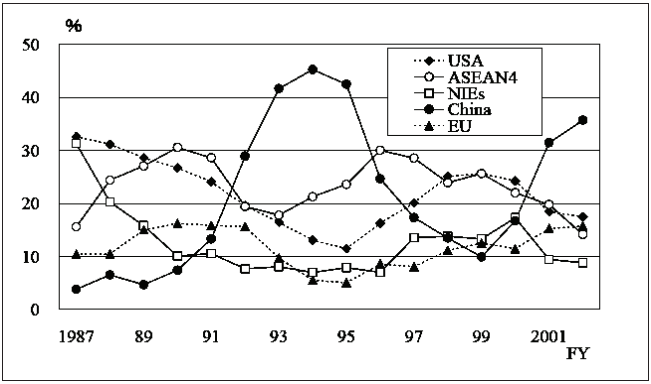
3.3.1.2.2. Importance of Foreign Multinational Corporations

After the soaring yen in 1985, the manufacturers depending on export began to relocate the production base to Asian nations. Especially after the middle of the 1990s, many manufacturers such as consumer electronics, general machinery, pottery, cement and automobiles have moved the production base to China for the cheap production and the rapidly growing market. According to Yoshida (2004)[92], in fiscal year 1990 less than 10% of new operations Japanese affiliates in the region were set up in China, but by fiscal 1994 the share was approaching 50%. After 1994, however, China began losing share to the ASEAN4 (Indonesia, Malaysia, Philippines, and Thailand). Following the devaluation of the Thai baht in July 1997 and the Asian financial crisis it touched off, however, new investment in the ASEAN4 declined. Starting in latter half of the 1990s, Japanese firms began launching more operations in the USA, attracted to the high U.S. economic growth rate during the ICT boom.

[92] Yoshida. M (2004), "Expanding Japanese Presence In East Asia Reflects Shift To Offshore Production", JETRO Working Paper.

The Japanese presence in the EU also increased, encouraged by European economic integration (Figure 3.18).

Figure 3.18. New Foreign Operations by Japanese Manufacturers



Source:Based on JETRO, 2004

Those changing structure on Japan industry particularly on relocation has shifted the industries to offshore bases within the region. In addition it also changed the particular operations such as production, sales, and coordination with the affiliates companies. The shifting industries have been a driving factor to B2B e-commerce adoption as the firms evolved ICT in the production, sales and coordination processes.

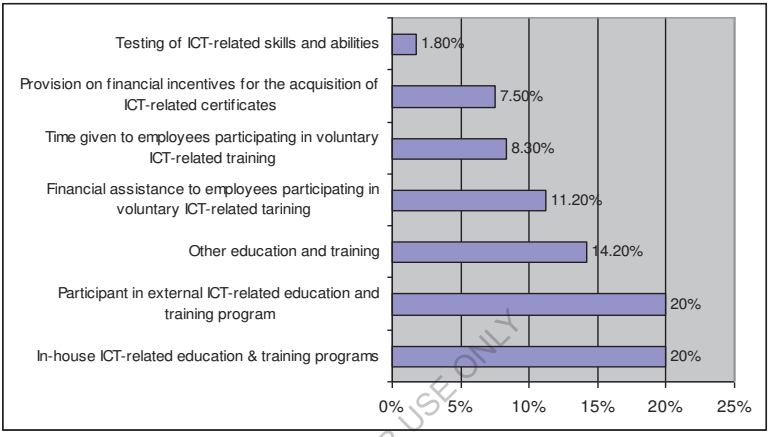
5.3.1.3. Human Resources

According to Ministry of Internal Affairs and Communications, in fiscal year 2002, there was one educational use computer for every 9.7 pupils at public schools, and 99.5% of public schools were connected to the Internet. High-speed Internet connections at over 400 kbps were available in 56.8% of all public schools and 29.2% of regular classrooms had LAN installations. In fiscal 2002, 58.0% of schools have their own website, showing an upward trend. In fiscal 2002, 87.6% of teachers at public schools knew how to operate computers, and 52.8% of teachers were able to use computers to conduct their classes.

The use of ICT in corporate activities has both spread and expanded with the introduction of various information systems for e-commerce and greater business efficiency. The importance of developing and maintaining well-informed human resources to address the growing corporate competition arising from the creation of new services, and deal with the threats of unauthorized access and virus infections, is increasing. In-house ICT training is offered by 53.2% of companies, with the most common contents being “in-house ICT-related education and training programs” and “participation in external ICT-related education and training programs” at 20% (Figure 3.19).

According to a study conducted by the Ministry of Education, Culture, Sports, Science and Technology, 15,318 people obtained a master's degree in an ICT-related field in fiscal 2002, with 1,790 obtaining a doctoral degree. The ICT education readiness is the important factor for e-commerce in Japan, as the human resources have been familiar with the internet as well as e-commerce.

Figure 3.19. Types of ICT Training for Employees by Corporation



Source: Made by Author based on MPHPT, 2004

3.3.1.4. Infrastructure

3.3.1.4.1. Information and Communication Infrastructure

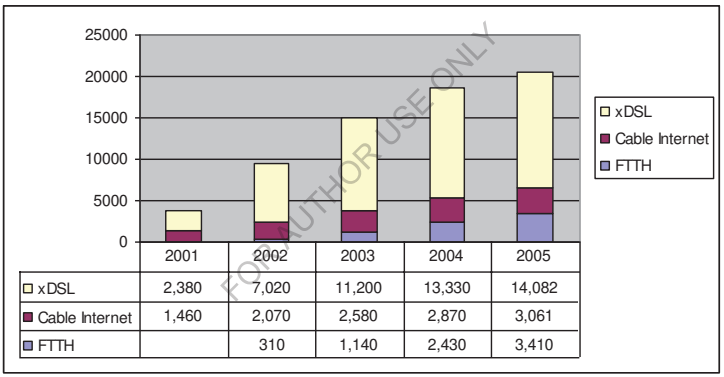
Japan's information and communication infrastructure is highly affected by the ICT policy. In 2000 Japan created its Information Technology Strategy Council and also established its "Basic IT Law," which was immediately followed by its "e-Japan" strategy in January 2001. In 2003, the government expanded its goal to promoting broadband demand with the "e-Japan strategy II." These programs provided a combination of subsidies, tax incentives, and low or zero-interest loans for broadband providers, triggering 220 projects in 2001 and helping to achieve the goal of offering 30 million households high-speed broadband access by 2004. The government followed with its "ubiquitous-net Japan"[93] ("U-Japan") strategy of 2004, with the added goal that by 2010 every device (such as mobile phones, personal digital assistance, even household appliances) would be connected to the network

[93] "u-Japan" is what Japan will be like in 2010 when information and communications technology (ICT) will be applied toward resolving various problems in society. It is based on four principles: ubiquitous (connects everyone and everything); universal (can be easily used by the elderly, etc.); user-oriented (based on users' viewpoints); and unique (creative and vigorous). (MIC, 2005)

and able to be managed at any time and in any place[94]. In addition, the Japanese government emphasized the importance of closing the gap between urban and rural areas by establishing the IT New Reform Strategy in 2006 with a goal to provide broadband services to every household by 2010. Those initiatives have increased the Internet population in Japan which has grown 85% during 2000 to 2007.

Broadband internet access in Japan is among the cheapest in the world (on the order of US$ 50 per month for unlimited use), and broadband internet access (mainly ADSL) penetration was 25% in 2002, and it was 75% in 2006. Fiber to the home (FTTH) is being rolled out right now; at the end of 2004 there were about 2 million FTTH connections. Internet infrastructure and services continue to expand strongly in Japan driven by competition between the incumbent NTT and newcomers, especially Softbank. A new broad-band economy is growing in Japan, new services based on a broad-band society, e.g. DVD downloads via FTTH and ADSL, and new business models are emerging[95].

Figure 3.20 Internet Access in Japan (x 1000 users)



	2001	2002	2003	2004	2005
xDSL	2,380	7,020	11,200	13,330	14,082
Cable Internet	1,460	2,070	2,580	2,870	3,061
FTTH		310	1,140	2,430	3,410

Source: Made by Author based on MIC, 2006

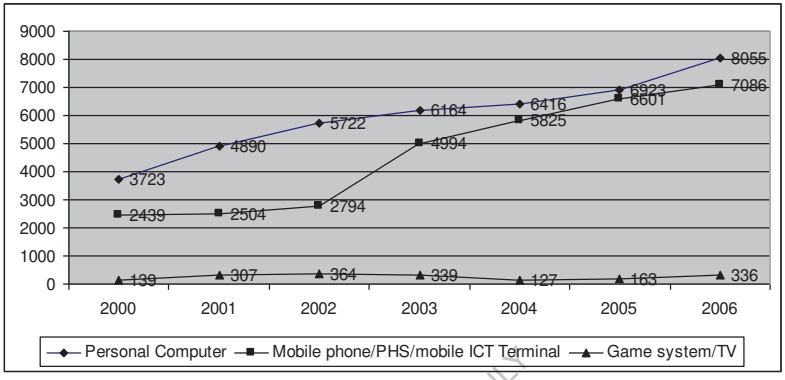
Mobile ICT terminals have made a drastic advancement due to the progress in the technologies to produce smaller and lighter devices and the advancement of wireless communication technology. The direction of the advancement can be characterized as a move toward "multi-function" and "networking." With mobile phones and other mobile ICT terminals equipped with various functions and connected to networks, the terminal functions will be further advanced. According to Japan Ministry of Internal Affairs and

[94] Taniwaki. Y, "Broadband Competition Policy to Address the Transition to IP-Based Networks: Experiences and Challenges in Japan", Tokyo: International Foundation for Information Technology, October 2006: 10-11.

[95] Eurotechnology Japan KK, 2007, "JapanBB - towards a new broad-band society"

Communications (2007), the progress of mobile diffusion plays a central role in allowing access to networks anytime and anywhere. The number of Internet users via mobile phones, PHS or mobile ICT terminals as of the end of 2006 came to 70.86 million, an increase of 1.63 million from the previous year (Figure 3.21).

Figure 3.21. Changes in the Number of Internet Users by ICT Terminal



Source: Made by Author based on MIC, 2007

3.3.1.4.2. Transport Infrastructure

Japan has a particularly well-developed transport infrastructure as well as transport industry. Japan's transport system is highly developed, with road and rail networks covering virtually every part of the country together with extensive air and sea services. These are the basic requirements for the fast and safe delivery system, packages are sent by the evening can be delivered almost anywhere within Japan the next morning. The well-developed delivery system will be a contributing factor to the success of e-commerce operation.

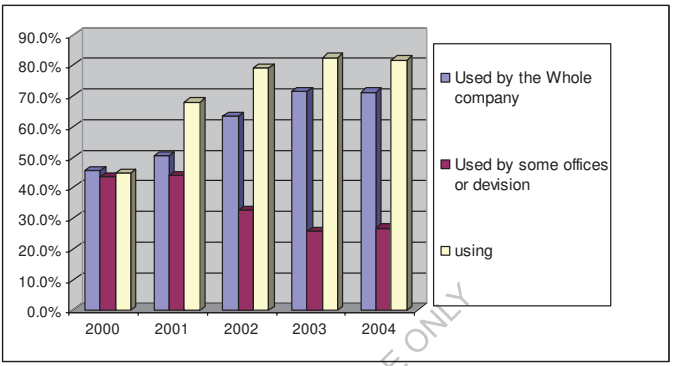
Japan Post is a dominant postal and package delivery company in Japan. Since the "Law Concerning Correspondence Delivery by Private-Sector Operators" was enforced on April 1, 2003, private-sector operators have been allowed to engage in correspondence delivery business. Therefore, companies such as Yamato Transport Company, Nippon Express Company, Fukuyama Transporting Company, and Seino Transport Company compete fiercely to provide better delivery services for both corporate and individual customers. It also provides customers more alternatives on delivery services. In addition, some companies such as Yamato Transport Company provides parcel acceptance service through convenience store chains that allow customers send the package at the closest stores and pay the bill at the same time.

Japan’s delivery companies have special feature on the payment system beside payment through convenience store chains. They also have developed a payment system

(*shuukin*) where their employees collect money on behalf of the seller for items they deliver to customers. It has provided an efficient and safe payment system. Thus, the advance of delivery system which has provided conveniences, efficient and safe transport and payment systems in Japan are key services stimulating online sales as well as e-commerce.

3.3.1.4.3. Enterprise Infrastructure

Figure 3.22. Transition in the Internet utilization rate



Source: Made by Author based on MIC, 2005

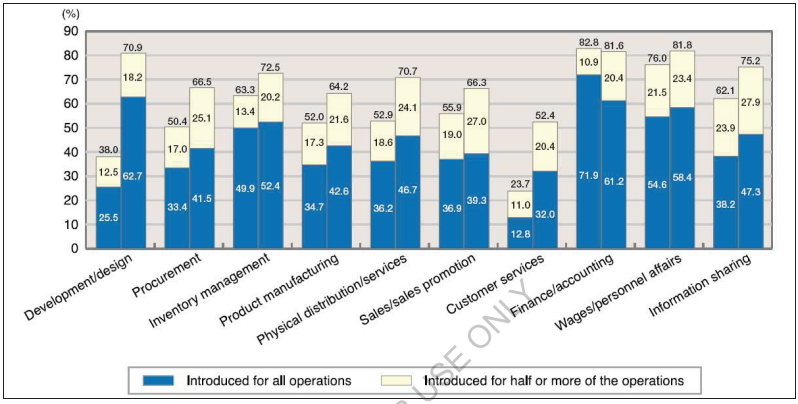
The introduction of Internet to the Japanese companies' operation currently has been intensified. Japanese companies' Internet utilization rate increased by 8.8 points from 89.3% at the end of 2000 to 98.1% at the end of 2004, which indicates that most companies are using the Internet. The Internet utilization can be seen in Figure 3.22, the utilization rates at business establishments increased by 37.0 points from 44.8% at the end of 2000 to 81.8% at the end of 2004.

ICT systems have been introduced to Japanese companies, the ICT systems are generally introduced for two main purposes: reducing costs/improving operational efficiency and expanding sales/increasing added value. In addition, the introduction is particularly noticeable in areas of development/design and customer services, the detail transition in the introduction of ICT system among companies can be seen in Figure 3.23. The figure shows the introduction of ICT systems for the companies' operations in 2002 and 2004. The ICT systems mostly have been introduced by the Japanese companies' in the all business operations.

The introduction Internet and ICT system into Japanese companies' operation have been an important factor for the enterprise infrastructure readiness toward on line business. In addition these have brought actual effects for companies, which found effectiveness both in terms of reducing costs/improving operational efficiency and expanding sales/increasing added value. Figure 3.24 and 3.25 show that during 2002 and 2004, the number of companies

that introduced ICT systems for "reducing costs/improving operational efficiency" decreased, while those that introduced the systems for "expanding sales/increasing added value" increased. This shows that the conventional tendency of Japanese companies to link introduction of ICT with improvement of operational efficiency has been undergoing changes over the past two years[96]. Furthermore, these are important factors that contributed firm readiness toward e-commerce adoption.

Figure 3.23. Transition in the introduction of ICT systems by type of operations (left: 2002; right:2004)



Source: Based on MIC, 2005

Figure 3.24. Purpose for introducing ICT systems (reducing costs/improving operational efficiency)

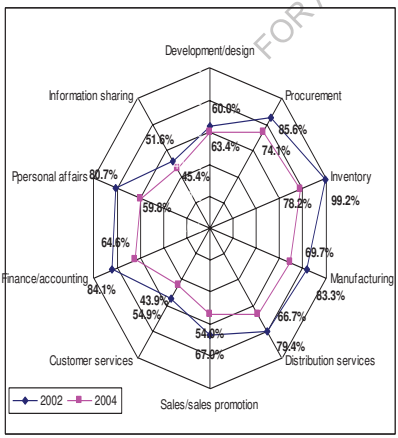
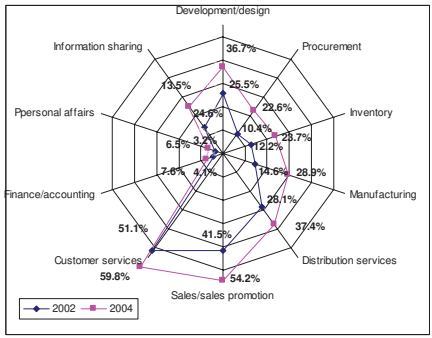


Figure 3.25. Purpose for introducing ICT systems (expanding sales/increasing added value)



Source: Made by Author based on MIC, 2005

[96] Ministry of Internal Affair and Communication, 2005, "Information and Communications in Japan 2005" White Paper

3.3.1.5. Financial Resources

3.3.1.5.1. Use of Credit Cards

The use of credit cards is considerably low[97] in Japan; however that is not a factor hindering companies from doing business online. One obvious reason is Japan has a number of alternative payment systems for online purchases using financial institutions, transport companies, and convenience stores. In addition, the new innovation in the mobile payment such as "iD" provided by NTT DoCoMo has been making credit cards use significantly less problematic in Japan.

According to Mann (2002), Japanese citizens have strong preference for using cash money as a means of payment which made credit card is not popular among Japanese. The most striking feature of the Japanese transactions is the limited extent to which they involve credit. The overwhelming majority – 80% or more – of Japanese credit-card transactions are settled by "*ikkai barai*" (which means something like "payment in one cycle"). Under i*kkai barai*, the consumer agrees (at the point of purchase) that the transaction will be paid to the issuer in full on the next monthly payment date. These can be explained, because Japanese cardholders by nature are more cautious, and averse to borrowing, and the relatively limited protection Japanese law provides Japanese credit-cardholders.

The payment system in Japan basically will not be inhibitor to online business as well as e-commerce. Since Japan rich with various payment systems such as money transfer, cash on delivery, payment on convenience stores, mobile payment and e-money, these will contribute to e-commerce operation. However; as the low rate of credit cards use, in the long run could be inhibitor for e-commerce in Japan.

3.3.1.5.2. Venture Capital

Japan has unique venture capital firms which were founded by either securities firms or banks. A notable characteristic of this market is the dominance of bank system and the government postal savings and insurance system in intermediating 40 – 60 percent of the domestic capital flows (Gerlach, 1992). Their dominance of the capital market is reinforced by government policies favoring debt over equity financing, giving them a stranglehold over the corporate banking market and forcing other financial services players to the periphery of the retail financial market (Tachiki, 2004).

Japan also has corporate grouping (*keiretsu*) tradition, that composed of firms in different industries, but interrelated through cross holdings of ownership and reliant on a

[97] According to Mann. R (2002), Credit cards accounted for only 10%, and According to Tachiki . D et al (2204), the use of credit cards is only 9%.

single, large commercial bank for financing. The keiretsu firms maintain close financial and personal ties through cross shareholding, credit holding, interlocking corporate directorates, and a variety of business transactions (Douthett, 2004). The presence of keiretsu increases the probability of two or more firms collaborating through a joint venture or strategic alliance.

For example, the largest convenience store, Seven-Eleven Japan, established 7dream.com in 2000 through joint capital investment from six large companies, such as NEC and the Sony Corporation. In the same year, Family Mart established Famima.com, a joint venture with other large companies such as Toyota Motor and NTT Data. The other convenience stores are now following Seven-Eleven and Family Mart's click-and-brick business model by building their own website for e-commerce. This business model is now spreading throughout the retail sector, especially among department stores and various other types of retailers trying to fend off on-line competitors (Tachiki, 2004).

3.3.1.6. Business Readiness for E- commerce

3.3.1.6.1. Entrepreneurial Culture

The Japan *keiretsu* tradition which tends to create interlocking relation between composed firms. Thus the financial firms will be a financial intermediary only for theirs group. This is one of the barriers for the small medium businesses for expanding the business, because the relative absence of alternative financial intermediary options in Japan and limited access to capital markets abroad. Especially for the SMEs which have survived the recession and are ready to make ICT investments in order to respond to competitive pressures and consumer demands. In the long run this might be a barrier for SMEs to adopt e-commerce as a new means of the business channel.

In the internet-related business, Japan adopted the Silicon Valley—Internet Companies' Clustering model— called Bit Valley. Bit Valley, a community of the entrepreneurs of Internet companies situated in and around Shibuya, Tokyo. Although Bit Valley is not strictly defined geographically, it is regarded as a community of entrepreneurs in the vicinity of Minato and Shibuya Wards, which have the highest density of Internet companies. Bit Valley led to the birth of the Bit Valley Association (BVA), and Non Profit Organization (NPO) aimed to promote personal contacts between people engaged in Internet businesses.

BVA serves as a coordinator of the community, engages in activities such as parties and mailing lists. In their mailing list, dozens of emails were exchanged on a daily basis and BVA grew into an organization with more than 6,000 members in 6 months. This phenomenon rapidly attracted heavy media attention and even the governor of Tokyo and the governor of the Bank of Japan participated in the parties. The development of Bit Valley

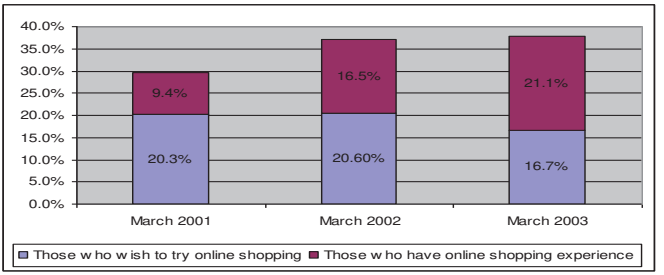
branding lead to a temporary increase of specialists and companies, like talented individuals, investors and venture capitals, who were interested in joining the community. As a result of this phenomenon, a number of new businesses were generated. Cafeglobe.com[98] (a female-oriented community site, which acquired venture capital investment by posting the business idea on the mailing list) and FreeML.com[99] (a mailing list service provider that resulted from an encounter of technicians with entrepreneurs at a party) are examples for companies that originated from BVA's activities (Yukawa, 2003)

Other clusters of Internet companies are located in Sapporo in northern Japan and Fukuoka in southern Japan. The increasing numbers of clustering cases bring into relief the classical importance of 23 private-public partnerships, involving the government, universities, and businesses, as another contributing factor to these clustering of Internet companies (Yukawa, 2001). This geographical dispersion of ICT-based business clustering outside the Tokyo and Osaka corridor is an important contributing factor to e-commerce in Japan.

3.3.1.6.2. Consumer Preferences and Attitudes

According to the he Cyber Life Observations (CLO) surveys conducted by Nomura Research Institute, Ltd. (NR1, 2004), a high degree of Internet experience is one of the contributing factors to the growing market of online shopping in Japan (Figure 3.26). More experienced Internet users tend to spend more in shopping online, furthermore, we consider that ICT literacy and a better understanding of the advantages and/or disadvantages of online shopping could be the reasons why respondents with more Internet experience tend to shop online more frequently and spend higher amounts.

Figure 3.26. Trend in Online Shopping and Intent Ratio in Japan



Source: Made by Author based on NRI, 2004

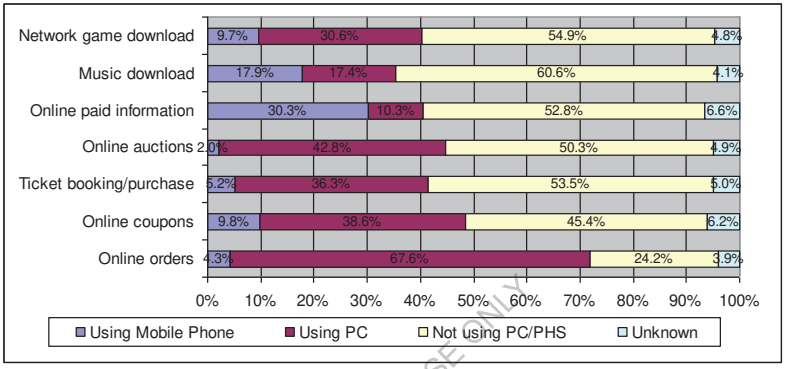
Japan has been adopted "u-strategy", as a result of the explosive growth of the mobile Internet in Japan. According to a Mobile Computing Promotion Consortium (2003) study,

[98] http://www.cafeglobe.com/

[99] http://www.freeml.com/

more than 70% of the population owns a cell phone. In addition a variety of information services and features such as news, m-banking, and m-commerce have become available since the mobile Internet was launched. According to ECOM (2002a), in 2001, ring tone and other entertainment services accounted for around 70% of the overall mobile e-commerce market. In 2006, travel and services are expected to become core segments in this sector, while difference in market ratio among segments will shrink further.

Figure 3.27. E-commerce Services Usage Experience



Source: Made by Author based on ECOM, 2002a

The recent significant change in the buying habits of online customers is their ability to express their demands to producers through the growing popularity of second generation (2G) mobile devices, especially those using i-mode[100], and more recently, third generation (3G) broadband enabled devices (MPHPT, 2002). In addition, the presence of m-commerce has been an alternative for the customers to do online business either via PC or mobile Internet. According ECOM (2002b), Japanese consumers prefer use mobile Internet for online paid information (30.3%). Those fast adoptions on mobile application have contributed to the Japanese e-commerce.

3.3.2. Government Policy

3.3.2.1. Competence Government Institutions

Table 3.18. Important Policy Institution in

Institution	Policy Roles Regarding E-Commerce
The Ministry of Internal Affairs and Communications (MIC) [a]	MIC is responsible for creating the fundamental national systems of Japan. These systems include the national administrative

[100] i-mode is a wireless internet service which enables mobile phone users to access mobile internet sites. i-mode was launched in Japan on February 22, 1999 by NTT DoCoMo.

	organizations, the public service personnel system, local tax/finance, the election system, fire/disaster prevention, information and communications, postal services, and statistical systems. Today, the MIC is striving to address Japan's various issues in order to shape the nation for the 21st century. Efforts include the establishment of new administrative systems such as the policy evaluation system, development of new local administrative systems as represented by the trinity reform, and making Japan the world's most advanced IT nation.
Ministry of Economy, Trade and Industry (METI) [b]	METI is responsible not only on Japanese industrial policy, funding research and directing investment but also energy, environment and ICT business. METI also provides guidelines on electronic commerce, Law concerning electronic signature, and Japan IT business policy.
The Ministry of Finance and Economy (MoFE) [c]	Provide guideline on e-commerce taxation and also Promote Information and Communications Technology in the Administration towards the Realization of the "Electronic Government".

Source: Made by Author
Note: [a] MIC, 2008
[b] METI, 2008
[c] MoFE, 2008

3.3.2.2. Enabling Policies

3.3.2.2.1. Telecommunications Liberalization

Since 1985, Japan has undertaken pro-liberalization policy adjustments in the telecommunications sector[101]. Recently, an emphasis has been placed on facilitation of interconnection as a prerequisite for fair and effective competition between Nippon Telegraph and Telephone (NTT), the former state-owned monopoly, and new common carriers (NCCs). Since the mid-1990s, the Japanese government has made a series of changes in the regulatory framework to provide NCCs with easier access to NTT's network facilities, particularly by promoting a reduction in interconnection charges. As result, between 1994 and 2002, interconnection charges were reduced by 69.9% in Japan (Suda, 2005).

Since the 1985 reform, many NCCs have entered the various segments of Japan's telecommunications market, but NTT still controls 99% of the local telephone networks and has a bottleneck position. In addition, under the Telecommunications Business Law of 1984,

[101] On April 1, 1985, NTT Public Corporation was privatized and Japan's telecommunications market was opened up for competition.

the NCCs have to interconnect with NTT's local networks to allow their users to communicate with each other and with NTT users. Therefore in the early days of liberalization, the competition was unlikely to arise naturally in telecommunications services. The revision of the 1984 Telecommunications Business Law in May 1997 was a milestone, because it finally established rules for interconnection. The Law reviewed the frame work of pro-competition policy and interconnection charges. As results, the market share is changing, which indicate the telecommunication market is competitive (Figure 3.28). Furthermore, the competition has reduced the telecommunication rates (Figure 3.29).

Figure. 3.28. Telephone (Subscriber Telephone + ISDN) Market Share of NTT and NCCs

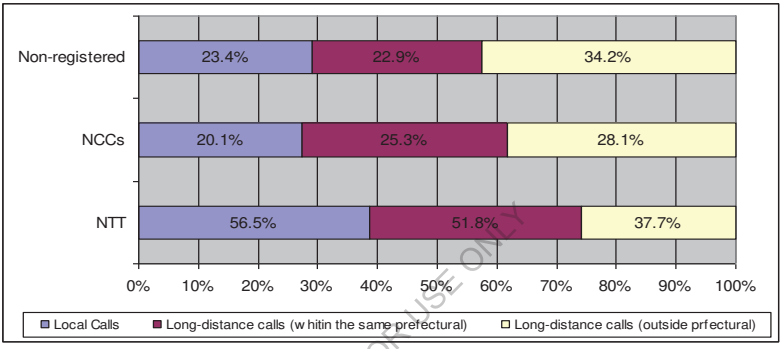
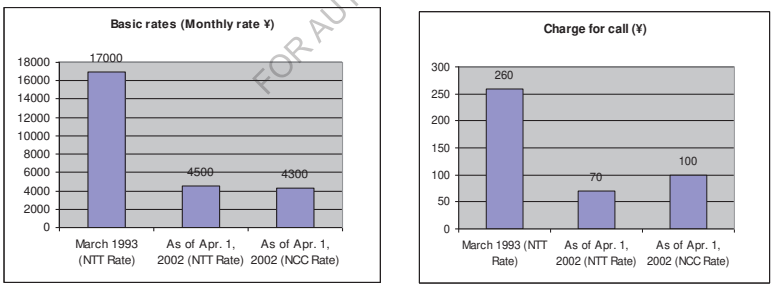


Figure. 3.29. Current Status of Rate Reductions



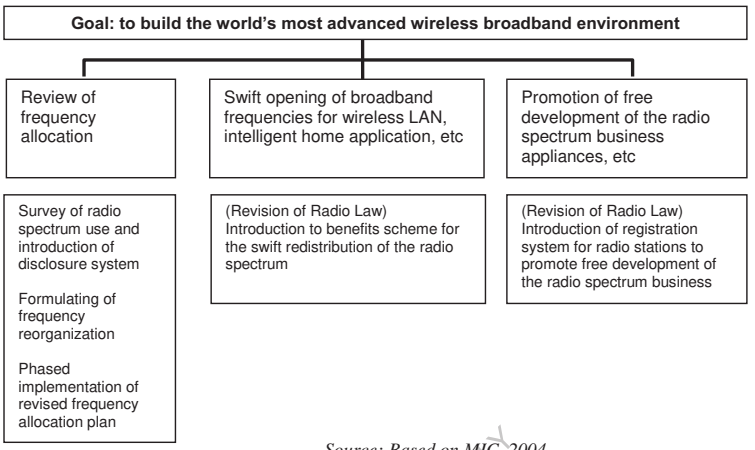
Source: Made by Author based on MPHPT, "outline of telecommunication business in Japan", 2002

3.3.2.2.2. Telecommunications Broadband Policy

In order to realize the building of the most advanced wireless broadband environment in the world and to make the Japanese economy robust and full of activity, the MPHPT is promoting the Frequency Open Strategy, the main pillars of which include (a) a fundamental review of frequency assignment, (b) the introduction of a benefits scheme for the reallocation of the radio spectrum, and (c) the partial introduction of a registration system in place of the

current license system in order to promote the free development of the radio spectrum business (Figure 3.30). (MIC, 2004)

Figure 3.30. Frequency Open Strategy



Source: Based on MIC, 2004

In the implementation and technical aspects, Japanese government also provides policies to accelerate broadband deployment. First of all, the government tries to mitigate digital divide by providing financial support for broadband deployment both for public and private sector. Public sector includes internet project for school and library with zero- or low-interest-rate financing. For the private sectors, government provides tax incentives including deferred income tax payment and reduction of fixed asset taxes for designated network equipment.

Secondly, Rural FFTx[102] Project in which government financed rural broadband deployment. This project is a form of fiber optic communication delivery, and its aim is the optical signal reaches the end user's living in the rural area. It is also a collaborating project between municipalities and service providers. The government subsidized 1/3 of construction costs and municipality-owned fiber networks to be wholesaled (Ebihara, 2007). Those policies have been effectively maintaining incentives for innovative investment which is the key to sustain broadband deployment. Furthermore these have contributed to the higher broadband penetration and lower price rate in Japan.

3.3.2.2.3. Tax Treatment of Electronic Transactions

[102] Fiber to the x (FTTX) is a generic term for any network architecture that uses optical fiber to replace all or part of the usual copper local loop used for telecommunications.

According to Japan basis of taxation, a foreign corporation is subject to corporation tax on its income derived from sources in Japan unless otherwise stipulated in tax conventions for the avoidance of double taxation. Consumption tax should also apply to domestically sold products. These principles, however, have yet to be fully exercised for e-commerce despite the government's insistence on its taxing authority over e-commerce transactions.

The Ministry of Finance and Economy (MoFE) classifies e-commerce taxation, which oversees tax policy, states that e-commerce transactions should fall under the same tax code that is applied to physical goods and services. That interpretation covers income tax, consumption tax, tariffs and other national taxes relevant to commercial dealings. In addition, the MoFE is considering the introduction of taxpayer identification numbers to extend fully the government's tax authority to e-commerce. Unilateral enforcement of local tax rules will be difficult for e-commerce imports in the absence of an international consensus on taxation of global e-commerce trade.

In 1978, Japan introduced an anti-tax heaven rule[103]. According to this rule, earnings by foreign corporations located in a tax heaven and whose shareholders are Japanese are added to the income of those shareholders in Japan. This rule applies if at least 50% of the shares or voting power is on a Japanese resident or Japanese corporation; and when the foreign corporation has its principal place of business in a tax heaven or in a country with a corporate income rate equal or less than 25%. Thus, according to this rule, Japanese individuals or corporations holding e-commerce businesses located in a tax heaven or low tax jurisdiction are levied on the income earned by those e-commerce businesses abroad when they own at least 50% of the shares of those e-commerce businesses (IBLS, 2008).

3.3.2.3.4. E-government Initiatives

In April 2001 the MPHPT began operating its e-Government Coordination System, a website links to various ministries' and agencies' websites. The system provides information from websites, lists of text files available from ministries and agencies, and information on administrative procedures. It also allows users to search for regulatory data over Internet (MPHPT, 2001). One important policy development for e-government during this period is the e-Japan strategy. The IT Strategic Headquarters adopted this strategy in January 2001, with a stated goal "to make Japan the world's most advanced IT nation within five years". Promoting e-government and e-local government is one of the five priority policy areas. This strategy has identified, envisaging that local governments will be able to accept electronic submission of a range of application forms and notifications by 2003.

[103] A tax haven is a place where certain taxes are levied at a low rate or not at all.

Another important development in e-government is the establishment of a single portal that links government homepages to provide access to all kinds of information about public services and the government bodies responsible for these services. This comprehensive government portal (www.e-gov.go.jp) went online in April 2001. It features extensive user-friendly search facilities while serving as an entry point for all central government ministries, departments and local governments. It gives ready access to administrative details, legal texts, government statistics, annual reports and so forth, in this sense serving as a positive response to calls for greater government transparency and accountability. By July 2001, almost 1800 local governments had their homepage linked to this portal. At the end of April 2002, some 1925 local governments with 2037 sites were linked to this portal. This very rapid growth suggests that very soon all local governments in Japan will have established a homepage linked to this portal (Jain, 2002).

E-government also involves governments using the Internet creatively to provide information to business and the community in general, with the prospect that commercial and other benefits will flow into the geographic area under the government's administration. One example of government linking with the commercial sector to use the Internet for stimulating commercial benefit in this way is the Internet Expo. Table 3.19 summarizes Japan's e-government initiatives.

Japan e-government initiatives have brought positive impacts, first of all, the development of Internet infrastructure which connected all of the local governments and national government as one single information system. The Internet infrastructure for supporting e-government is deployed upon broadband infrastructure has created opportunity for the citizens toward internet access. Japanese people have more opportunities to access the internet, and furthermore, it is an important contributing factor for e-commerce in Japan.

Japan's government portal (www.e-gov.go.jp) is one-stop online service gateway. It is organized now around government agency though not yet user-intention based, and is providing government information rather than services. The most cited example of the utility of e-government is the capacity of paying taxes online. The citizens are required to download proceed electronic filling through online system. The online systems have contributed to the consumers' (citizens) attitude toward online behavior which concern more about security and privacy. This will also contribute to the consumers' attitude toward online shopping as they are familiar with the online system.

Table 3.19 E-Government Initiatives in Japan

	2000-2001	2002-2003	2004-2005
Policy and Strategy	• Basic IT Strategy (2000) • e-Japan Strategy (2001) • e-Japan Priority Policy Program (2001) • e-Japan 2002 Program (2001)	• e-Japan Priority Policy Program 2002 • e-Japan Strategy II (2003) • e-Japan Priority Policy Program 2003 • e-Government Building Plan (2003) • Local e-Government Promotion Guideline (2003)	• e-Japan Strategy II Acceleration Package (2004) • e-Japan Priority Policy Program 2004 • Enterprise Architecture Program (2004)
Organization	IT Strategy Headquarters (2000)	• CIO Conference (2002) • CIO Aide Conference (2003) • Central and Local Government Conference for e-Administration Promotion (2003) • Evaluation Investigation Committee (2003)	National Information Security Center (2005)
Infrastructure	• Kasumigaseki[104] WAN • Government Public Key Infrastructure	• Basic Resident Register Network System • Local Government WAN • Local Government Public Key Infrastructure	e-Payment System (2004)
Service Program	eGov Portal (2001) www.e-gov.go.jp	• e-Filing Service (2002) • e-Procurement System (2002) • Resident Registration Card (2002) • Public Personal Authentication Service (2003)	• e-Tax Service (2004) • e-Passport (2005) • One Stop Service of Car Registration Procedures (2005)
Legal Framework	• IT Basic Law (2001) • Electronic Signatures Law (2001)	• e-Voting Law (2002) • Personal Information Protection Law (2003) • Online Administrative Procedure Law (2003) • Public Personal Authentication Service Law (2003)	e-Document Law (2005)
	Infrastructure Development	**Online Service Operation**	**Practical Use Promotion**

Source: Adopted from Muta, 2005

[104] Kasumigaseki WAN (KWAN) is the National Government WAN connected with all Ministries' LAN (one PC per person). Kasumigaseki WAN started in January 1997 in order to promote sharing Information and electronic filing by the use of technologies for access control and security.

3.3.2.3.5. Adjustment to the Legal Framework of E-commerce

Table 3.20 Japan's E-commerce-related legislation and policy action

Legislation	Provision
E-Signature Law [a]	Japanese E-Signature Law (Law Concerning Electronic Signatures and Certification Services) was enforced April 1, 2001. The law's purpose is to make sure the easy use of electronic signature and prompt electronic data exchange in such as e-commerce through the Internet. In the law, legal validity of electronic signature is clearly described. So electronic data with valid e-signature is assumed its authenticity, which means that such data is made with the signer's will and understanding. Burden of proof to be given legal assumption can be exempted if e-signature is based on an authorized CA. Although the definition of e-sign has technical neutrality, it is clear that the use of digital-signature based on PKI is assumed. Note: Under the Japanese legal system, basically, no formality of contract is required so the parties concerned can make legal contract in a way they like. CA (Certification Authority) or CSA (Certification Service Provider) can be authorized to have more creditability. Authorized CA shall meet very strict standard on technology and equipment, application procedure, security, protection of personal information etc. CA by foreign country can be authorized. If they are authorized by foreign governmental agency, the procedures for authorization can be simplified.
Intellectual Property Rights	An amendment to the Copyright Law that took effect in January 1998 guarantees the rights of musicians in interactive telecommunications. Previously, songwriters and composers were entitled to royalties if their music was carried by interactive media (such as the Internet and karaoke systems), but performers were not. The revision added a clause giving so-called neighboring rights to musicians if their performances are transmitted to karaoke systems via computer. The amendment also included a clause to govern radio interactive communications media and a requirement for users of local area networks (LANs) to pay copyright royalties for each computer connected to the network.
Consumer Protection[a]	The Ministry of International Trade and Industry (MITI) established the Electronic Commerce Promotion Council (ECOM) in January 1996 as the watchdog for business-to-business and business-to-consumer e-commerce in Japan. In March 1998 the ECOM issued "guidelines concerning the protection of personal data in electronic commerce in the private sector". The guidelines, which have yet to be updated, contain the following provisions but no specific penalties against violations: • individuals using personal data in electronic commerce should clearly specify, within the bounds of legitimate business, the purpose of collecting such data and the boundaries of necessary information for that purpose; • the use and disclosure of personal data collected legally should be limited to the stated purpose of collecting such data; • reasonable security measures should be taken through both technical and organizational means against such risks as unauthorized access to personal data or the loss, destruction, alteration and leakage of personal data; • individuals engaged in the collection, use and disclosure of personal data should perform, using sufficient care, the obligation to maintain the confidentiality of personal data in accordance with the provisions of laws and regulations; • Refusals by the subject of the personal data of the use or disclosure to third parties of previously collected personal data should be honored with full faith.
Door-to-Door Sales and Other Direct Sales Law [c]	The Law stipulates rules on business transactions of consumers to guarantee fairness in door-to-door sales, telephone shopping, telephone sales promotion and multilevel marketing system sales. The law was implement on June 2001, provides that a company doing direct marketing must display the prices, shipping fees, the methods of and terms for paying money, and the methods of shipping articles in advertising specified articles and services. In addition the amended Law provides that, if seller acts to make customer order goods or services against his will, an administrative order can be issued to stop such act and to take appropriate action to resolve the matter. The Law also requires online merchants to provide a system by which customer can confirm his order before it is completed.

[c] Consumer Contract Law	On April, the Consumer Contract Law became effective. The law provides that consumer can cancel a contract if a seller did acts such as following" • Lying about any material in contract; • Stating information as if it were actual when it is not; and • Intentionally failing to disclose material and adverse facts to consumers. In addition the Consumer Contract Law provides that contractual terms that exempt all of the seller's obligation to pay damaged caused by default or tort are invalid.

Source: Made by Author
Note: [a] MITI, 2000
[b] Global Technology Forum, 2000
[c] Campbell, 2006

3.4. Indonesian Experiences

E-commerce has been achieving steady growth in the global setting; nevertheless, the diffusion and adoption of e-commerce so far has been limited to developed countries and is relatively slow in developing countries. Indonesia as a developing country has recognized e-commerce almost a decade however the development stage is still infancy. In order to gain comprehensive view of e-commerce in Indonesia, this section will explore contributing factors for Indonesia's e-commerce.

3.4.1. National Environment

3.4.1.1. Population and Demographics

Indonesia is the largest archipelago and the fourth most populous country with population more than 234 million people; and concentrated in Java Island, while other islands have more rural area. According to the Indonesian Internet Service Provider association's [105] (APJII) estimation on the number of subscribers and internet users so far and up to the end of year 2005 is shown in the Table 3.21 below.

Table 3.21 Growth of subscribers and Internet users

Year	Subscribers	Users
1998	134.000	512.000
1999	256.000	1.000.000
2000	400.000	1.900.000
2001	581.000	4.200.000
2002	667.002	4.500.000
2003	865.706	8.080.534
2004	1.087.428	11.226.143
2005	1.500.000	16.000.000

Source: Based on APJII, 2006

In addition according to the Internet World Stats (2008)[106], the Indonesian Internet user is estimated only 20 million in 2007, this mean only 8.9% of total populations have internet access. Thus the Internet access among Indonesian is limited and it is one of the barriers for Indonesia's e-commerce. However, there is a positive trend in the increasing number of Internet user year-to-year and it is supposed to be the driver in the near future.

3.4.1.2. Economy and Industry Structure

[105] http://www.apjii.or.id/dokumentasi/statistik.php?lang=eng ; last visited: April 30,2008

[106] http://www.internetworldstats.com/asia/id.htm last visited: May 1, 2008

Indonesia, a vast polyglot nation, has been undergoing significant economic reforms under new government with debt-to-GDP ratio has been declining steadily. Its foreign exchange reserves are at an all-time high of over $50 billion, and its stock market has been one of the 3 best performers in the world in 2006 and 2007, as global investors sought out higher returns in emerging market.

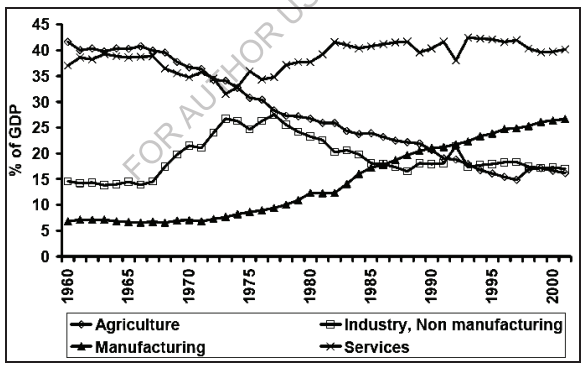
Table 3.22 Indonesia's Macroeconomic Indicator 2002-2006 [107]

Indicator	2002	2003	2004	2005	2006
GDP in US$ bn	195.66	234.77	256.83	286.96	364.45
GDP per capita US$	810	920	1110	1260	1420
GDP growth	4.50%	4.78%	5.20%	5.68 %	5.480%

Source: Made by Author based on World Bank, "World Development Indicators Online"

However, Indonesian has faced serious problem on unemployment (7.9%) and 17.8% of population live in the poverty. The high inflation rate (6.3%) also contributes to the low rate of purchasing power, and Indonesians' consumption is focused to the primary goods rather than tertiary consumption such as internet subscribing. Moreover the income gap is high between urban and rural area; therefore, digital divide also appears as barrier for e-commerce evolutionary process in Indonesia.

Figure 3.31. Industry structure



Source: Based on World Development Indicator, World Bank (various years)

The agricultural sector, which once dominated the economy, declined from 56 per cent in 1965 to 16 percent in 1997, a third of its 1965 share (Figure 3.31). Meanwhile, the manufacturing sector had grown tremendously at around 13 per cent per annum over the 1975-19997 periods. The services sector such as tourism has been growth steadily and this is become one of the most important sector since Indonesia rich with tourism objects. Indonesian tourism has been growing significantly and with the internet booming, some

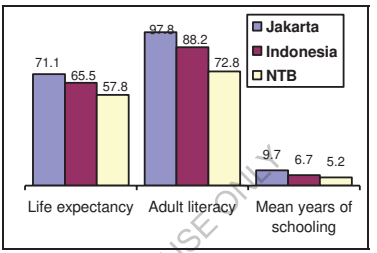
[107] Generated from: http://publications.worldbank.org/WDI/

tourism companies have successfully evolved e-tourism as the new business channel. One success example is indo.com that has been a prominent e-tourism in Indonesia. This phenomenon has been a contributing factor to development of the e-commerce in Indonesia.

3.4.1.3. Human Resources

In the year 2007, Indonesia found its ranked was 107th out of 177 countries[108], placing it in the medium human development grouping. There is also a national human development divide, with a notable gap in life expectancy, adult literacy and mean years of schooling between Jakarta and other parts of the nation. Indonesia thus has pressing economic, health and education problems to redress that may divert attention from ICT (Figure 3.32).

Figure 3.32. Human Development Gaps



Note: NTB refers to Nusa Tenggara Barat, the lowest ranking of Indonesia's 27 provinces in terms of human development.
Source: Based on BPS,2006

The ability to speak a foreign language especially English and computer literacy currently are facing Indonesia's youth. As only about 65% of senior secondary school graduates nationally continue on to formal tertiary education, and with computers now infiltrating every aspect of human life, the government places a high priority upon the education system to improve the development of students' language and computer literacy.

In March 2001, Cisco Systems signed a MoU with the Ministry of National Education to create 20 networking and training academies in technical and vocational schools across the country. This complemented seven existing Academies in Indonesian universities and schools. The eight-semesters, 560 hour course trains students to design, build and maintain computer networks. The Internet Society has recently opened a local Jakarta based chapter in Indonesia; http://www.isoc-id.org will help spread Internet knowledge throughout the community. This effort has been an important driver for e-commerce in Indonesia as its purpose to put the human resources at the stage which favor to e-commerce development.

3.4.1.4. Infrastructure

[108] UNDP, "Human development index report 2007/2008", available at: http://hdrstats.undp.org/indicators/1.html; last visited on May 1, 2008

3.4.1.4.1. Information and Communication Infrastructure

Instead of focusing on the development of ICT literacy and skill, Indonesia has started develop ICT infrastructure as well as ICT system. The private sector and civil society together build, and now operate, the ICT infrastructure in Indonesia; the government made small contributions in this area. The infrastructure currently serves about 1–5 percent of the country's total population. There were approximately 7.1 million fixed telephone lines in 2002 and an equal number of cellular subscribers[109]. (see also table 3.23)

Table 3.23. Information Infrastructure Performance

Access	*2000*	2005
Telephone main lines (per 1,000 people)	32	58
Telephone main lines (per 1,000 people)	18	213
Population covered by mobile telephony (%)	89	90
Internet users (per 1,000 people)	9	73
Personal computers (per 1,000 people)	10	14

Source: Made by Author based on World Bank ICT, 2006

Internet connection in Indonesia is provided by Internet Service Provider (ISP) which number increased from 74 in 2000 to 232 in 2005 (APJII, 2006). For the year ending 2000, there were an estimated 400,000 Internet dial-up subscribers translating to roughly two million users, or just under one per cent of the population[110]. The number of users has doubled over the last two years, following a period of stagnancy during the brunt of the financial crisis.

There are a number of distinctive aspects to the Indonesian ICT scene. One is the popularity of the so-called "Warnets" or Internet cafes. There are around 12,000 of these around the country, operated by private entrepreneurs (AWARI, 2008). They have helped expand access to the Internet for those that cannot afford individual access. According to one survey, over half of Indonesia's Internet users access the Internet from a Warnet. In addition to the Warnets, the Indonesia postal service has also launched Internet access from over 500 post offices and is also an ISP in its own right with some 1,000,000 subscribers (Postel, 2005).

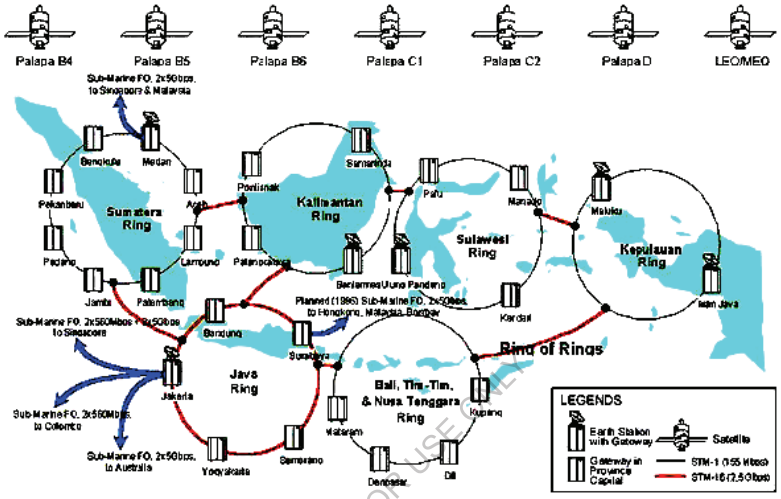
The connection fee depends on access speeds, type of access, i.e. dial-up, cable, ISDN, and whether a bundled package is being offer. In addition to these fees, ISP may or may not pass on the charge of installation to the customers. Throughout the last few years, the costs of Internet access for public use are dropping steadily. Today, on occasion, ISPs will even offer free services to its customers for a limited time. It is generally believed that as the demand for Internet services continues to rise, the cost of usage will decrease.

[109] Zita. K, 2006 "Indonesian telecom in brief", Network Dynamics Associates LLC

[110] Adam Creed. "Indonesian Net Subscriptions To Double This Year – APJII." Newsbytes. 2001.

Broadband in Indonesia is still in the early age of development with less than 150,000 mainly DSL subscribers. Problems with inferior telecommunications infrastructure will continue to impede Internet growth. Despite all this, the country is considered to have enormous potential as an online market [111] and estimated reach 1.2 million[112].

Figure 3.33 Nusantara 21 Vision



Source: Adoted from www.ISOC.org; last visited May 3, 2008

Indonesia has made impressive strides in enhancing access to communications over the last decade. Prior to the financial and political crisis of 1997, Indonesia had one of the fastest growing fixed networks in the world. Tele-density quintupled between 1990 and 2000, from 0.59 to 3.14 even though there have been shortage of telephone lines and personal computers coupled with low in-comes restrict the possibility of individual Internet access to the Internet. One of the major contributing factors is the proliferation of Internet café. The internet café business has grown and it helps promote public internet access.

The Indonesian Internet Café Association (AWARI) is working with Internet cafés to do more than just provide simple Internet access. One promising area is distance learning. AWARI has a MoU with the Open University for distance learning. There are some 300,000 Open University students in Indonesia whose the potential is immense. AWARI is also

[111] Indonesia.biz "Indonesia Had an Estimated 16 Million Internet Users", Monday, September 11, 2006 http://www.endonesia.biz/mod.php?mod=publisher&op=viewarticle&cid=5&artid=735 Visited on May 1, 2008

[112] See Siemens. "PT.Telkom Indonesia installs DSL broadband subscriber access technology." Press Release. 7 November 2000

working with Ministry of Education to put Internet cafés in vocational schools. Another area is small businesses are already using the Internet Café to exchange e-mails with customers. This could be extended to provide more sophisticated electronic capabilities such as assistance with design of web pages hosted by Internet cafe, creation of online transaction capability, etc.

The government of Indonesia is also aware regarding the vision toward information infrastructure; the government has announced a national infrastructure concept called "*Nusantara 21"*. *Nusantara 21* is a reflection of Indonesia's vision of entering information era as an important part of the global community. The vision is also important driving factor which contributes to the development of e-commerce in Indonesia, as it provides better access to the global information through the internet. (Figure 3.33)

3.4.1.4.2. Transport Infrastructure

The Indonesia geographic structure which is composed of thousand of islands is a big challenge in developing transportation infrastructures as well as the system. The major transportation infrastructures are varies from island to island based upon the geographical situation. For example, in Kalimantan and Papua islands the main route is waterways while Java Island heavily relies on railroad and highway. Nevertheless some big national disasters had contributed to the devastating of public transportation infrastructures[113].

In Indonesia, the main provider of land delivery services is PT POS (Indonesian Post). Some domestic and international expedition companies also play important role such as TIKI, DHL, FedEx, UPS and many more. Delivery via waterways, airborne delivery and railroad delivery also exist and contribute forming feasible traffic infrastructure for e-commerce operation. The main challenge upon the delivery is the safety, fast and competitive price. Those services are important for e-commerce operation; however Indonesia delivery service still lack. Only international express such as DHL and UPS have a good service but the service fee is very high compare with local delivery companies. Thus these are inhibitor factors for the e-commerce operation in Indonesia.

3.4.1.4.3. Enterprise Infrastructure

In 1997 economic crisis hit Indonesia followed by currency depreciation[114] and it brought impact on enterprise infrastructure. Especially the ICT companies whereas their

[113] Indonesia experienced severe disaster such as Tsunami in 2004 in Aceh which destructed Aceh province; Java earthquake in 2006 and flood every year which distructed transportation infrastructure

[114] Rupiah depreciation which saw the currency plummet from a rate of Rp 2,500 to the dollar in August 1997 to the current level of over Rp 10,000 per US$.

investment transaction were mostly using US dollar suffered lost and some of them were closed down. For example, until 2000, 46 ISPs were found; however, only 35 operated, that was because the production cost was not affordable while the revenue went down as the declining of wealth among Indonesian. In addition, the crisis also affected the government program on ICT investment, for instance the "Nusantara 21 Vision" was delayed due to the insufficient budget. These seem to be inhibitor for the ICT infrastructure as well as e-commerce.

During the economic crisis, Indonesia learned that small and medium-scale businesses, known as "Usaha Kecil dan Menengah" or UKM, helped the economy to survive. A new business phenomenon appeared in Indonesia during the economic crisis. Due to the convergence of telecommunications and ICT, UKMs mushroomed in the telecommunications and Internet industry in the form of telephone and Internet cafes popularly called *"WARTEL*" (Warung Telepon) and *"WARNET"* (Warung Internet). The number of WARNET companies increased 30% during 2000 to 2,500, and they can be found in every major city in Indonesia. As a result of this phenomenal growth, Indonesia has the most Internet cafés among countries in the Asia-Pacific region. The *WARNET* companies have played a strategic role in fostering the spread of Internet technology throughout the country. They have become an important part of the network in partnership with ISPs and NSPs (network service providers), because they are located in the end-user areas[115].

3.4.1.5. Financial Resources

3.4.1.5.1. Use of Credit Cards

Barriers to e-commerce operation in Indonesia exist in the payment system, for instance Indonesia is a cash-based society and paper transactions are the dominant mode of conducting commerce. Only 1.5 percent of Indonesians own and use credit cards. And Indonesian credit cards function differently from those in the United States. In Indonesia a credit card holder faces unlimited liability in the event of a third party's unauthorized use of the card and consumers potentially face credit card fraudulent[116].

In addition, Indonesia credit card limits are very low and interest rates so high as to be usurious, and local credit card providers generally impose additional charges from 4 to 8 percent of the purchase price for using credit cards. Credit card fraud has been flourishing, but the Indonesian penal codes have not yet accommodated such crime acts. Those might give to

[115] Yasin., M, "The Indonesian Archipelago's IT Growth on the Path to the Digital Economy Era"

[116] Owen. D et al (2001), "Indonesia—Information and Communications Technologies (ICT) Assessment", PEG

the Indonesian online consumers no incentives to do online shopping as the cost and security concern, thus, the payment system is still barrier for e-commerce in Indonesia.

Some efforts have been made in order to promote new payment system, such as on February 2004, an inter-bank electronic payment system was launched by PT Artajasa for its 26 members. For payments of public utility charges, direct debits from the accounts of users are widely used by arrangement between utilities companies and specific commercial bank. A variety of payment cards are used for payments. ATM cards are generally used for the withdrawal and deposit of cash. There are five local inter-bank ATM networks (ALTO, ATM BERSAMA, CAKRA, FLASH, and BCA) and two international networks (CIRRUS and PLUS). Debit cards (EFTPOS) are available in Jakarta and some larger cities. Other cards in use include credit cards and prepaid cards ("smart cards," issued by telephone companies and other entities)[117]. This effort will promote the electronic payment system among Indonesians and indirectly also will contribute to e-commerce.

3.4.1.5.2. Venture Capital

Information infrastructure is one of major problem in Indonesia; however, investment in new lines and telecommunications capacity has been relatively limited for some years. Telkom (PT Telekomunikasi Indonesia) has long been the domestic monopoly provider, and PT Satelindo the monopoly provider of international services. Both these state owned companies were hard hit by the financial constraints on state funds occasioned by the Asian financial crisis. As a consequence they have been severely inhibited both in their capacity to make new infrastructure investments, and in their capacity to maintain existing infrastructure. As a result, telephone line quality is often poor, particularly outside of the major cities.

In an effort to attract foreign investment into the fixed-line business, a joint operating scheme called "Kerja Sama Operator", known by the acronym KSO[118], was created in 1995. This called for the granting of concessions in five of Telkom's seven operating regions to provide fixed-line telephone service. Groups led by strategic foreign investors were awarded concessions. However euphoria provided short-lived due to the financial crisis which saw domestic contraction and incomes plummet while at the same time the fall in the exchange

[117] [13] Noor, A. "Transaksi Online Maju Tak Gentar Tanpa UU ITE", available: http://www.detikinet.com/index.php/detik.read/tahun/2007/bulan/07/tgl/05/time/184010/idnews/801756/idkanal/319, visited on: June 20, 2007

[118] KSO was started January 1, 1996, and the Government pointed five private venture businesses: PT. Pramindo Ikat Nusantara; PT. Aria West International; PT. Mitra Global Telekomunikasi Indonesia; PT. Daya MitraTelekomunikasi PT. Bukaka Singtel International to provide 2 million fix lines.

rate made imported equipment more expensive. This has had a devastating effect on the KSOs, most of which are technically bankrupt.

Indonesia also experienced dot-com bubble. Around the middle of 1999, a number of Indonesian content providers/portal companies sprang up, most imitating the business models pioneered in the USA. Several companies became widely known such as Astaga.com, m-web.co.id (lifestyle portal), detik.com and kompas.co.id (news portals), lipposhop.com (online shopping portal). They attracted multi-million dollar investments and astaga.com, for example, got US$ 7.5 million from a group of venture capital funds including Batavia Investment Funds (England), Bank of America (USA), and Zurich Insurance (Germany).

A majority of the Indonesian dot-coms did indeed fail and only a handful of dot.com companies are left nowadays. Most Indonesian dot-coms were established with the owners expectations that they would quickly become rich, either through an initial public offering on the stock market or through funding from venture capitalists. But most did not have a solid business model and had not thought carefully about how revenues would be generated. They failed to reach an initial public offering at any stock markets in the region both because of the NASDAQ crash and weak revenue growth. They were quickly out of cash because of their high cost structure[119].

3.4.1.6. Business Readiness for E- commerce

3.4.1.6.1. Entrepreneurial Culture

Indonesia's Entrepreneur culture is reflected on the Small and Medium-sized Enterprises (SME), however there is a lack of e-commerce awareness by SME. Most lack ICT skills and equipment. A number of initiatives have been designed to improve the situation. Ministry of International trade and Industry (MITI) has been running awareness courses. There is also a World Bank project to sensitize SMEs about ICT. The government has also offered tax rebates for the purchase of ICT equipment and liberalized foreign investment laws. The lack of business connectivity has not discouraged some SMEs from conducting business over the Internet. Many are using the popular Internet cafes to exchange e-mail with potential buyers.

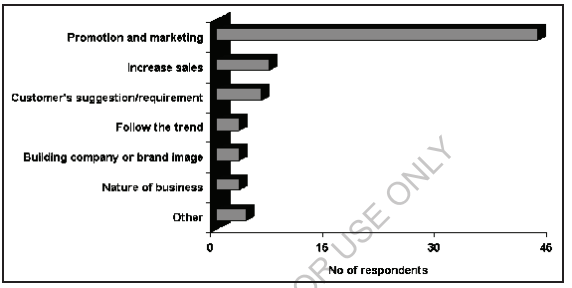
The ICT adoption trend to SME has been starting especially evolving ICT as a new business channel. For example is www.indokado.com - a micro burgeoning e-commerce firm offering various souvenirs and flowers. The firm is a service business by nature since it organizes network of floral and handicraft shops for its consumers. It acts like an information broker linking the consumers and the sellers or shops through its Internet network. The initial

[119] E-commerce report, 2003 ,"Indonesian E-commerce". Special supplement September 2003.

outlays were very minimum i.e. one personal computer, printer, facsimile machine, telephone networks and a 30 mega bytes Internet domain/homepage capacity with monthly subscription fee US $ 7.06. The firm (indokado.com) sends bills to its floral and handy craft shops for referral fees[120].

A study by CasteAsia (2002) examines the use of Internet and e-commerce by small and medium-sized Indonesian enterprises in 12 cities across the country, demonstrates undeniable benefits of Internet usage, particularly by export-related SMEs on Java and Bali. Despite this significant progress, Indonesian SMEs face significant obstacles to greater usage resulting from the weak investment climate, poor telecommunications infrastructure and a general lack of Internet skills and understanding.

Figure 3.34 Factor driving building Web site



Source: Based on CastleAsia, 2002

The Study also identify three phases Indonesia's SME in the evolving use of Internet by SMEs, each of these phases represented by a company type: 1) SMEs which use the Internet; 2) SMEs which are preparing to use the Internet in the near future; and 3) SMEs which know very little, if anything, about the Internet and have no plans to use it in the future. The driving factor to embrace Internet as new business channel is mainly for promoting and marketing purposes (see Figure 3.34).

3.4.1.6.1. Consumer Preferences and Attitudes

A research conducted by APJII in cooperation with Indonesia Internet Business Community and Accenture [121] concluded that 67% of the Indonesian Internet users are influenced by their relationships. It shows that friendship, work relations and personal relationships have important roles in opening the access to the new user's habit. This is a normal path, because the office technology advancement (19% is indeed heading toward this

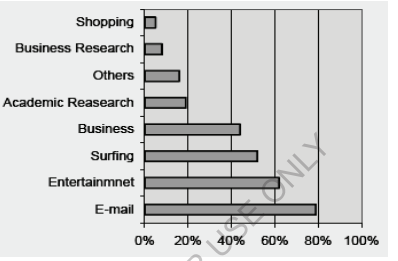
[120] Aryanto. D, (2005) "Entrepreneurial Small Firm Use Of Internet In Indonesia's Emerging Market", Journal of Business Administration Online, Vol.4 no.1

[121] APJII, i2bc, & Accenture: Indonesia Cyber Industry & Market, 2001.

improvement). Mass media are also another factor which further influences people's curiosity for the Internet (10%), and education (schools) allows 4% of the population to be introduced to the cyber world.

The research also shows that people's opening to the Internet is quite recent. The largest group of the Internet users in Indonesia (40%) has used the Internet for more than 2 years. The second are those who have used the Internet between 1 and 2 years (36%). The rest are new faces that have only accessed the Internet for less than 1 year: 14% have used the Internet from 6 – 12 months, 7% have used it from 1 – 6 months, 1% for less than a month and 2% have no answer. Nevertheless, the length of time people have used the Internet does not bear any relation to their ability to use it.

Figure 3.35 Indonesia Internet User Motivation using Internet



Source: Based on APJII, 2005

In term of motivation in using the Internet, e-mail ranks top in motivating the Indonesian netters to use the Internet (79%) followed by entertainment (62%) and only 4% who use the Internet for business (Figure 3.35). Currently, the majority of Internet users in Indonesia generally perceive Internet as an efficient tool for basic information exchange such as email and entertainment rather than for business purposes. While Indonesia's demographic and geographical distribution need the Internet as a media for efficient economic transaction, both policy supports and technological innovations have failed to move toward these needs.

The Internet has been heavily used by urban, middle-class Indonesians, particularly students. Due to the low teledensity and low PC penetration, a majority of potential Internet users have accessed to the Internet only through "*Warung Internet*" (Internet cafés); these cafés have become booming in major cities in the most recent years. Recently, more than 12,000 Internet cafés are all over Indonesia, and operated by private entrepreneurs (AWARI, 2008). These cafés have provided Internet access for two thirds of Indonesian Internet users[122], and also have contributed to improve Indonesian users' online experiences.

[122] Kristiansen, S., Furuholt, B., & Wahid, F. (2003). "Internet café entrepreneurs: Pioneers in information dissemination in Indonesia." International Journal of Entrepreneurship and Innovation, 4(4), 251-263.

3.4.2. Government Policy

E-commerce business in Indonesia has been started since 1995 and pioneered by Indo.com focused on inbound travel to Bali and Indonesia. Even though Indonesia has not had any direct regulation concern about e-commerce operation at that moment yet Indo.com exists up to the moment. In March 25, 2008 Indonesia gained the momentum in e-commerce regulation, the House of Representative legalized Electronic Information and Transaction Bill. The ITE Law[123] is considered the first initiative of the country to enact a comprehensive legislation on cyber-law.

3.4.2.1. Competence Government Institutions

There have been a number of governmental institutions which take into account in developing e-commerce policy and legal frame work in Indonesia. Table 3.24 shows institutions that sought to play particular roles deal with e-commerce legislation in Indonesia.

Table 3.24. Important Policy Institutions

Institution	Policy Roles Regarding E-Commerce
House of Representatives (DPR) Commission IV on Communications affair	Commission IV for Communications approved the bill which is proposed by the Government of Indonesia (GOI) and forwarded it to the DPR for full parliamentary deliberation and vote.
The Government of Indonesia (GOI)	Drafted a new law such as Telecommunication law, Information and Electronic transaction Law and proposed to DPR
Ministry of Communication and Information Technology	To help the GOI by providing communication and information strategies such as: provide ICT regulation, manage the government asset especially ICT system and provide assistance.
The Ministry of Industry and Trade (MITI)	Responsible for developing e-commerce laws covering issues such as digital signatures and computer misuse. MITI is participating in the WTO e-commerce work and following developments in UNICTRAL and OECD
Ministry of Finance, Directorate General of Tax	Implements tax policy related to ecommerce; banking regulators govern online banking and other payments practices including electronic funds transfer.
The Indonesian Telecommunications Society (MASTEL)	similar to a US public utility commission, to oversee tariffs, and to set a new definition of universal service with benchmarks more applicable to Indonesia

[123] The ITE Law was the result of the merger of the two drafts. The first (Bill of the Utilization of IT or RUU PTI) was prepared by the University of Indonesia under supervised Ministry Communication and Information Technology, and the second (Bills of Electronic Information and Electronic Transaction or RUU IETE) was done by Pajajaran University of Bandung Under supervised Ministry of Industry and Trade. After having a long debate in the House of Representative since 2003, finally in March 25, 2008 was finalized.

Indonesia Telecommunication Regulatory Body	to monitor and supervise telecommunication competition and fair trading practices
Indonesia Internet Domain Name (PANDI) Regulator	Provide services dealt with Indonesian Internet Domain name (.id) to the personal, private and public sector

Source: Made by Author

3.4.2.2. Enabling Policies

3.4.2.2.1. Telecommunications Liberalization

In recent years, the Government of Indonesia has moved toward a more liberalized telecommunications environment. The telecommunication liberalization can be divided into two phases:

- Phase 1: 1989-1999:
  - Adoption of Telecommunications Law No. 3 (1989)
  - Partial privatization of the state-owned network enterprises, Telkom and Indosat
  - Introduction in 1995 of 'KSO[124]' build, operate, transfer (BOT) investment arrangements with foreigners
- Phase 2: 1999 – present :
  - Adoption of Telecommunications Law No. 36 (1999)
  - Creation of an independent regulator
  - Lifting of the respective monopolies for Telkom and Indosat, allowing limiting competition in local, long distance and international services
  - Gradual introduction of competition in all services
  - Formal offer to the WTO for telecommunications services.

Faced with the collapse of the KSOs, plus keen pressure from the IMF for aggressive fiscal reform, the government issued a "Blueprint of the Indonesian Government's Policy on telecommunications" in 1999. The Blueprint calls for improving telecom sector performance; liberalization through competition and an end to monopolies; increasing regulatory transparency; enhancing strategic alliances with foreign investors; and creating business opportunities for small and medium enterprises.

A Ministry of Communication decree also announced the awarding of a license[125] to enter international telecommunication services business to TELKOM in 2003 and domestic long distance telecommunication services business to INDOSAT in 2003 and local service to

[124] See Section 5.1.5.2. Venture Capital

[125] Before the decree, PT Telkom was designated as the domestic services and PT Indosat as the international services.

INDOSAT in 2002. The obvious result of the competition environment is the declining of telephone tariff (see table 3.25). In addition the openness telecommunication investment in Indonesia has been enabled the penetration of mobile technology which supposed to be the alternative communication channel as well Internet connection.

Table 3.24. The Change on Telephone Tariff as of April 2008

Calling type	Old Tariff (Rp*)	New Tariff (Rp)	Change (%)
Domestic Call			
Fix-to-Fix	361	261	27.7
Fix-to-Mobile	449	261	41.8
Fix-to-Satellite	574	261	54.5
Long Distance Call			
Fix-to-Fix	471	380	19.3
Fix-to-Mobile	622	493	20.7
Fix-to-Satellite	851	501	41.1

Source: Adopted and Translated by Author based on Jawa Pos February 5, 2008
** 1US $ = Rp. 9,200 (exchange rate on May 3, 2008 Source :Bank of Indonesia)*

3.4.2.2.2. Telecommunications Broadband Policy

Based on Telecommunications Law No. 36/1999, Telecommunications Operation Governmental Regulation No. 52/2000, Operation of Telecommunications Services Ministerial Decree No. KM 21/2001 and Operation of Telecommunications Networks Ministerial Decree No. KM 20/2001, there are no special categorizations for broadband telecommunication operators.

A general provision applies for licensing purposes, where any operator should obtain a license from the Government of Indonesia (i.e. General Directorate of Post and Telecommunication). The operator shall be a legal entity, whether in the form of State Owned Enterprise, Local Government Owned Enterprise, Private or Public Company as well as Koperasi (Cooperatives). It should, however, be emphasized that there is a difference or separation between license for Telecommunication Network Provider and Telecommunication Service Provider, although a company may at the same time possess those two licenses such as PT Telkom Tbk, PT Indosat Tbk, etc.

Under Article 4 - 5 of Operation of Telecommunications Services Ministerial Decree No. KM 21/2001, there is a restriction to the amount of operators by the Government i.e. Minister of Communication for telecommunication operators which utilize certain radio frequency spectrum allocation and or network access code. For this kind of operators, the license for telecommunication operator shall be granted through a selection process. For telecommunication operators not utilizing certain radio frequency spectrum allocation and or

network access code, however, the amount is not limited and the license is granted after an evaluation.

On January 6, 2005 through Decree No.2[126], Minister of Communications liberalized the 2.4-GHz band and it is reportedly leading many Indonesian ISPs to shift to wireless networks. This also stimulated deployment the off-the-shelf high speed and low cost Wireless LAN (WLAN) technology running at 2.4GHz & 5.8GHz band (also known as WiFi[127]). The impact of liberating 2.4GHz & 5.8 GHz WiFi band is likely a favor driver factor for e-commerce development in Indonesia as it also generates spin off effect which lead to more economical benefit for the country such as:

- One (1) million to 17.8 million WiFi based Internet users.
- 50.000 units to 2 million unit computers.
- 5.5000 units to 130.000 units ISM band equipment.[128]

3.4.2.2.3. Education Policies

The Indonesian Internet Café Association (AWARI) is working with Internet Cafes to do more than just provide simple Internet access. One promising area is distance learning. AWARI has a MoU with the Open University ("Universitas terbuka") for distance learning. There are some 300,000 Open University students in Indonesia so the potential is immense. AWARI is also working with Ministry of Education to put Internet cafes in vocational schools.

Recent reports, PT Telkom has made an application to the Government to be allocated its share of the 2.4 GHz frequency since June 2000 to operate 2 x 30 MHz which is the band for Instrumentation, Science & Medical (ISM). The purpose of this request is to spread its wireless network involving the development of automatic central exchanges connected to this wireless network as a backup system. If this goes on, industry observers are concerned that many internet cafes which use this wireless frequency might be faced with greater infrastructure costs. (Detik.com 01/30/01).

3.4.2.2.4. Tax Treatment of Electronic Transactions

Regarding to the tax treatment on e-commerce transaction, currently the tax regulation bill is under the discussion of the House of Representatives. Therefore Indonesia does not impose further tax on e-transaction beyond traditional tax, because there is still no

[126] Minister of Communications. (2005). "Regulation of the Minister of Communications No.2 Year 2005 on Use of 2400-2483.5 Mhz Frequency Bands."

[127] WiFi is basically wireless LAN equipment operates on 2.4GHz or 5.8GHz frequency at typically 1-11Mbps speed. WiFi is based on IEEE 802.11 standard and originally designed for indoor usage.

[128] Purbo. O, "Motivating Community Based ICT Infrastructure Development".

specific regulation on this matter in Indonesia. In addition the current tax regulation also indirectly does not impose on information services. For example according to Directorate General of Tax Decision, the services by Internet Service Providers (ISP) are not included in the businesses that are exempted from Value Added Tax (VAT).

In addition the current tax regulation only imposes tax only to businesses that are located in Indonesia. To some extents the e-commerce server might be located out of Indonesia, thus the any transaction on this will be also exempted form VAT. This current situation on e-commerce taxation in Indonesia has been an enabling factor for the development of e-commerce as it provides low price for consumer and also opportunity for producers to enter the market through e-commerce business.

3.4.2.3.5. E-government Initiatives

The initiative of e-government in Indonesia has been introduced through President Instruction No. 6/2001 dated April 24 2001 on Telematika (Telecommunication, Media, and Information) which states that government apparatus should use the technology of Telematika to support good governance and to accelerate democracy process. Furthermore, e-government should be publicized for different objectives to the governmental offices. Public administration is one of areas in which Internet can be used to provide access for citizens who constitute basic service and to simplify the relations between citizens and government[129].

The basic strategy is utilizing of ICT as the basis for reengineering Government administration at central, provincial and local levels and in the delivery of government Services, seeking to build modern ICT enabled administration throughout Indonesia that will deliver world class information and services to all Indonesian citizens. It is dedicated 1) to support the government change towards democratic governance practices; 2) to support the application of authority balances between central and local government; 3) to facilitate communication between central and local governments; 4) to gain openness; and 5) transformation towards information society era.

Some important achievements e-government initiatives trough out Indonesia:

- 564 domain name .go.id registered.
- 283 Government websites available, 69 at central government and 214 at local government.
- 186 of 468 Local Governments had delivered their public services using website.

[129] www.indonesia.go.id visited on May 3, 2008

- E-Government Award for Local Government (by public, 2003) is given to Tarakan City (www.kotatarakan.go.id), District Kutai Timur (www.kutaitimur.go.id) and Denpasar City (www.denpasar.go.id)[130], and Sragen (www.sragen.go.id) in 2007.

Some e-government applications which evolve internet-based transaction become national driver on the Internet and e-commerce development such as:

- Surabaya City E-procurement System (https://www.surabaya-eproc.or.id/); an online procurement system which similar to B2G e-commerce type provide by Surabaya municipal.
- SISTANAS; an information system to support the making process of National standards of Indonesia (SNI), and to facilitate e-balloting. The idea is to reduce the time response by means of electronic data communication. The system enables stake holders to submit documents and comments electronically.
- INSTANET; Instanet is a kind of national information standardization network consisting of 18 institution members in Indonesia where BSN acts as the secretariat.
- E-payment; online tax payment system by Directorate General Tax.

3.4.2.3.6. Adjustment to the Legal Framework of E-commerce

The current Law Number 27, 2008, titled "Undang-Undang Informasi dan Transaksi Elektronik (ITE)" law is considered the first initiative of the country to enact a comprehensive legislation on cyber-law. The Law is concentrated on e-commerce law and related aspects taking into account the requirements under UNCITRAL model law on e-commerce. In addition the Law is the first to accommodate cyber-law requirements, once enacted the law will certainly provide basis for the reform or revision of other areas of laws including electronic fund transfer, e-government, capital market, consumer protection, electronic contract and online banking. Some important points that are regulated in the law can be summarized as followings:

Table 3.25. The Electronic Information and Transaction Provisions

Legislation	Provision
Electronic Message & Admissibility of Electronic Evidence	The Law acknowledges in section 4 that electronic information shall have legal effect as evidence. This preposition includes the print-out form generated from the electronic message. However, for its legal effect, the electronic message is required to have generated from electronic system that is reliable. Furthermore it also stipulates that the electronic information system must fulfill requirements of integrity, reliability, and accessibility. It also has to be able to retrieve the message it is required. Having said this, however, the Law stipulates that there are some exceptions in certain maters where written document is still necessary & essential including the marriage contract and land matter.
Consumer Protection	It is stipulated in the Law that everyone has the right to obtain accurate and complete information with respect to contract requirements, manufacturer, and product that is offered electronically section 10(1). For this purpose there can be reliability

[130] Gunadi, "e-Government Development in Indonesia", UNPAN, 2004

	certification body to be jointly worked out by government and members of public. In respect with dispute resolution methods, consumers are given variety of legal redresses by the Law. In case there is found any use of IT by certain party that creates harm for society, a class action can be taken by virtue of section.37. Arguably, this `use of IT' is wide enough to cover many areas and issues to the favor of consumers. Besides, civil action can also be brought to commercial court in the event there is a use of IT that causes commercial loss to the consumers. In certain circumstances where there is a threat to certain important aspect of public life, the government may instead take action to protect public interest. Other than litigation, consumers are also given option to settle their e-commerce disputes by employing alternative dispute resolution (ADR) including arbitration as provided in section 42, and the decision resulting from such process shall be final and binding upon the disputing parties.
Electronic Contract	The principle of freedom of contract is strongly upheld by the Law when it stipulates the freedom of contracting parties as to which law to govern, and in which forum to hear the disputes. In this respect, alternative dispute resolution is also available for the contracting parties to opt. More than expected, the Law does not only recognize the legal effect of an electronic contract and parties to it, but also places the e-contract inline with the requirements of international civil law. This international civil law would be the reference in the event where contracting parties do not specifically stipulate which law would govern their agreement. This stipulation in section 20 (3) is especially important in the event dispute arises and the parties did not specify which law is to be the governing law. The constitution of e-contract still depends on the offer and acceptance of the offer; nevertheless the principles are being adjusted to the online environment. Furthermore, by virtue of section 23(3) the use of electronic agent for a contract can also be held binding as far as the electronic agent is functioning properly in the ordinary course of business. This provision accommodates among other things the widely used Automatic Teller Machines (ATM) by banking industries. Other kinds of payment methods that involve automatic arrangement e.g. through computers are also covered under this provision. Given the relatively new and ever-developing circumstances of the information technology, the Law does anticipate its limitation in governing the e-contract activities. As a result, the Law also provides in section 25 that any business customs and commercial practice those are alive today and not in contravention with the provisions of the Law shall remain applicable.
Writing & Signature Requirements	Electronic message can be held original and shall fulfill the requirement of `writing? Provided that its integrity, reliability, accessibility, and re-traceability are guaranteed. Electronic signature has a valid legal effect under section 11, and the requirements are set in section 13. The word used is `electronic' and not `digital'. Therefore, it is technology neutral, and, interestingly, it does not ever touch the technology of public key infrastructure.
Cyber Squatting	Some aspects of domain name registration and related issues are touched in section 26 of the Law. It recognizes any registration of domain names on first come first serve basis. However, this domain name shall not be registered under bad faith, should not trespass fair competition law, and should not infringe rights of others on the name. If the latter occurs, the infringed party may take civil action for damages. While international system of registration is recognized, further procedure of names registration would be regulated by subsidiary regulation. Arguably, this stipulation gives legal effect to the international arbitration procedures, e.g. those under WIPO, UDRP, etc.
Intellectual Property Rights	The Law in section 27 recognizes and protects every intellectual property rights as the result of electronic information work, and same protection is given for Internet website design and any IP-righted materials it contains. This provision is very short and simple, purposely because there is already a comprehensive law deals with IP issues. Apparently the Law tries to avoid overlapping with those IP legislations. For instance, Indonesia's new copyright law No. 19/2002 (Law of Intellectual Property) does anticipate the information technology and what it may affect the copyrighted works. It already sufficiently provides that the same principles of copyright are applicable in the cyberspace medium.
Personal	Personal data protection (PDP) has been among the most contentious issue in the

Data Protection	cyber law discourse. This is due to many reasons, mainly its significance to two seemingly-contradictive things: human rights that demands maximum protection of privacy in one hand, and international trade that requires extensive personal data transfer on the other. This background leads to various international attempts to come with regulatory measures on PDP. However, possibly to the surprise of many, the Law only provides one section (section 28) to deal with PDP, and no subsidiary regulation is mandated by the draft. It only stipulates that data subjects must give `consent' before the `use? of any information containing personal data and privacy rights of that party, except in relation to public information that are no longer confidential. Questions arise as to whether there is similar protection in the event of collection, storage, or deletion of the same personal data? Also, what kind of `consent' is required? Is it an opt-in or opt-out model? Given the width of the issue, why very limited provisions in the Law? And why no mandate is provided for any secondary legislation such as in other parts of the Law?
Offences of Cyber Crime	The offences under the Law are among the most contentious issues. The first sight on Law's provision suggests wide and extensive coverage of computer misuse types and categories. First of all, it is Interesting to note that `hacking' or a mere unauthorized access to a computer or electronic system is not made an offence, in an opposite stand to the law in other major countries such as UK, Malaysia and Singapore. This is believed to be crucial since Indonesia has been known for its rampant cases on cyber crime involving hacking, web-defacing and credit card fraud. Hacking is an offence only when, first, it is committed with the purpose of obtaining or altering information contained in that system. Secondly, it is committed with the intention to secure information classified as confidential, or that are detrimental for national security and international relations. It is argued that this provision on international relations and nation's critical information infrastructure would provide redress for the issues of cyber-terrorism. Hacking is also an offence when it is committed against the electronic system of financial and banking industries, with the purpose of misusing it or gaining undue advantage out of it. The Law also criminalizes any action that posed harms to the proper functioning of nation's protected electronic system (e.g. those systems under national critical infrastructures). Protected computer is elaborated by the Law's elucidation of section 34; to fall into two categories: first, special and exclusive computers that belong to the government's financial institutions, and secondly, the computers that are used by the state to communicate and trade with parties from other countries. In other provision, the Law makes it an offence for the wrongful communication of password, access code, or other means of access (section 35). Credit card fraud is addressed in section 33, where it provides that, any way of unauthorized use or access of other people's credit card to gain benefit from e-commerce is an offence under the Law. It is hoped that this provision may curb the existing problem and thus eliminate the notorious credit card fraud in Indonesia.
Certificate of Authority	The Law also recognizes the certificate of authority as a part of Information and electronic transaction. However in the section 13 point 4, it is stated that the authorizer should be located in Indonesia and has legal operation. It will impede the electronic transaction since Indonesia has not had legal authorizer companies such as Verisgn and Cybertrust SureServer. Currently, the legal authorizers are located outside Indonesia..

Source: Adapted from ITE Law, 2008 and Zulhuda 2007 and revised by Author

CHAPTER IV

CONCLUSION BASED on INTERNATIONAL COMPARISON and PROPOSALS for E-COMMERCE in INDONESIA

This chapter tries to compare e-commerce experiences from selected countries (U.S., Germany, Japan and Indonesia) and to draw key findings of what can be derived from the e-commerce evolutionary process. The chapter also tries to make major proposals for a higher level of e-commerce in Indonesia based upon the international comparative study.

4.1. Comparison Key Findings on E-commerce Evolutionary Process

4.1.1. US Experiences

US business has introduced e-commerce as a new business channel, particularly the Multi National Companies (MNCs) have adopted and integrated e-commerce to extend or revamp their existing strategies, operations and supply and distribution channels. This MNC's strategy upon Business-to-Business (B2B) e-commerce adoption has spread around the world. In particular, the e-commerce business such as Yahoo, eBay, and Amazon have taken the initiative of creating and doing business online successfully which affecting Business-to-Consumer (B2C) e-commerce in many other countries. Thus, those experiences have brought U.S leading in e-commerce evolutionary process.

The study also found that overall, the U.S domestic environments is favorable to e-commerce evolutionary process. The contributing factors such as US huge single market has contributed to e-commerce, together with its liberal business practice, advanced ICT infrastructure, and technological innovations. Furthermore, the positive consumer's attitude towards e-commerce operations is also a driver for the US B2C e-commerce evolutionary process.

Moreover, the Government policies related to Information and Communication Technology (ICT) promotion such as telecommunication liberalization, broadband policy, venture capital/business, combined with tax consideration have contributed to e-commerce evolutionary process. Those related policies have facilitated competition, encouraged businesses and attracted consumers to engage on e-commerce.

4.1.2. German Experiences

As an industrial country, German's economy is heavily export-oriented and leads the world in trade in research-intensive goods, automotive, chemical and manufacturing, along with the United States. The export-oriented German businesses have promoted B2B e-commerce which affected many parts of the world for coordinating the business network,

extending market, and evolving in distribution channel. In addition, German's strategic position in Europe for home base of internationally competitive businesses, has lead a strong motivation for German business to adopt e-commerce for coordinating international operations and sustaining its competitive advantage. This international orientation business has been the main drivers of B2B e-commerce evolutionary process in Germany.

Moreover, more than 80% of the GNP is created in thousands of Small Medium Enterprises (SMEs), which traditionally are considered as more flexible and innovative than large enterprises. This strong and innovation-friendly of German SMEs is shown by their enthusiastic and quick adoption of the Internet as well as e-commerce into their business. Thus, e-commerce in Germany includes everything from basic electronic data interchange, online shopping, mail-order firm, auctions, electronic chains, and m-commerce, retail, travel and internet pharmacies. The fast-follower SMEs on the e-commerce adoption have been a strong contributing factor to B2C e-commerce in Germany.

In the national policy, Germany adopted e-commerce-related laws immediately after the U.S. The e-commerce directive was enacted in national law (Gesetz zum elektronischen Geschäftsverkehr (EGG)) on December 21, 2001. This meant a full implementation of the country of origin principle in German law. As a member of the European Community, Germany has continued to take the initiative in EU for e-commerce directives covering areas such as electronic signatures, country-of-origin principles, recognition of electronic contracts, copyright, and rules for applying value added tax.

4.1.3. Japanese Experiences

Japan has been known as a leader in the electronic and automobile business. Those businesses had already adopted electronic data interchange (EDI) systems for improving supply chain efficiency rather than online selling. Thus, the B2B e-commerce adoption is relative slower compare with others developed countries such as Germany and U.S.A. Even though the businesses decide to adopt e-commerce, however the e-commerce is adopted as technology enabling operational efficiencies along industry supply chains. Thus, this study have found that Japan has a hybrid approach to e-commerce, where e-commerce systems often coexist with existing EDI systems.

Japan also has corporate grouping (*keiretsu*) tradition which comprises a group of large leading companies with extensive business linkages across national borders and industries. The groupings provide a number of competitive advantages such as the multiple uses of resources, information-sharing, cross-shareholdings, and an effective system of minimizing external and internal transaction costs. These factors led the probability of two or more firms collaborating through a joint venture or strategic alliance particularly in internet-

based business. Thus, the presence of *keiretsu* has created potential factor to e-commerce adoption both inter or intra businesses.

As the world leader in adopting the new technology; therefore, e-commerce businesses in Japan have been adopted and tailored in various aspects. For instance, Japan has strong convenience store network-chains and it leads convenience stores set up outlets on which customers can shop online and then pay for and pick up the merchandise at the store. Japan's delivery companies are also well established and they developed cash-on-delivery for online purchases; therefore, consumers have various alternatives on payment system. In addition, mobile internet access applications such as i-mode is popular among Japanese which provides online order features and pays for the order at a convenience store on the way home.

Government policy is relatively favored on several issues related to e-commerce which focus is creating a better regulatory environment. Government also works together with affiliated-organization such as ECOM in order to promote e-commerce. In addition, the strategic and comprehensive ICT policies such as Basic IT Strategy, e-Japan Strategies, and u-Japan strategy have been contributing factor towards Internet technology adoption as well as e-commerce evolutionary process.

4.1.4. Indonesian Experiences

E-commerce business was introduced to Indonesia even before 2000, the pioneer of e-commerce in Indonesia was an online bookstore called Sanur (www.sanur-online.co.id) and established in 1996. Sanur adopted the Amazon.com and tried to become the first Indonesia bookstore in Indonesia who sells book on the Internet, however it was closed in 1998 because of the limited buyers. In 2000 Sanur tried to establish again with new site www.sanur.co.id, yet it failed due to the same reason.

Indonesia also experienced dot-com bubble which Indonesian content providers/portal companies sprang up, most imitating the business models pioneered in the USA. Several dot.com businesses became popular which attracted multi-million dollar investments and many talented Indonesian IT workers with high salaries and achieved wide market recognition in a very short time. However, after the dot.com bubble collapsed, many dot.com businesses faced a difficult situation due to:

- lack of managerial resources, and
- squeezing financial environments.

A small number of dot.com companies have survived during the collapsed and currently has been a prominent in online business. Some success stories are shown by Detik.com (www.detik.com) which provides free instant and up to date news and has 7.5 million page views per day. Detik.com mainly gains revenue from the banner advertising and subscription news services. Another example is Indo.com (www.indo.com), which has

succeed in developing online travel company and generating revenue from transactional-based or commission based. Those online businesses are success because of their:

- specific business model, and
- domestic-oriented innovation companies.

Even those survivors have faced some barriers such as poor information infrastructure, consumer attitudes, low of credit card penetration, and concern about security and privacy. The lack of users' online experiences is the main inhibitor to Indonesian e-commerce, because only 1% of the populations have had access to e-commerce.

The government also provided important enabling policies such as telecommunication liberalization, Copyright policy, and Taxation. In addition Law on Information and Electronic Transaction—aimed at the introduction of electronic contract, digital signature, consumer protection, personal data protection— has been issued on March 25, 2008; however, very little visible progress has been made.

4.2. Implications from International Experiences

There are important lessons that can be derived from the international experiences of e-commerce evolutionary process such as:

a. Basic framework and basic business model of e-commerce are most likely to come from MNCs but they have to be tailored according to local conditions. If this is the case, Indonesia's local companies have to be more careful about local conditions and needs. The Indonesian government will have also to pay more attention to this aspect.
b. E-commerce has offered some advantages to SMEs by extending marketplaces and lowering of costs of marketing. In the developed economies, SMEs have embraced e-commerce in their business strategy; however in developing countries the adoption has faced some barriers such as lack of ICT infrastructure and skill. Education and training for ICT are crucial part of ICT infrastructure in Indonesia.
c. Advanced countries' government strategy has been supported by good business responses and practices, which are very much lacking in Indonesia. Particularly, the advanced countries' government strategy on ICT and the legal arrangements of its operations has contributed to the e-commerce including liberalization of telecommunication, venture capital/business regulation and tax consideration has also facilitated the e-commerce.

4.3. Improvement for Indonesia's E-commerce

Based upon the comparison and key findings on e-commerce experiences in selected countries, the Author presents the following three proposals for the Indonesia's e-commerce improvement:

a. Strong leadership or efforts are needed to coordinate ICT infrastructure including network extension, ICT literacy, and potential ICT business chances. Because e-commerce relies on the Internet, the infrastructure for Internet has to be extended and strengthened. This could be done only by good cooperation among central government, local government, and private business. In particular, the private sector has a big responsibility for providing the Internet access, and this effort should be accompanied by high level of ICT literacy.

b. Locational considerations should be made for internet café, telecenter, and information access point (IAP), including ICT business cluster. It is found that the majority of Indonesians cannot afford to buy PCs and subscribe Internet at home; therefore, Internet sharing in the public facilities will contribute to improve e-commerce in Indonesia. The ICT business cluster should be designated for SMEs which have been considered as key feature in the Indonesia's economy. Most of the Indonesian SMEs are still lack in the ICT skill; however they have flexible managerial and strong willingness to evolve the ICT in the business strategy.

c. Coordinated business network needs to be established among merchants, Internet and e-commerce providers, financial institutions, and delivery services. The e-commerce business is not only collaboration between merchants and costumers but also includes multi sectors such as Internet providers, financial institutions and delivery services which required better coordination and collaboration among them.

4.4. Future Study

Since this paper is based on several case studies from different countries, there are some constraints; the major constraint is the number of selected countries and case studies, and; other obstacles are the limitation in accessing to some of the required data and the limitation in clarifying some ambiguous data/information. In order to delve into the underlined issues of e-commerce evolutionary process, the author thinks that further study is needed.

First of all, since most of the data is secondary from business reports, white papers, or academic papers, it is important to have direct access to the original or primary data and information. Secondly, this paper should be more focused, investigating more deeply the contributing factors to e-commerce evolutionary process as the background of each evolutionary process is different in each country. Lastly, little consideration has been made as to whether any statistical approach would be relevant for the analysis of e-commerce evolution. More careful statistical consideration will be needed.

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APPENDICES

APPENDIX 1

Internet Tax Table-Sate Level

STATE	Access to the Internet	Sale of Goods over the Internet	Downloaded Info/Software
Alabama	Exempt	Taxable	Taxable
Alaska	No State Sales Tax		
Arizona	Exempt	Taxable	Taxable
Arkansas	Exempt	Taxable	Exempt
California	Exempt	Taxable	Exempt
Colorado	Exempt	Taxable	Taxable
Connecticut*	Taxable	Taxable	Taxable
Delaware	No State Sales Tax		
D.C.	Exempt	Taxable	Taxable
Florida	Exempt	Taxable	Exempt
Georgia	Exempt	Taxable	Exempt
Hawaii	Exempt	Taxable	Taxable
Idaho	Exempt	Taxable	Taxable
Illinois	Exempt	Taxable	Information- Exempt Software - Taxable
Indiana	Exempt	Taxable	Information- Exempt Software - Taxable
Iowa	Exempt	Taxable	Exempt
Kansas	Exempt	Taxable	Information - Exempt Software - Taxable
Kentucky	Exempt	Taxable	Exempt
Louisiana	Exempt	Taxable	Taxable
Maine	Exempt	Taxable	Taxable
Maryland	Exempt	Taxable	Exempt
Massachusetts	Exempt	Taxable	Information – Exempt Software – Taxable (eff. 4/1/06)
Michigan	Exempt	Taxable (use tax)	Information - Exempt Software - Taxable
Minnesota	Exempt	Taxable	Information - Exempt Software - Taxable
Mississippi	Exempt	Taxable	Taxable
Missouri	Exempt	Taxable	Exempt
Montana	No State Sales Tax		

Nebraska	Exempt (initial set-up taxable if software is provided)	Taxable Information - Exempt	Software - Taxable
Nevada	Exempt	Taxable	Exempt
New Hampshire	No State Sales Tax		
New Jersey	Exempt	Taxable	Exempt
New Mexico	Taxable	Taxable	Taxable
New York	Exempt	Taxable	Taxable
North Carolina	Exempt	Taxable	Exempt
North Dakota	Taxable	Taxable	Taxable
Ohio	Taxable, commercial use only	Taxable	Taxable, commercial use only
Oklahoma	Exempt	Taxable	Exempt - unless purchaser receives a backup copy or manual in addition to downloaded software
Oregon	No State Sales Tax		
Pennsylvania	Exempt	Taxable Information - Exempt	Software - Taxable (Effective - 11/01/05)
Rhode Island	Exempt	Taxable	Exempt
South Carolina	Exempt	Taxable	Exempt
South Dakota	Taxable	Taxable	Taxable
Tennessee	Exempt	Taxable	Information - Exempt Software - Taxable
Texas	The first $25 of a monthly charge is Exempt	Taxable	Taxable
Utah	Exempt	Taxable	Taxable
Vermont	Exempt	Taxable	Exempt
Virginia	Exempt	Taxable	Exempt
Washington	Exempt	Taxable	Taxable
West Virginia	Exempt	Taxable	Taxable
Wisconsin	Taxable	Taxable	Information - Exempt Software - Taxable
Wyoming	Exempt	Taxable	Information - Exempt Software - Taxable

Source: Vertex, April 2006

http://www.vertexinc.com/TaxCybrary/Internet/tax_table.asp visited on May 20, 2008

APPENDIX 2

The Brief Profile of Detik.com and Indo.com

a. Detik.com

Www.detik.com is the leading online media in Indonesia. It has brought break trough to the Indonesian online journalism which has only digital content instead of printed-based. This also has brought popularity among the Indonesian internet user as the most updated breaking news compared to the other online media pioneers such as Republika Daily (http://republika.co.id) and Kompas Daily (http://kompas.com). Those pioneers are not fully online media, as what public read on the websites is almost the same thing that appeared in print edition.

The key success of Detik.com is in defining the business strategy upon the online journalism. A year before President Soeharto felt down on May 1998; political climate in Indonesia was on the rise. Mass demonstrations, ethnic, violence and riots were almost happened every time and everywhere. Rumours on military coup were spreading anytime. Because of the government control on print and broadcast media tightly, this kind of "hot stories" didn't appear in mainstream newspapers, radios or televisions. And, people found it at online media, especially on Detik.com. This news portal has become alternative information for Indonesian people during crucial time at the end of New Order corrupt regime.

It was also a proof of diminishing control of New Order government to control flow of information. Soeharto regime could disband publication of newspapers or shut down television stations, but it couldn't censor or shut down online media. It was not only because we don't have cyber law yet, but also because too hard to control cyber space. Detik.com, then, instantly became a runaway success, becoming the most popular news source in Indonesia. Detik.com's page views rate leaped from 3,000 per day in July 1998, to 735,000 per day by October 2000. Currently, the number of individual users has reached 19,324,829 and page-views have reached more than 10,000,000 per day.

Those have brought Detik.com as the most popular websites among Indonesian online users. And for the business sectors, it is also a great place to carry out a marketing campaign over the Internet. Thus, Detik.com mostly gained its revenue trough banner and online advertisement. After leading in online journalism, Detik.com expands its business into content management. It provides Solutions Applications and Services (SAP) dealt with financial, retail services, e-business, e-CRM, back end integration, e-publishing and media entertainment. The achievements have brought Detik.com into one of the most success dot.coms business in Indonesia.

b. Indo.com

Commonly known as Bali Online, indo.com started with tourism and is now the country's pioneer Internet Travel Company. Indo.com delivers the ultimate source of information about Bali and Indonesia on the Internet, where customers can easily find any information they need to make intelligent purchasing decisions. Set up in 1995, indo.com is at the forefront in the industry, and has now taken the lead by providing a new Online Reservation System, which allows customers to check room availability and make online reservations in Real Time - i.e. they get confirmation instantly. All payment is done through 'Verisign', the system that is also used by Amazon and eBay.

Some highlight data about Indo.com

* Monthly Unique Visitors 500,000
* Monthly number of hits 18,000,000
* Page Views 2,600,000
* The origin of visitors are came from 140 countries around the world
* It has over 17,000 links to our site
* About 60,000 rooms reservation were made through indo.com in 2000
* More than 300 companies partner with Indo.com

Currently, Indo.com has expanded the online business, and had some additional features which also become the achievements of its business. Indo.com also developed a payment gateway service http://pay.indo.com. which will enable Indonesian website to own online payment service with total e-commerce. With DBS working side by side makes indo.com secure and also reliable. Indo.com's also has Campaign Management Tool (http://www.turbocustomer.com) is used by the Singapore Tourism Board, Astra International, JW Marriott Jakarta, and about 30 other prominent companies, and our Loyalty Point System powers Astra World, Astra International's motoring membership and lifestyle company. Indo.com's mobile travel now offers travel information and book-able content through the leading cellular operators in Indonesia.

In the mobile application, Indo.com also launched M-travel is simply delivering travel information – hotel directory, availability, rates; train schedules and fares; flight schedule – through mobile phones. This application is available through GSM operators – Indonesian subscribers.

(Various sources, compiled by author)