

## 전자상거래 확산을 위한 주요 이슈에 대한 연구\*

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전자상거래는 비교적 짧은 연륜에도 불구하고 경영, 경제 전반에 걸쳐 상당한 주목을 받고 있다. 비록 아직은 시작단계이기는 하지만 그 규모가 급성장하고 있으며 경제적인 중요성도 날로 더해갈 것으로 전망된다. 한편 인터넷을 기반으로 발전하게 된 전자상거래의 가장 큰 특징은 범세계화(Globalization)라 할 수 있다. 전자상거래의 확산은 이러한 세계화 추세를 더욱 가속시키고 있으며 여러 국가의 경제가 하나의 시장으로 통합되어 갈 것으로 예측된다. 따라서 이러한 새로운 경제 패러다임에 적절히 대응하기 위해서 국제적인 협력과 공동 노력이 필요하게 되었다. 이러한 이유로 전자상거래는 APEC, OECD, G7 등 주요 국제기구의 주요 의제가 되고 있다.

현재 전자상거래와 관련된 국제협력은 미국과 서유럽국가(유럽연합:EU)들이 주도하고 있으며 주요 협력 내용도 전자상거래의 인프라 및 환경조성 등에 초점을 맞추고 있다. 본 논문의 목적은 아시아 국가들 간의 전자상거래 활성화를 위한 국제적 협력의 필요성을 제기하고 주요 협력 안건을 찾는 것이다. 이 목적을 위해 전자상거래와 관련하여 미국과 유럽연합의 접근방법을 재검토하고 전자상거래 활성화를 위한 주요 현안을 제시하였다. 이를 위한 전자상거래 발전 모형을 제시하였으며 이를 통해 국제협력이 필요한 영역을 살펴보았다.

### I. Introduction

impressively high and its economic importance will continue to grow.

Electronic Commerce (EC) is a relatively new and has been attracting a considerable amount of attention. Even though it is still in an introductory stage, growth rates are

Electronic Commerce is changing the way we do business and will create new business, new jobs, and a new business paradigm. The most prominent change must be global business interaction. Electronic

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Commerce is born to be global because its connectivity using the Internet is universal. As Electronic Commerce accelerates the globalization, it will also increase both the interdependence of national economies in different countries and the need for international cooperation and coordination.

Electronic Commerce is really a global challenge that requires global solutions. For this reason, Electronic Commerce becomes an important agenda in major international cooperative organizations including APEC, OECD, and G7 (G8). However, current international discussions on Global Electronic Commerce are initiated mostly by the United States and European Union (EU).

The objective of this paper is to raise awareness creation activities in which the international cooperation is needed for promoting the global electronic marketplace in Asia. For this purpose, this paper reviews the approaches of U.S. and European countries (or European Union), and suggests an analysis framework on the basis of the reviews. The framework is used to analyze current issues around Electronic Commerce, and identify some fields which require coherent work among researchers in different countries.

## II. Global Cooperation in EC

In order to cope with the global cooperation in Electronic Commerce (EC), it is necessary to analyze and recognize the varieties of issues being raised in the countries which play the main role in EC. Accordingly, this study will review the main issues relating to global expansion of EC according to the analysis framework and will contribute to a better understanding of how the United States and EU recognize each issue.

To facilitate the global expansion of the EC, it is significant to set basic principles and to achieve global consensus about these principles. The U.S. government suggests a set of principles to facilitate the growth of EC as follows: 1) The private sector should lead, 2) Government should avoid undue restrictions on EC, 3) Governmental involvement should be to support and enforce a predictable, consistent and simple legal environment for commerce, 4) Government should recognize the qualities of the internet, 5) EC over the internet should be facilitated on a global basis.

Meanwhile, European Union (EU) suggests 5 main principles which focus on the expansion of EC in European market. They are: 1) The expansion of

electronic commerce must be market-driven, 2) No regulation for regulation's sake, 3) Any regulation must be based on all Single Market freedoms, 4) Any regulation must take account of business realities, 5) Any regulation must meet general interest objectives effectively and efficiently.

The concerns of major leading countries regarding the basic principles are significantly overlapped. They all emphasize that the private sector should take the lead (according to the function of marketplace) and the governmental involvement should be minimal. While the traditional role of the government was to restrict and to intervene, the role of government in electric commerce is both to foster and to support by establishing EC environment. The U.S. government views that the success of electric commerce will require an effective partnership between the private and public sectors, with the private sector in the lead. It also views that government participation must be coherent and cautious, avoiding the contradictions and confusions that can sometimes arise when different governmental agencies individually assert authority too vigorously without

coordination. As private sector leadership accounts for the explosive growth of the internet, and the success of electronic commerce will depend on continued private sector leadership, the U.S. government suggests that the private sector must continue to lead. Accordingly, the U.S. administration encourages the creation of private fora to take the lead in areas requiring self-regulation : 1) privacy 2) content ratings 3) consumer protection 4) standards development, 5) uniform commercial code, and 6) fostering interoperability.

The aim of EU Initiative is to encourage the vigorous growth of electronic commerce in Europe. The Initiative expects that electronic commerce will ensure the competitiveness of EU. European Commission provides a coherent policy framework for future Commission action in the field of electronic commerce, and seeks to raise integral opinion of EU in the process of international negotiation for global consensus. That is, in order to booster electronic commerce and to avoid the split of electric commerce market, the Initiative recognizes that the political discussion should be needed at the early stage of development.

### III. Framework for Global EC

This study analyses various issues regarding global expansion of electronic commerce. In this section, best fit framework for this study will be suggested. To achieve this objective, the characteristics of existing frameworks suggested by the U.S. government and OECD are analyzed and a new classification framework that fits the objective of this study will be developed.

In A Framework for Global Electronic Commerce, the U.S. government classifies 9 issues into 3 groups- Financial issues, Legal issues, and Market access issues- as shown in <Table 1>(NII, 1996). The Financial Issue involves customs and taxation, electronic payment system, the Legal/ Legislation Issue, Uniform Commercial Code, privacy, intellectual property protection and security, and the Market

Access Issue, telecommunication infrastructure, content, and technical standards.

Even though this framework provides basic guideline for further discussion by grouping various issues relating to electronic commerce, it has some drawbacks. Above all, the characteristics of each issue within the group is inconsistent. For example, the security issue is classified into the Legal Issues, but the discussion concerning security mainly covers the technical areas such as encryption and safeguarding. And there arent any comments on human resources, education, SME(small & medium enterprises), and R & D which are essential components to be considered for promoting EC or electronic market expansion. Therefore, it needs to be modified for an comprehensive framework for the systematic studies. In addition, the structure of the U.S.

<Table 1> The Framework for Global Electronic Commerce

Group	Issues
Financial Issues	Customs and Taxation
	Electronic Payment System
Legal Issues	Uniform Commercial Code
	Intellectual property protection
	Privacy
	Security
Market Access Issues	Telecommunication Infrastructure
	Content
	Technical Standard

governments framework is one dimension, so it can hardly identifies the relationship between each issue and the economic entity or transaction process.

Another framework for classification of electronic commerce issues is the approach suggested by OECD (1997b), which examines the process of conducting electronic commercial transaction step by step. According to OECD, the process of electronic commercial transaction includes 7 steps. First, to conduct a transaction, the business establishment must exist in cyberspace (step 1). Then, to sell its products or services, the company must make marketing efforts (step 2). Next or concurrently, goods or services are produced (step 3). When a customer shows interest, buyer and seller negotiate and make a contract (step 4). Then, payment and delivery take place (step 5). If something is wrong with

the product or service, cancellation may occur (step 6). At some point, either afterwards or at the establishment of the business, tax must be paid (step 7). Through these 7 steps, the problematic issues such as trademarks, intellectual property, authentication, the legal effect of electronic contracts or electronic money, consumer protection and taxation should be addressed at each step. And other issues arise that affect the entire transaction. Protection of privacy and security are such issues. <see Table 2>

The advantage of OECD framework is that it can provide an implication about the relationship among the various issues by classifying the issues according to the transaction process. Furthermore, it provides the understanding of the structure of interested parties by classifying the issues according to the economic entities. Nevertheless, the technical

<Table 2> The OECD Framework based on the Process of EC (OECD, 1997)

Main issues being raised in the process of contract								Relating issues	
step	step 1	step 2	step 3	step 4	step 5	step 6	step 7		
Action	Business Establishment	Marketing	Production	Negotiate & Contract	Payment	Cancellation	Customs & Taxation	Privacy	Security
Consumer		Privacy			Payment & Electronic money	Consumer Protection		Privacy Protection	Security
Business	Trademark right		Intellectual Property	Authentication		Sharing of Reponsibility			
Government							Tax regulation		

issues are identified not so clearly that the discussion about the technical issues could be missed.

In addition, just as the U.S. framework, OECD framework doesn't include the issues relating to the participation of small and medium enterprise or R & D, either.

This study presents a restructured framework, which is developed on the basis of existing frameworks previously discussed(NCA Report, 1998). This new framework classifies electronic commerce issues into 3 aspects : Infrastructure Issues include the technical base of electronic commerce, Environment Issues include the factors which support the expansion of electronic commerce and Contract Process Issues include the factors which should be harnessed in the commercial contract process.

In this study, Technological Infrastructure Issues including telecommunication infrastructure, technical standards and security, focus on the technical development. The Environment Issues includes the issues such as protection of intellectual property which protects the economic value of digital products, privacy and contents. Electronic Commerce Process Issues include the issues such as electronic payment system, uniform commercial code for electronic

commerce and customs and taxation. Further, as shown in <Table 3>, this framework includes electronic commerce promotion issues: analysis of economic effects of electronic commerce, small and medium enterprises, and the international linkage.

As described above, the framework suggested in this study is two-dimensional structure for understanding economic entities and for the development/expansion of electronic commerce.

## IV. Issues Analysis

### 1. Technological Infrastructure Issues

#### 1.1 Telecommunication Infrastructure

Global Electronic Commerce is possible through modern telecommunications network and communication device. But in many countries, telecommunication policies are hindering the development of advanced digital networks. The U.S. government articulated 4 principles that, it believes, should be the foundation for government policies all over the world: 1) encouraging private sector investment by privatizing

<Table 3> Framework for Issues and the Relationship of Interested Parties

		Consumer	Business	Government
Technological Infrastructure Issues	Telecommuni- cation Infra.	Cost-saving Accessibility	Bandwidth Expansion	Guarantee of public accessibility
	Technical Standard		Development and Expansion of Technical standard	Supporting private sector activity
	Security	Guarantee of reliability	-Reliability of Transaction -Development of Security Techniques	Establishment of Security & encryption policy
Electronic Commerce Environment Issue	Intellectual Property Protection	Protection of privacy/ Personal data	-Economic value of digital products	Establishment of Relating regulation
	Privacy Protection	Protection from Malicious information	-Legal usage of personal data -directives for usage of personal data	Establishment of Relating regulation
	Content Regulation	-Convenience of payment system -Reliability of information	-Self-regulation of Malicious Information -Responsibility of ISP	Establishment of Relating regulation
Electronic Commerce Process Issues	Electronic Payment System	Tax payer service	Stable payment system	Establishment of Relating regulation
	Uniform Commerce Code (UCC)	Consumer protection	Establishment of Uniform commerce code	Supporting private sector activity
	Customs & Taxation	Tax Payer Service	Fair tax payment	Identifying residents & sources
<b>Electronic Commerce Deployment &amp; Promotion Issues</b>		<b>Economic effect, Market Mechanism</b>		
		<b>Small and Medium Enterprises</b>		
		<b>International Linkage</b>		

government-controlled telecommunications companies, 2) promoting and preserving competition to prevent from monopoly in phone markets, 3) guaranteeing open access to networks on a non-discriminatory basis,

4) implementing, by an independent regulator, pro-competitive and flexible regulation that keeps pace with technological development.

The goal of the United States is to ensure that users can access to the

internet on reasonable and nondiscriminatory condition. To achieve this goal, the U.S. government facilitate competition among online service providers which will lead to improved telecommunication infrastructures, more customer choice, lower prices, and improved services.

Since the European Union recognizes that the widespread adoption of EC requires efficient, affordable and widely available telecommunications infrastructure, EU believes that it must match the cost, capacity, access, choice, security and user-friendliness of such facilities through the world. Currently, the EU Commission has worked with the EU Members States, as well as with its trading partners, towards the full and timely implementation of that. Furthermore, it recognizes that regional disparities in the cost, quality and accessibility of electronic commerce infrastructure must be reduced to allow full access for remote areas to global markets.

The Commission reaches the conclusions that practical implementation of electronic commerce depends on the development of high-performance data processing and transmission infrastructure, and that the information and telecommunication infrastructure needs to be changed into that of super high-speed. The

Commission also believes that super high-speed network is the most basic infrastructure that makes electronic commerce available.

## 1.2 Technical Standards

The United States believes that not governments but the marketplace should determine technical standards and other mechanisms for interoperability. Technology is moving rapidly. Government attempting to establish technical standards would only risk inhibiting technological innovation. The United States considers that standards can be employed as non-tariff trade barriers.

To ensure the growth of global electronic commerce over the internet, standards will be needed to assure reliability, interoperability, ease of use and scalability in areas as follows: 1) electronic payment, 2) security, 3) security services infrastructures, 4) electronic copyright management systems, 5) video and data conferencing, 6) high-speed network technologies 7) digital object and data interchange.

The United States believes that there need not be one standard for every product/service associated with the global information infrastructure. In some cases, multiple standards will



compete for marketplace acceptance. In other cases, different standards will be used in different circumstances. Accordingly, government should support market-driven standard development for improving interoperability.

EU views that if the present trend of developing incompatible standards continue, both businesses and consumers will be severely disadvantaged: 1) There is a risk that users become locked in to a specific solution, 2) It may be difficult to carry transactions between mutually incompatible systems, 3) Without commercial/ technological interoperability, it may be difficult to achieve information-secure-technology.

### 1.3. Security

The open and accessible nature of the internet make global electronic commerce available. But these are the drawbacks considered from the information protection perspective. Digital signature is necessary for the legally safe contraction on the internet as a mechanism that will permit users to know whom they are communicating with. Digital signature, using the accuracy of public key system, has security management functions such as Authentication, Integrity, Non-repudiation. But these functions

are valid on the premise of authentication of electronic commerce. Hence, a third-party Certification Authority which the contract parties can trust is needed.

The U.S. is taking steps that will provide the safeguards that both the users and society will need: taking steps 1) to promote the development and expansion of market-driven standards, public-key management infrastructure services, and key recoverable encryption products and 2) to liberalize export controls for commercial encryption products. The U.S. government works closely with the OECD to promote development of market-driven key management infrastructure.

The EU seeks to develop a policy which will aim to guarantee the free movement of encryption technologies and products. It also works at international level towards the removal of trade barriers for encryption products. As for the digital signature issue, EU initiative ensures a common legal framework encompassing the legal recognition of digital signatures in the Single Market, and setting up of minimum criteria for certification authorities. Some countries such as the United States, Canada, the European Union, and Australia are launching projects for establishing

national certification authorities, and are practicing commercial certification system under SET (Secure Electronic Transaction) which is the standard of credit-card base electronic payment.

In order to ensure reliability and security of electronic commerce, it is necessary to develop certification system as a technological and legislative base. At the same time, the interoperability and technological neutrality of certification system should be guaranteed. Furthermore, legislative action for establishing certification system, should be consistent with encryption policy and should not impose over-regulation on private sectors. At the same time, a certification system model which can be applied into various sectors of industries should be developed.

## 2. Electronic Commerce Environment Issues

### 2.1 Protection of Intellectual Property Protection

The most notable treaty for intellectual property protection at international level is TRIPs(Agreement on Trade-Related Aspects of Intellectual Property Right) adopted in Uruguay Round. However, this treaty does not sufficiently provide international norms for copyright

relating to duplication on the internet using digital technology. In December 1996, the World Intellectual Property Organization(WIPO) adopted The WIPO Copyright Treaty which provides the copyright for computer programs and original database, etc.

### 2.2 Privacy

If the collection, process, use, and supply of consumers personal data or contracted information is not properly managed, the consumer would feel his privacy invaded and this could be the barrier to the development of electronic commerce.

The United States recognized that its privacy principles are based on the notice and consent, and presents three values (privacy, integrity, quality) to govern the way in which personal information is acquired, disclosed and used online. The United States enters into a dialogue with trading partners, through both bilateral and multilateral channels, to build support for market-driven mechanism which is based upon the framework suggested by privacy protection principle. There is no inclusive privacy protection regulation in the United States, but it has a lot of individual laws.

EU recognizes that the use of strong encryption which ensures the

confidentiality of personal data is the foundation stones of electronic commerce. It views that national laws restricting exportation and importation of encryption technologies are adding substantial barriers to the development of electronic commerce in Europe. Hence, EU believes the removal of such cross border barriers is crucial for the implementation of the Single Market in electronic commerce. EU is so active in the area of privacy protection that it issued the Directive on the Protection of Individuals with regard to the Processing of Personal Data in 1995, and the Directive for the Protection of Privacy in Telecommunication in 1997 respectively. EU prohibits the transfer of personal data to the countries that do not extend adequate privacy protection to EU citizens.

### 2.3 Contents Regulation

As the use of the internet expands, content-related issues such as obscene or malicious messages, disclosure of personal data, hacking, illegal duplication, and the use of the internet on illegal purpose which cause significant social problems, are addressed internationally.

The U.S. government supports the broadest possible free flow of information across international borders.

In contrast to traditional broadcast media, the internet provides users with new technology to shield themselves such as filtering and blocking software. To the extent that effective filtering technology becomes available, content regulations traditionally imposed on radio and television would not need to be applied to the internet. In fact, unnecessary regulation could cripple the growth and diversity of the internet. Therefore, the administration supports industry self-regulation and development of easy-to-use technical solution.

In the European Union, any online service provider establishing a web site is subject to divergent national regulations. This may hamper the effective and creative commercial communications (such as advertising, direct marketing, self-promotion, sponsorship, and public relations etc.) and may create legal uncertainty. As a follow-up to the Green Paper on Commercial Communications, the Commission will come to forward with detailed proposal to remedy actual or potential difficulties. The countries such as United Kingdom, Germany, France are in the process of establishing/amending relating regulations in order to overcome the limitation of self-regulation recognizing that a minimum legislative regulation

should be needed.

The difference of concerns about internet content regulation of each nation could be led to international disputes if the illegal service or goods are contracted via the internet. The basic framework for the internet content regulation needs to recognize the historical, cultural background of each nation. However, to overcome the limitation of self-regulation and maximize the effectiveness of it, the minimum legislative regulation and international cooperation are needed. The key question is how best such objectives can be achieved practically.

### 3. EC Contract Process Issues

#### 3.1 Electronic Payment System

Facilitating safe and convenient electronic payment system is the most significant factor for expansion of electronic commerce. The most generally used system in electronic commerce is advanced credit-card payment system. In addition, inter-bank account transfer system is frequently used

The United States is working with international organization or other government in international fora to facilitate the global expansion of electronic payment systems. To ensure

safety of electronic commerce for suppliers and users, the contract parties and other international organization should cooperate.

EU recognizes that electronic commerce could not develop without sound, user-friendly, efficient and secure electronic payment systems and it considers the managerial framework of the electronic money systems. It recognizes that compatibility between electronic payment systems should rely on agreements among operators, and such agreement must be in conformity with the Communitys competition rules. To improve the security of new payment system, EU is considering the establishment of an regulation that includes all kinds of payment systems in different member states.

#### 3.2 Universal Commerce Code

There are practically no national borders on the internet based electronic commerce. The question is what rule of which country should be applied to the electronic commerce. In order to solve these problems, it is necessary to establish a legislation which can commonly be applied to universal electronic commerce. The open, international characteristics of the internet strongly requires the universal commerce code. Therefore, the

Electronic Commerce Model Law which UNCITRAL(the United Nations Commission on International Trade Law) adopted is very meaningful to provide the direction of international uniformity and harmony.

### 3.3 Customs and Taxation

Tax declaration and tax collection in electronic commerce is the common issue of the government and industry. Major nations react very sensitively to taxation issue. Governments are all concerned about potential loss of revenue, while industries are concerned about the effect of government regulation. The problem of potential distrust and uncertainty of electronic commerce can be resolved if the global taxation systems which protect the tax base, are developed under global cooperation. But the taxation systems which could be barriers to the development of electronic commerce, should be restricted.

The United States believes that no new taxes should be imposed on internet other than existing customs and taxation. It also believes that the internet should be a tariff-free environment whenever it is used to deliver products or services.

As mentioned above, the major countries have reached the consensus

on the basic principles of electronic commerce related taxation issue. They agreed that the taxation imposed on electronic commerce should be simple, should lead spontaneous tax payment, should not give intentional benefit or disadvantages to the traditional trading, and should not be the barriers to the development of electronic commerce.

## 4. Electronic Commerce Deployment & Promotion Issues

The deployment and promotion of EC has received less attention in international cooperation for EC research. This section addresses the deployment and promotion issues required for the successful globalization of EC.

### 4.1 Participation of Small & Medium Enterprises

Electronic Commerce is an opportunity for all businesses, especially SMEs (Small & Medium Enterprises), if they can access the global markets and exploit the potential of the single market (Kambil et al. 1999). It can be a powerful force for reducing the barriers of distance as well as overcoming relatively weak marketing network. Mechanisms of electronic commerce may facilitate the

communication between small firms and customers across geographical space, opening new possibilities which are vital if the smaller firms are to be more than marginal players in market. This is the reason why many SMEs initially embrace EC activities in the hope of achieving marketing benefits, better global exposure, and better customer relations (Hamill, 1997)

Despite the fast-growing opportunities, the power of the EC as a sales vehicle seems to be universally proportional to the size of the small seller. Smaller firms may also be excluded from the marketplace by large firms creating their own electronic payment systems and virtual marketplaces. Accordingly, smaller firms which do not have access to electronic trading networks, might be forced to leave the market. Currently, the position of SMEs in electronic commerce seems to be so weak that they cannot compete with big companies without further support. Few of research activities and projects, however, focus on the SMEs business sector on EC (Poon & Swatman, 1999).

The growth of SMEs plays a significant role in the economic vitality of a nation. Given the important role played by SMEs in many world economies, the success of SMEs gaining business leverage from EC is

critical to the future of the global or many regional economies. Therefore, for national economies as well as successful dissemination of EC, it is necessary to support and encourage the participation of SMEs into EC. The efforts to support SMEs in EC should be focused on the following two areas; 1) network and 2) electronic business. Network support should provide SMEs with the ease of access to EC as well as network service. Access by SMEs to EC requires a public policy 1) to ensure their personnel be appropriately educated and trained and 2) to provide SMEs with network service. Electronic business-related support is concerned with cyber marketing, reinforcing business process, information-providing, and consulting for electronic business. The efforts should be able to contribute to enhancing SMEs capability in multinational operation, resulting in high opportunity for business.

#### 4.2 International Linkage

The international linkage is required to create an knowledge or information repository to follow up the continuous changes such as regulatory and technological development, as well as research work. This inventory should be useful by providing the opportunity to keep up-to-date on regulatory

development aiming at a unified market of global EC. It may also provide for the opportunity for all public and private actors to compare their actions and EC-related projects with those of their counterparts of the other countries. It should be able to facilitate the EC-related information transfer (or knowledge-transfer) and encourage partnerships at different levels (university, region, nation) between regional or neighboring countries. Two European Unions projects (IDA: Interchange of Data between Administrations and ESIS: European Survey of Information Society) can be good models for the international information-sharing and knowledge-transfer.

#### 4.3 Economic Effect and Market Mechanism

For the promotion and expansion of EC, the next step is to analyze and estimate the impact of EC on industries, economy, and society in general. Most efforts in EC have been invested on building such infrastructures as developing technologies, establishing regulatory environment, and creating shopping malls, so far. Payback is often unpredictable on the increasingly large investment on electronic commerce.

The on-going changing characteristic of electronic commerce (Gartner, 1995) needs to be reviewed constantly because this is a new frontier in the process of opening up, whose resources remain largely unexplored, whose risks and opportunities are poorly understood, whose rules are evolving rapidly.

In addition, the characteristic and impact of EC may vary from country to country according to the extent of its informatization. The experience of the leading countries will be useful for the other countries to avoid possible trial errors and to guide in planing.

Another initiative should begin to promote EC from the market perspective. For further promotion, EC should be understood on the basis of market mechanism in which market participants such as buyers, sellers, and broker work interactively (Gartner, 1995). The most critical development in the EC market should be concerned with role of the intermediaries who will structure electronic markets. Such a dynamic should be at work globally across border in order for EC to be global. The market mechanism should not be explored within a country or a regional economy, but in a global single market. International co-work on the issue will guarantee the fruitful output in promoting the global EC.

## V. Conclusion

Governments, industries, and universities in the developed countries have been working actively on developing and expanding electronic commerce, since successful dissemination of EC is recognized to be an important factor for keeping their national economic competitiveness. The countries have made significant efforts on inducing the EC environment more favorable for them during globalization process of electronic commerce. They lead the globalization through the international cooperation and co-research. That is the reason why EC is emerging as an important agenda in major international cooperative organizations including APEC, OECD, G7.

Core elements are globalization, multi-cultural aspects, and multi-disciplinary research which concern the technological issues, financial issues, legal issues, business issues, and etc. This paper reviewed current status of EC and identified some issues related to worldwide EC diffusion and expansion. The main areas for global cooperation have been technological infrastructure issues (network, standard, security), environment issues (intellectual

property, content), and process issues (electronic payments, tax, uniform commerce code). Still, there should be much room to be worked internationally on these issues. However, international co-work should begin on the issues for the EC deployment & promotion in order to disseminate and expand EC globally. Table 4 summarizes the study issues which requires international cooperation. It seems that the issues for EC-deployment and EC-promotion (SMEs participation, EC-implementation, practice, and market mechanism) have received much less attention than deserved so far. These topics should be explored with the concrete aim of defining how the concepts should work in practice to be more favorable for our economies.

The results of this paper are expected to raise awareness in activities which require international cooperation to promote EC. This paper also suggests a three stage EC development paradigm (Figure 1). It will be useful for the development and implementation of EC-related policies and strategies, which can be generated properly through international cooperation.

The number and scope of the research papers and projects on EC, together with the enthusiasm and willingness of the EC participants to

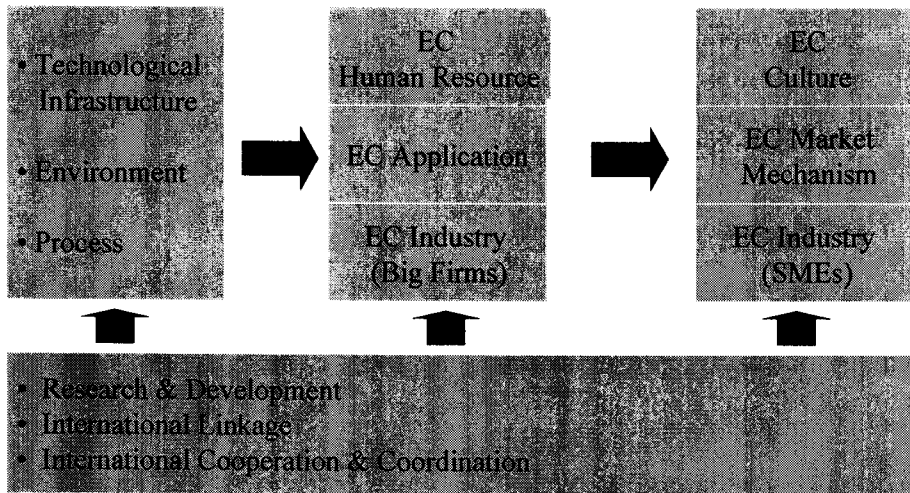


cooperate on a global level, can be development of electronic commerce. regarded as a good indicator of its The first step, for the purpose, will be increasing weight and importance in to organize a regional forum to global economy. Therefore, the arrange workshops, to present the participants from a variety of the fields initiatives of each participants of should be encouraged to continue to electronic commerce, and to exchange work together on the key themes which both their ideas and recommendations are identified as crucial to the further for cooperation and follow-up research.

<Table 4> Electronic Commerce Related Study Issues

		Study Issues for International Cooperation
Technological Infra-structure Issues	Telecommunication Infra	· Telecommunication Network Expansion · Development of Various Application SVC
	Technical Standard	· Enhancing Interoperability · Enhancing Interconnectivity · Enhancing Network Reliability
	Security	· Internationally acknowledged, Authentication Certificate · Consistent Encryption Policy, Electronic Signature
EC Environment Issues	Intellectual Property Protection	· Establishment of Data Base · Scope of Responsibility of ISP
	Privacy Protection	· Difference between countries in the limit of collecting, managing, distributing private information
	Content Regulation	· Cultural Difference between countries
EC Process Issues	Electronic Payment System	· Different Financial Systems/Services between countries · Difference in Credit Level
	Uniform Commerce Code	· Different Law Regulation · Different Contract Procedure
	Customs Taxation	· Difference in Tax Policies
EC Deployment & Promotion Issues	Small/Medium Enterprises	· Network Support · Training & Education, Human resources · Implementation & Best Practice
	International Linkage	· Policy-building forum for opinion-generation · Information & Knowledge-sharing, transfer
	Economic Effect/ Market Mechanism	· Economic Effect Analysis · Consumer Behavior in Electronic Market

<Figure 1> EC Development Paradigm



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## A Review on the Critical Issues for Global Electronic Commerce

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### Abstract

Electronic Commerce (EC) is a relatively new and has been attracting a considerable amount of attention. Even though it is still in an introductory stage, growth rates are impressively high and its economic importance will continue to grow. Electronic Commerce is born to be global because its connectivity using the Internet is universal. As Electronic Commerce accelerates the globalization, it will also increase both the interdependence of national economies in different countries and the need for international cooperation and coordination. Electronic Commerce is really a global challenge that requires global solutions. For this reason, Electronic Commerce becomes an important agenda in major international cooperative organizations including APEC, OECD, and G7 (G8).

However, current international discussions on Global Electronic Commerce are initiated mostly by the United States and European Union (EU). The objective of this paper is to raise awareness creation activities in which the international cooperation is needed for promoting the global electronic marketplace in Asia. For this purpose, this paper reviews the approaches of U.S. and European countries (or European Union), and suggests an development framework on the basis of the reviews. The framework is used to analyze current issues around Electronic Commerce, and identify some fields which require coherent work among researchers in different countries.

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