The Management of E-commerce

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(Jan. 27, 2001)

Abstract: Based on the observation of the E-commerce management practice in other countries in the world, this essay intends to discuss the general principles of E-commerce management, including market orientation, government facilitation, international coordination, establishment of focal points of development, consistency and cultivation of talented personnel. It also attempts to analyze the challenges E-commerce brings to the policies and regulations that are oriented to the traditional businesses in terms of establishment of contract, the effectiveness of law in cases of failure of the computer system and the protection of the consumers’ rights. It will outline the framework of the new policies and regulations needed by E-commerce, including industry policy, regulations on information resources, intellectual property on the Web, security and privacy, use and maintenance of the basic infrastructure and technology and financial regulations. This paper is an attempt to discuss the various new problems in E-commerce, such as the protection of intellectual property and privacy, and the problems of technological security and system security, which are closely related to and yet independent from each other.

Key words: E-commerce  E-commerce management  E-commerce system

I. General principles in E-commerce management

E-commerce management is a problem that has attracted a lot of attention in other countries throughout the world. In the United States where E-commerce is the most advanced and is developing at the fastest speed, it has posed new challenges to the whole economy and the society, especially to the government administration, which explains why the U. S. government has attached great importance to it. In the second half of 1996, the Ministry of Finance of the U. S. government issued the white book on “The Selective Taxation Policy on Global E-commerce”. At the end of 1996, President Clinton proposed the setting up of an inter-departmental organization for administration and coordination of E-commerce – The U. S. Government Working Group on Electronic Commerce, which was put in charge of making policies on E-commerce and coordinating and supervising their enforcement in the related government organizations. On July 1, 1997, President Clinton issued A Framework for Global Electronic Commerce, which outlines the framework of the U.S. federal government’s policy on E-commerce and thus produces positive influence on the development of E-commerce in the U. S. and other countries.

Facing the rapid development of E-commerce, China also intensified its work on E-commerce management. As early as 1997, the National Conference on Information Work was held in Shenzhen. In Feb. 1998, the Meeting of Heads of Office of Information at Provincial, Prefecture and Township Level was held, at which it was proposed that the use of information technology in fields, areas and enterprises should be equally emphasized. Government departments and industries all attach great importance to the use of information technology in difference fields. Government organizations in fields such as finance, taxation, trade, science and research, education and health have all increased their input. Enterprises are also using the information technology to improve the traditional way of work and management. E-commerce is an important trend in information technology, therefore it is the major task of the construction of China’s information technology. In recent years, the rapid development of information technology, the fast growth of the new economy, the accelerating restructure of the global economy and the change of the society have all provide China with a good opportunity to develop E-commerce, to facilitate industrialization with the information technology, to participate in globalization and to achieve China’s modernization. The Chinese government
has made E-commerce a major task in developing information technology, and is actively 
promoting and carefully planning its development. The development of E-commerce is not 
merely a problem of economy and trade, nor is it just a revolution on the mode of commerce. 
It is also related to restructuring of the economy and the transformation of the society, and is 
therefore a matter of life and death to the country. Guided by those believes, E-commerce is 
listed as a major task of the construction of information technology. This is also why the 
government has been trying to create a favorable environment and actively promoted building 
the framework of the development of E-commerce with Chinese characteristics, though the 
basic infrastructure is yet not ready.

Different countries in the world have followed some general principles in E-commerce 
management. Those principles have played an important role in maintaining and promoting a 
healthy development of E-commerce.

1. The development should be based on privately run organizations, and should be 
driven by the market. Inappropriate restrictions should be avoided.

The development of the Internet should be driven by the market. This is because usually 
technical renovation, service expansion, extensive participation and lower prices can only be 
achieved in a market-dominated environment, not in a restricted environment. Even in the 
fields where joint activities are held, the government should encourage self-management in the 
industry and self-discipline in the enterprises. Thus, the E-commerce management should be 
mainly conducted by non-governmental organizations and self-discipline organizations of the 
industry. The government should avoid making inappropriate restrictions. The government 
inference and participation should be minimized in the process of purchasing products or 
service on the Internet and reaching an agreement between the two parties in the trading. The 
government should strictly limited the unnecessary new regulations on commercial activities 
on the Internet, simplifies the office procedures and avoid levying new taxes.

2. The government should emphasize its role on building a macroenvironment and 
providing guidance to promote and facilitate the E-commerce development.

One of the necessary parts of the basic work of the government in promoting E-commerce is to 
provide the policies and regulations for E-commerce. At a time when the E-commerce 
market is developing rapidly, the government should make and enforce policies and 
regulations on E-commerce according to the characteristics and stages of development of the 
local market, with reference to those in other countries, in order to build a favorable 
environment for E-commerce. Policies and regulations that are lagged behind the 
E-commerce development will cause unhealthy development of the market as they can not 
provide adequate guidance and rules for the new market. The purpose of government 
participation is to create a predictable, relatively stable, sustainable and clear legal 
environment. In the fields where government inference is needed, its role should be to ensure 
competition and contract fulfillment, protect intellectual property and privacy, forestall the 
production of fake products, improve the openness and help to solve conflicts.

3. International coordination of E-commerce development should be emphasized.

One of the prominent characteristics of E-commerce is it can break the limit of time and space, 
and thus effectively break the visible and invisible barriers between countries and areas, which 
is why its impact on world economy and trade can not be estimated. The characteristics of 
the global E-commerce determines that one government can not make its rules and enforce 
them. Meanwhile, because the developed countries and the developing countries are in 
different stages of the E-commerce development, it is necessary to establish a fair framework 
of international rules on E-commerce that can be accepted by the international society. 
Governments take part in the international dialogue and discussion on this as representatives of
their countries. At present, many international organizations and institutions, such as WTO, UNCTRAL, OECD, G-8, International Chamber of Commerce and the World Organization of Intellectual Property, have all actively participated in coordinating the framework on rules and management of E-commerce, and researching and discussing the policies and technological norms of global or regional E-commerce. It can be expected that internationally operable multi-lateral agreements will be reached in the near future. WTO and OECD are the two dominant forces in this, and UNCTRAL has proposed a model of E-commerce law. In addition, E-commerce, as a rapidly growing new economic phenomenon, is faced with a lack of policies and experiences in management in all countries. International cooperation and exchange of experiences can help to reach mutual understanding and spread the most effective measures. However, it is no easy task making international rules on E-commerce as different interests and conflicts make it very difficult to conduct dialogue and coordination. In a word, the government’s role in promoting international information exchange on E-commerce, coordinating policies and regulations, and facilitating technological cooperation between countries, can not be replaced by other organizations.

4. Attention should be paid to establish the focal points of E-commerce development to ensure its stable development and progress step by step.

In the development of E-commerce, all countries should decide on its focal points, so that they used the resources on where they are most needed. Generally speaking, most of the countries make the construction of basic infrastructure and the development of key technologies their focal points. They pay much attention to building and developing the basic infrastructure. For instance, Canada, after many years planning and guiding, has set up an advanced net system throughout the country, and has become one of the countries with the most advanced network system. The price of Internet use is the lowest in G-7, which helps to spread the use of Internet. In recent years some of the world leading Internet technology development companies are also from Canada, such as Nortel and CANARIE. Information processing and network connection in Canada, with their high speed, reliability, frequent upgrading and security, have laid the technological foundation for E-commerce. At the same time, Korea is also actively enhancing the building of its information infrastructure by upgrading the national communication network, constructing and improving the delivery share system of net shops to reduce the cost of product delivery of each net shop. It has also intensified the research and development of E-commerce technology, pushed forward the standardization of E-commerce and increased government order of goods on the net.

5. The principle of consistency.

It has been understood in all the countries that diversified and multi-leveled administrative measures on Internet can only jeopardize the free trade and the development of global commerce. The U. S has been playing an active role in promoting a global framework. It first put forward “A Global E-commerce Framework”. Based on the principles and related policy proposals in the “Framework”, the U. S. actively urge other countries and international organizations to approve its framework. Indeed, the “Framework” received wide support the developed countries immediately after it came out, and became the guiding principles in discussing policies, laws and regulations of global E-commerce. In Dec. 1997, EU and the U.S. issued a joint communiqué on E-commerce, in which EU reached an agreement with the U.S. on the guiding principles of global E-commerce, and promised to establish Duty-free Cyberspace. In May 1998, the 132 member countries of WTO signed “A Declaration on E-commerce”, followed by OECD countries’ accepting the proposal of tariff exemption, which is approved by WTO. In Feb. 1999, EU put forward another proposal on coordinating global communication with a focus on E-commerce. In May 1999, the U.S. and Japan issued a joint communiqué in which they established common principles on tariff, taxation, privacy and identity authorization. They emphasized the importance of the two economic giants working together in discussing and cooperating on E-commerce and clearly expressed their plan to use
their position and influence in the world economy to jointly make the global E-commerce framework to keep and enhance their leading positions.

6. The cultivation of talented personnel in E-commerce is the key to success.

The key to the realization of E-commerce is people. The government should encourage educational institutions to teach the students about Internet. In schools where conditions permit, especially in colleges and universities that are running courses on Internet and E-commerce, such as economics, trade and computer, the stress should be put on cultivating high-quality graduates with interdisciplinary knowledge. At the same time, people with special knowledge on E-commerce should be introduced into the country through various ways. Examples can be seen in some Internet companies which have been joined in by people coming back from abroad, who have brought back the latest information.

II. Policies and Regulations on E-commerce

1. The challenges E-commerce has brought to policies and regulation for the traditional commerce.

One of the effective ways of managing E-commerce is policies and regulations on E-commerce. E-commerce has brought challenges to many policies and regulations that are used in traditional commerce. The virtual environment for E-commerce activities has caused changes in readjusting and standardizing traditional commerce. E-commerce is different from traditional commerce in the policies and regulations they need. First of all, in terms of the application of policies and regulations, policies for traditional commerce are applied on a relatively concentrated group and is relatively easy in controlling, restricting and safeguard some subjects in their commercial transaction. This is because the qualifications of the trading parties are restricted in traditional commerce. In traditional commerce, not everyone can easily become a dealer and take part in the commercial activities. Therefore, traditional commercial policies and regulations have relatively narrow application, and this makes traditional commerce highly controllable. In E-commerce, the entry requirements are much less restrictive. Different forms of E-commerce, such as B2B, B2C, G2B, G2C and C2C are popular on the net. The subject of the dealing is diversified, not concentrated and virtualized. Policies and regulations on E-commerce should have a wide applicability and combine specialized management with comprehensive management in order to restructure the complicated subjects in the transaction in E-commerce and establish their proper relationship to maintain the market order. Secondly, policies and regulations on E-commerce should have flexibility. The subjects of business on the net is diversified, and the conducting of business transaction is not so concentrated with more complicated business relations. These determines that policies and regulations on E-commerce should be flexible enough to be applicable to most cases and to be adjusted. When new things emerge, related policies and regulations should respond quickly so that the policies and regulations are not left behind.

It is easy to see the challenge on traditional law by E-commerce. When business transactions are virtualized, traditional laws have demonstrated their inability to adapt to the new situation. This can be seen in the following three aspects:

1) The setup of contract. According to the principle of the Law of Contract, a contract should be made according to the principles of order acceptance. However, two problems often come up when setting up contracts for net shopping: firstly, the difference between order and invitation of order, which is very important. For instance, if a consumer sees a product he likes much. He sends an email to express his wish to buy it. However, as the product is still in the stage of trial production, the company cannot fulfill the contract. To judge whether the company is liable or not depends on whether the company sends out
information of order or invitation of order. The meaning of order is: if when one party sends out a message (to buy something at a certain price and a certain time), the other party accepts, then the contract is set up. The meaning of order invitation is: one party hopes the other party sends out orders of things it can fulfill. Secondly, how to judge whether a contract exists or not. In circumstances where the message is sent through E-mail, it is easy to judge whether a contract exists. However, it is difficult to judge whether a contract exists or not when the dealing is made by the automatic reply system.

2) Legal validity when computer system breaks down. If computer breakdown has caused mistakes in one party’s message, how to judge the validity of the message? There are two possibilities: one is in a closed-circuit network business environment, such as EDI. As the users all signed an agreement with the system before they join in, the agreement usually contains articles on this. If the agreement does not contain any articles on this, the message will be seen as invalid and a contract can not be set up. The other is shopping on an open website where anyone can enter the website. If the shop’s computer breaks down, the shop should be liable for the loss. It should not use the breakdown of computer system as the legitimate reason to deny the existence of the contract. However, if the customer’s computer breaks down, the contract can not be set up, and this is compatible with the principle of the Law of Contract. This is because the shop should be responsible for the security of the transaction while the most important thing for the customer is to make sure the message is correct.

3) Protection of the rights of the consumers. When shopping on the net, the shops usually use a formatted contract in order to save time for the consumers. Most of the contracts are the so-called clip-wrap articles, that is, the consumers can only click on “Yes” or “No” which makes it impossible for them to bargain for a deal. Among the formatted articles of contract, there are many unfair ones, such as the shop is not responsible for delay in delivery of the goods. As those articles are usually of a few words and yet with a lot of meanings, most consumers will click on “yes” without reading them carefully. When disputes occur, consumers can protect their own interests by using the articles on formatted articles in contract and consumers’ rights to be informed in The Law of Contract and The Law of Protection of Consumer Rights.

2. New policies and regulations are needed for E-commerce.

E-commerce can be seen as a special industry in the national economy. It needs powerful and effective regulations to control and regulate the market environment in order to ensure the newly-emerged trade form a rapid, safe and healthy development according to its own rules. General speaking, E-commerce needs policies and regulations in the following fields:

1) Policies and regulations of the industry
   This include the following three aspects:
   (1) Law and regulations on entry permit to the market. The special characteristics of the E-commerce industry decides that laws and regulations on the entry permit to the market are important to its development. Requirements on the organizations engaged in E-commerce and the qualifications of the personnel in the industry should be stipulated in the form of law and regulation. The procedures needed to enter the industry and other rules should also be written in the form of law or regulation to reduce the possibility of cheating and illegal dealing.
   (2) Laws and Regulations on Code of Conduct of the Subjects of the dealing. The internal order of the E-commerce industry is maintained by a complete set of laws and regulations. These include: the interpretation of the principles of fair competition and survival of the strongest, which
should be protected by law; laws on the quality of goods and service; laws and regulations on the protection of consumer rights; and laws on special conduct in the industry (such as information delivery, electronic banking service and credit on the net).

(3) Laws and Regulations on the coordination between industries. The E-commerce industry has another important characteristic: it has extensive and close relations with other industries. In the national economy, almost all the industries have something to do with the E-commerce industry. Among them, some are closely related to E-commerce, such as the information industry, the banking industry and the circulation of the traditional commerce. Therefore the E-commerce industry has complicated relations with other industries, and it is very important to make those relations grow healthily.

2) Laws and Regulations on information resources.

E-commerce can not be separated from information resources, therefore the core of E-commerce comes from continuous development and use of information resources. Information is the bridge of communication in E-commerce and information itself can be the object of E-shopping. It will be inevitable for the development of E-commerce to issue the Law of Information to regulate the development and use of information resources. Laws and regulations on the development and use of information resources should include the following:

(1) Laws and Regulations on the standard of information. For instance, a government information standard, which will realize the complete openness of government information under the condition that state secrets are well-protected, and will safeguard the authority of the information; a private information standard, which will follow the principles of fairness and will be on the voluntary basis. It will protect privacy. Inter-country information standard, which will ensure the openness, fairness, mutual benefits and non-interference of inter-country information flow. Generally speaking a country should be allowed to screen the information that flows into it.

(2) Laws and regulations on the management authorizing system of information resources at different levels and the legal liability of the abuse of the system. Information is the same as other objects of legal relations and thus should be protected and used appropriately. Those who have misused it, should pay for the damages they have done. Those who have infringed upon other people’s rights to information should also pay for the damages they have done.

3) Laws and regulations on intellectual property on the Internet.

The problem of intellectual property often comes up on the Internet, such as the problems of how to use and protect Trademark rights, patent right, copyright, business secrets and patented technology. Therefore the making of laws and regulations on intellectual property rights should not be neglected in the development of E-commerce.

(1) Laws and regulations on the ownership and protection of copyright and linkage right (?) on the Internet. The digital information that are carried on the Internet, such as intellectual products including texts, videos, sound, pictures and software all bring the problem of the ownership and protection of their copyright and linkage right. It is often questioned that whether the traditional regulations on the use and protection of copyright and linkage
right (such as the Copyright Law in China and the international Bonn Covenant) can keep up with the development of the Internet. As they believe that the existing laws can not answer the question satisfactorily, a lot of countries in the world are making amendments to their laws so that they will meet the demands of the development of the Internet which has proved to be full of vitality. On Dec. 20, 1996, under the leadership of WIPO, WIPO Copyright Treaty and WIPO Performing and Recording Treaty were passed. They provided not only legal regulations for the protection and use of copyright and linkage right on the Internet but also reference and basis for each country’s legislation work in this field.

2) Laws and regulations on the protection of trademark rights on the Internet. Immediately following the emergence and commercialization of Internet comes the problem of protecting trademark rights on the Net. For instance, the authorization and protection of the trademarks used on websites or web pages; the guiding principles of registration of site names and the standards of conferment of the names; or whether these should be put into the same category as trademarks, and how to readjust the traditional Law of Trademarks so that they can be applied to the Internet.

3) Laws and regulations on the protection and use of other intellectual property rights. The application criteria and procedure of the patent of special internet hardware technology and software need to be standardized by law and regulations. So are the problems of the patent right of the technology used in carrying information and of commercial secrets.

4) Laws and regulations on security and secrecy.

Security and secrecy are matters of vital importance to the healthy development of the standardization of E-commerce. Various technologies on Internet security have played an important role in maintaining E-commerce security. However, they are far from enough. We still need a complete system of law and regulations on security to enhance the security of the non-traditional way of doing business from the non-technical level. These involve the following aspects:

1) Laws and regulations on security of communication technology, such as the security of telecommunication network and the Internet. With the development of E-commerce, laws and regulations on the security of communication technology should put on the agenda.

2) Laws and regulations on the technology of information and codification. One of the problems of E-commerce is the security of the great deal of private information (the protection of privacy on the Internet). With the development of Internet technology, new technology on the net will emerge in great number, and so will the cases of abuse of information (such as hackers). This not only calls for the protection of private information, but also the protection of the confidential materials of the governments and enterprises.

3) Laws and standardizing documents on the definition and protection of state secrets and business secrets, and the flow of information between countries. In the information age, governmental services are also digitalized. It is an inevitable trend that government office work will be conducted on the Net, which will also reduce the number of staff of government offices and increase efficiency. Doing business on the Net will also give more opportunities to the businesses and reduce the cost of transaction. However, not all the information should be open to the public and circulated on the Net. Therefore laws and regulations are needed to define and protect state secrets and business secrets.
(4) Laws and regulations on the principles of dealing with Net breakdowns, and on making compensations and other payments. It is impossible for technology and laws to have no loopholes. We need to make regulations on how to deal accidents that happen in the “blind spot area” of technology and laws and on the application of law. These regulations should also be able to predict the changes in the future.

(5) Laws and regulations on the definition, judgement and punishment of computer crime. Criminal activities will also occur in the virtual world, and will in a more complicated and hi-tech form. It is more difficult to convict the suspects of their crimes. As electronic data can be copied and changed, it has posed an unprecedented challenge to the work of collecting evidence and deciding the authenticity of the evidence. According to the principle of the Criminal Law, a person can not be convicted of a crime that is not listed in the law. Therefore a complete set of laws and regulations on information crime should be made to punish the criminals and protect people’s property and security.

5) Laws and regulations on the use and protection of the basic infrastructures and technology.

The proper use of the basic infrastructure and technology should be given a clear definition in the form of law, which will also ban the misuse and abuse of communication infrastructure and technology in all the forms. It should including the following:

(1) Regulations on the technological standards of E-commerce. In order to keep their advantages, Internet service providers usually keep their technology a secret, which causes the problems of incompatibility of E-commerce related technology among the ISPs. This will increase the cost of transaction. Therefore it is urgently needed for some international organizations to set up technological standards for international ISPs.

(2) Regulations on the compatibility of the electronic markets in different countries. As the development of E-commerce is closely related to the construction of the basic infrastructure of Tele-communication in each country, E-commerce would be out of question without the complete basic Tele-communication infrastructure in different countries in the world. Nevertheless, as each country tends to protect its domestic Tele-communication industry and set up a man-made “fence” in the borderless virtual world, the development of E-commerce is jeopardized. This is why opening the domestic market is the common concern, especially for China, as it is about to enter WTO.

(3) Laws and regulations to clarify the ownership and right of use of the basic infrastructure and technology, to define their proper usage and to punish infringement on those rights. With the purpose of awarding the owner of advanced technology and facilitating the development of E-commerce, we need to make laws and regulations on the ownership and right of use of E-commerce related basic infrastructure and technology and the contents of the right. In addition any infringement of these rights should be punished.

(4) Restrictions on the improper use of the basic infrastructure and technology of tele-communication, and take strong measure against any criminal activities based on improper use of them. These include the production and selling of pornographic products, and gambling on computer games. The protection of infrastructure and technology is to ensure the smooth operation of E-commerce activities and to safeguard the key technologies related to hardware and software. The software and hardware infrastructure of E-commerce mainly includes equipment for transmitting
information, equipment for doing electronic transactions, various Internet platform and software system. E-commerce related technology mainly includes technologies of information and computer, both with and without patent.

6) Laws and regulations on finance in E-commerce. E-commerce does not only pose a challenge to the traditional commerce, it also brings opportunities and challenges to the finance industry by “reshuffling” it. We should be quick in making laws and regulations to standardized the new business brought by E-commerce to the finance industry.

(1) Laws and regulations on paying electronically. The traditional monetary system and the traditional way of making payments, such as using bank notes, checks and exchanging money and goods are faced with challenge on the Internet. To adapt to the high speed and paperless character of E-commerce, a new way of making payments which is safe, quick and convenient – “electronic payment system” is needed. This is not a simple question of how the consumers make payments after shopping, it will also incur the following problems: the responsibility of banks and other institutions that issue electronic money; the problems of new payment tools, electronic authentication and payment system and record of transaction which will come along with the development of the Internet. All these need the standardization and testing of law.

(2) Laws and regulations on payment tools. The setting up of an effective electronic payment system is supported by various payment tools (such as electronic money). The electronic money in the broad sense includes: traditional electronic banking card such as credit card, transfer card, and ATM card, and new payment tools such as intelligence card, deposit card and digital cash. In order to prevent cheating in the E-commerce and the confusion in electronic settlement of account caused by the diversified payment tools, laws are needed to stipulate the requirements and standards of the issuing of electronic money, the rights and obligations of the issuers and buyers of electronic money and who should have the right of supervising of electronic money.

(3) Laws and regulations on the business scope and the rights and obligations of the Internet banks and the center of authentication. Both Internet bank and virtual bank have come into being and will become more and more important. It has greatly promoted the development of E-commerce that banking services are put onto the Net and banks are virtualized. Internet bank is an innovation on the basis of traditional banking while virtual banks are an innovation of the system of banking. The former may cause legal problems such as system security and risk sharing while the latter will encounter the problem of business licensing. The safe operation of E-commerce depends also on the electronic authentication center.

7) Other laws and regulations

Apart from the above mentioned laws and regulations, other E-commerce related laws and regulations include: laws and regulations on the kinds of taxes levied on the Net, tax rates and jurisdictional rights; laws and regulations on the effectiveness and implementation of electronic contracts; laws and regulations on the protection of the rights of consumers on the Internet; and anti-unfair-competition law and anti-monopoly law that can be applied to E-commerce. We are sure that with the development of E-commerce, more and more new laws and regulations on E-commerce will be made.
Governments and international organizations should actively follow the development by improving the existing laws and regulations and making new laws and regulations to help E-commerce develop healthily.

III. The protection of intellectual property rights and individual privacy in E-commerce.

1. The protection of intellectual property rights.

In E-commerce, computer networking and digital technologies are widely used. The combination of human intelligence and the high-speed of computer have satisfied people's needs to accomplish various commercial activities efficiently. The E-commerce in the network environment has made some of the distribution of commodities invisible. Negotiating, signing contracts, ordering and receiving the goods are all done on the computer network. This has caused new problems in the protection of intellectual property.

1) The intellectual property rights and international “integration”.

The problems of intellectual property rights newly emerged in E-commerce mainly concentrate in the application of computer networking. The rapid development of computer networking has led to the demand of sharing data and information and thus is in direct conflict with the principle of intellectual property rights. One of the most prominent characteristics of intellectual property rights is its ‘exclusiveness’, while the information on the Internet that should be under the protection of intellectual property rights are open to public use, and can hardly be controlled by its owner. Another characteristics of intellectual property rights is that it is country specific, which is again the characteristics of “borderless” transmission on the Internet.

To resolve these conflicts, most countries in the world maintain that an international covenant should be signed to enhance the protection of the “exclusiveness” of intellectual property rights. In Dec. 1996, WIPO organized in Geneva the signing of The Covenant of WIPO and The WIPO Covenant on Organizing Performance and Records, which include articles on the protection of copyright on Internet and on the interpretation of extending the existing rights of copyright to their digital applications. In practice, the infringement of copyright on the Internet can happen anywhere in the world once the unauthorized copy is put onto the Net. It is impossible to attempt to inhibit the borderless characteristics of Internet transmission. Most countries and areas in the world are trying the resolve the conflict by weakening the country-specific character of intellectual property rights and accelerating the process of internationally integrating the laws on intellectual property rights in different countries. However, the problem is that a common standard is need for integrating internationally the laws on intellectual property rights, one example of which is the TRIPS by WTO.

2) Copyright Law and the protection of copyright on the Internet

The most common problem in E-commerce is that of intellectual property rights. In the E-commerce that depends on Internet transmission, a new problem of the protection of copyright has come up with the invisible selling of products that are protected under copyright, especially problems that are different from those in traditional protection, such as the protection of trademarks, trademark signs, goodwill of products and the images of products on the Internet. E-commerce has posed a challenge to the Copyright Law and Trademark Law in our country.
The Copyright Law in China includes in articles on the digitalization and Internet distribution of the art works. Firstly, the subject and object of the art works in the Internet environment have changed. The subject of the copyright in an open form is difficult to define, and the categorization of the works is made difficult by the existence of information network works, multi-media works and works derived from Internet tools. All these have impact on the identification of the subject in E-commerce. Secondly, publishing and broadcasting activities are expanded. In the Web environment, the publishing activities in their traditional sense do not exist. The agents are the suppliers of information and Internet service, and the sellers who are engaged in E-commerce. As the publishing place is not fixed, it’s difficult to find out the area of publication. Therefore it is highly necessary to study the rights and obligations of the suppliers of Internet broadcast service and the content, and the sellers in E-commerce. Thirdly, it is very hard to give a definition on what is the proper use of the art works by individuals. This is especially so under the Internet environment as it is very difficult to draw a demarcation line between profit-making and non-profit-making when the obtaining of economic benefits is separated from the form of the art works. Finally, the protect of the rights of users has been made inefficient. There exists in the Web an environment in which users obtain the art works passively, therefore their rights are very often infringed. Based on the above, in order to protect the interests of the copyright holders and to stimulate the development of E-commerce, the principles of protection and the focal points of the Copyright Law in China should be adjusted, and most adjustment should be made with the development in the computer networking technologies and their applications.

3) The conflict between the registration of site names and trademark rights.

According to the Trademark of Law of China, only the “text, picture or their combinations” of trademark signs are under the protection of the law, which means it does not protect the animated signed on the Internet. People have realized in business activities in the Internet environment that identification by ‘visual sensations’ is more to the need of the development of business activities than identification by “text and picture”. At present the biggest problem in China is the conflict between “site name registration” and trademark rights in the Internet environment. Although the State Council promulgates the Provisional Regulations on Website Name Registration in China in May 1997, it only states that “no one should apply for a website name with a registered trademark that belong to them”. It does not inhibit people from using other people’s trademark or tradename in applying for a website name. “Website name” has actually been protected as a part of goodwill or tradename and has been traded as intangible asset. In some international conventions, it is only stipulated that only the owners of “internationally famous trademarks” have the right to prevent other people from using their trademarks in registering a website name. The focus of the conflict between the not so famous trademarks and tradenames and the website name registration is in the process of obtaining rights. This is because trademark rights are mostly approved by an official authority, while tradename rights is obtained in the actual use of them, and the website names are usually registered by non-governmental organizations. As there is no solution for this technical problem, the conflict between “website name” and trademark rights and tradename rights can only be left unsolved at the present.

2. The Protection of privacy in E-commerce.
E-commerce also involves the problem of how to protect privacy on the Internet. With the development of E-commerce, the protection of privacy on the Internet has attracted more and more attention. A survey conducted by The U.S. Social and Legal Research Center shows that 88% of the U.S. citizens are concerned with the free use of their private information. Among the frequent users of the Internet, 90% are worried that their privacy rights are violated. The Japanese people, like the Americans, are also very much concerned with the protection of their privacy. Among the 1000 people who were interviewed, 90% said that they had heard or read about incidents of privacy violation in the past one year. 76.6% of them showed that they were very much concerned with the problem. This survey reveal much about people’s perception of privacy. People in the legal circle in Japan said that the Japanese Parliament will make efforts to pass an act on the protection of privacy in the first half of 2001. The U.S. is also going to draft their regulations on protection of electronic privacy in the same period.

The protection of privacy on the Internet should include the following:

1) Individual log-in identity, and health information. When applying for an E-mail account, individual homepage, free E-mail address or other services (shopping, medical service and dating service), Internet users are often required to provide to the ISPs information such as their user names, age, home address, ID number, their work and health. ISPs, after obtain those private information about their users, have the obligation of keep the information confidential and should not leak it unauthorized.

2) Information on the users’ credit and financial status, including the number and pin number of their credit cards, electronic consumption cards, Internet cards, Internet accounts, and transaction accounts. The credit card number and account number used by Internet users when they get online to do shopping, consuming and transaction are the users’ privacy and should not be leaked other people.

3) E-mail address. E-mail address is also user’s privacy. Most of the Internet users do not wish to publicize their E-mail addresses. Publicizing and providing the E-mail addresses they know and collect addresses of their users which result in the users receiving a large amount of advertisements, junk mails and the users’ account being attacked or the users being disturbed are also infringement on the users’ privacy.

4) Records of users’ activities on the Internet. The history of users’ activities on the Internet, such as their IP addressed, sites browsed, and things they do online, are all a part of the users’ privacy. Showing, tracking and publicizing the above mentioned information to other people are also violation of privacy. For instance, telling a user’s IP address to a hacker causing the user’s address being attacked; or making public the information of a user online activities, such as browsing pornographic websites and visiting Internet during office hours causing damages to the user’s reputation. These are all infringement of online privacy.

It is a topic of heated discussion how to best solve the problem of protecting privacy on the Internet. One of the important means to solve the problem is through legal measures, as by making and enforcing laws people will be taught to abide by law and thus will reduce the incidents of violation of private rights. In addition, the government should also take active part in this and support the non-government organizations to set up effective and user-friendly self-disciplined privacy management system. The system should include the mechanism of recognizing individual privacy, selective use of the Internet, fair and just ways of obtaining and using information and effective resolution of disputes. The government and the industry organizations and other sides concerned should work together to find appropriate resolution for the problems
that can not be solved by the industry independently by standardizing its practice and developing new technology.

IV. Security of E-commerce

The healthy development of E-commerce is dependent on the security of E-commerce. After many years of study and research, we believe that the security problem of E-commerce has two sides: the technological side and the system side. The two sides are independent from each other, and yet can be combined to work together. Neither of them, when working alone, can solve the problem of E-commerce security. With the further development of E-commerce and the deepening the research work on the security problem, new progress will be made on both the technological side and the system side.

1. The technological problem of E-commerce security.

At present, the security mechanism of E-commerce has stood the technological tests of effectiveness and reliability and is gradually being developed into the international standard of the industry.

1) The firewall

The firewall is a security system between the intranet and internet. It can also be seen as a visit restriction mechanism. It was designed according to two principles: first, everything that is not allowed should be prohibited. Based on this principle, a firewall should block all the flow of information and then open the desired service one by one. The firewall can create a perfectly safe environment for the users, but their convenience and the service they can received are very much limited. The second one is, everything that is not prohibited should be allowed. According to this principle, the firewall allows all the flow of information, and then block the harmful service one by one. This can create a more flexible environment and allows more service to the users. However, as the Internet services provided are increasing rapidly, the web workers will be overwhelmed by the large amount of services and will not be able to provide a good protection system to the users. Major types of firewalls are: screening, service agent, and the complex type. At present there are limitations to the firewall technology, i.e. it can not block attacks that do not go through the firewall, attacks caused by user’s operation mistakes or leak of security codes. It can neither block the transmission of virus-infected software and documents.

2) Codification

Codification is to use message alteration principle to change information that can be understood into information that can not be understood. The alteration principle is called codified calculation. The variable in the calculation is called the code. The reliability of the codification technology lies in the mathematical difficulty in decoding it, instead of the secrecy of the codification calculation. It also has something to do with the length of the code.

The codification calculation can be divided into two types: symmetrical and unsymmetrical, according to whether the codifying code and the decoding code used in the codification calculation are the same, and whether the decoding code can be worked out with the codifying code.

The cost of symmetrical codification calculation is lower and can be applied
quickly. But it has problems of the security of the code in doing online trading. Besides, if one party of the trading has as many as 100 trading relations, he has to own and maintain 100 codes. Another problem is that it cannot recognize the initiating party or the terminating party of the trading, and cannot guarantee the complete transmission of information.

In the system with an unsymmetrical codification calculation, every user has two codes: one code is open to the public, the other is a secret one. It has advantages in distributing codes, digital signature and authentication. Its disadvantages are: it needs a large amount of calculation and is slow in codifying.

The codifying system to E-commerce tend to use the combination of the above two methods. The symmetrical codification calculation is used in codifying messages while the unsymmetrical codification calculation is used in distributing codes, digital signature and identity authentication. The process of a codified transmission of a document in this method is consisted of: a. The sender of the document produces a symmetrical code which is codified with the open code of the receiver and transmits it to the receiver on the Internet; b. the sender codify the document with symmetrical codification and transmits it to the receiver; c. the receiver decode the symmetrical code with his own private code to get the sender’s symmetrical code; d. the receiver decode the codified document with the symmetrical code to the original version of the document.

3) Digital signature

The way in which a digital signature works is: the sender produces a data (or a summary of the document) randomly from the document, then codifies the data with his own private code to form the sender’s digital signature. The digital signature will be sent to the receiver as an attachment together with the document. The receiver will first list the data (or the summary of the document) from the original document, then decode the attached signature with the public code of the sender. If the two data are the same, the receiver can recognize the validity of the digital signature. Thus in this way the receiver can determine the completeness of the original document and can completely stop the denial of responsibility.

4) Identity authentication

The digital certificate which is based on the public coding system has been widely adopted internationally as the solution to this problem. The implementation of security measure in E-commerce are mainly based on the digital certificate.

(1) Digital certificate

As E-commerce needs codifying, code is a necessary part of it. The more trading subjects, the more codes are needed, and accordingly the more complicated the management of codes. The management of codes can be achieved by using digital certificate. One digital certificate is produced for every open code. Private codes are given to the users in their complete form or users can produce their own private codes. A digital certificate should include the user’s open code, name, the digital signature of the issuing agency and other information about the user. Lost codes can be recovered by restoring coding or mandate of codes. The validity period of the codes can be set in the regulations, and expired certificate should be
reissued. Private codes should be terminated when lost or illegally used.

(2) Authentication Center

Authentication center has laid the foundation for the framework of the authority of the process of identity authentication. It provides security measures for the participants of trading and creates an environment of mutual trust for online trading by solving the problems of identity authentication, distributing open codes and safe information transmission on the Internet. It can be seen as the key to the security of E-commerce. Authentication center makes it impossible to counterfeit the digital certificate by giving a digital signature to each and every certificate that contains an open code. All the users can obtain the open code of the center to verify the digital signature on any of the digital certificate, and thus they can find out whether the certificate is signed by the authentication center.

5) The international standard on E-commerce security

Internationally the security mechanism of E-commerce is getting ready and has gradually formed some international standards. The two outstanding ones are the SSL and SET protocols.

The SSL protocol was produced by Netscape. Before exchanging data of application programs it examines the security of the system by exchanging the initiating information of SSL. However, as the users did not have any means to verify the sellers, it was gradually replaced by SET protocol.

The SET protocol provides rules of security measures for electronic trading with credit card. It is a technical standard jointly made by Visa International and Master Card and is made to guarantee safe payment through open Net. SET has included a verifying system on the seller’s identity, and has in fact become the industry standard. However, it is not perfect either, mainly because the protocol is too complicated and the cost is high, and can only be used when the users have installed “Electronic Wallet”.

2. The system problem of E-commerce security

It is an effective measure to guarantee E-commerce security by means of system. They fall into two categories: legal measures and non-legal measures.

A lot of things can be done in terms of non-legal measures. From the practice of E-commerce management in different countries we can see that the building of the authentication system is a problem of common concern. In China, authentication institutions are an important part in conducting E-commerce activities, and they are characterized as high input and high risk. The state information office has adopted a cautious attitude towards it. The departments concerned in the State Council and experts on E-commerce have begun to work on drafting a document on the examination and approval and management of state E-commerce authentication system and authentication institutions, with the purpose of standardizing the management of this work and reducing redundant work and waste. The existing authentication institutions will be improved and strengthened. They should obtain the support of insurance companies for their safe operation and management so that the consumers’ interests will be best protected. Between the existing authentication institutions, research work should be done on cross authentication.

In terms of legal measures, it involves:

1) Laws on authentication center. Authentication centers play an essential role in
E-commerce. It is responsible for the fair and just and safe operation of E-commerce. Therefore laws should be made on the procedure and qualifications of setting up an authentication center and its responsibilities and obligations. Also laws should be made on the supervision departments of the authentication center, and the supervision method and the punishment for breaking the rules.

2) Laws on protection of individual privacy and secrets. Under the guiding principle of collecting the minimum amount of individual information and protecting the individual privacy to the maximum, laws should be made to dispel people’s misgivings on leaking privacy and important private information so that more people would be attracted to do E-commerce.

3) Laws on electronic contracts. Laws should be made to verify the validity of electronic contracts, digital signature and E-commerce license. It should also include articles on counterfeiting, changing and canceling of E-commerce license and electronic payment data.

4) Laws on the protection of consumers’ rights and interests in E-commerce. In E-commerce consumers’ trust on the sellers depends on the authentication center and the bank, as the authentication center can verify the identity of the seller and banks have the information of the sellers’ credit. If a seller causes damages to the buyer by refusing to deliver the goods, or delaying the delivery or delivering fake products, the bank should compensate the consumer first and ask the seller to reimburse the payment. If a seller constantly breaks the rules, the bank can cancel the seller’s electronic bank account and inform the authentication center of this. The authentication center will put the seller on the ‘black list’, or cancel the seller’s digital certificate if the case is serious, so that the seller loses its right to do E-commerce.

5) Laws on the protection of intellectual property rights. In addition to the technological protective measures, a legal framework should be established to detect counterfeiting and cheating and provide legal support.

To sum up the above four parts: the advent of the Internet hastens parturition of E-commerce, which has created inspiring miracles in its development. However, an objective examination of E-commerce tells that there are underneath the superficial prosperity a lot of problems that need to be solved. E-commerce needs to be standardized and well managed. Together with the development of E-commerce, the development of E-commerce theory and practice should also be put forward in order to meet the needs of the new development. The management of E-commerce is both on the level of technology and system. Basically it is more a problem of system, because first of all there should be an appropriate system. Then other measures should be put into the framework of the system so that they can be combined and work together. In this way, following the management principle, starting from the laws and regulations of E-commerce and management mechanism, the problem of E-commerce will be solved. However, we should also know that E-commerce management is a complicated problem as it involves both the traditional economy and the new economy and the resolution of the conflict between E-commerce and the traditional commerce, and the creation of a new Internet commerce system. What’s more, the development of E-commerce is fast, therefore the management of E-commerce should be flexible. We sincerely hope that all the people who are interested in E-commerce management will take part in the discussion and contribute to the standardization of E-commerce management in China.

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