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석사학위 청구논문

중국 전자선하증권 법률의
개선에 관한 연구

**A study on the Improvements and
Development of Electronic Bill of Lading in
China**



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本 論文을 王梓亦(WANG ZIYI)의 法學碩士 學位論文으로 認准함

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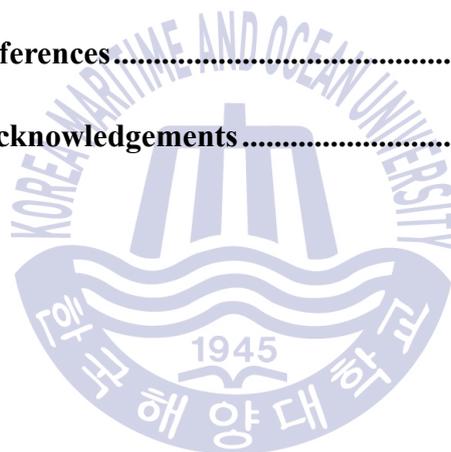
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Chapter I Introduction

1.1 Background and Purpose of Research

Nowadays, international trade and shipping business advance by leaps and bounds. With the development of computer technology and information and communication technology, the traditional bill of lading has become increasingly difficult to adapt to the demand of industry development. Therefore, electronic bill of lading produced and developed very rapidly in practice.

Now, more and more countries and international organizations have formulated relevant laws to standardize and support the development of electronic bill of lading. However, electronic bill of lading from the birth to now has only several decades history, and traditional bill of lading has applied for hundreds of years, so there are still many obstacles that the electronic bill of lading replaces the traditional bill of lading. Different countries have different legal systems, and they also have different rules for the electronic bill of lading, but the international community lacks the compulsory legal regulations which also brings difficulties to the popularization of electronic bill of lading internationally.¹

Though the comparison and analysis between electronic bill of lading and traditional bill of lading, this thesis will prove that the electronic bill of lading has also various legal functions of traditional bill of lading, including evidence of a contract, cargo receipt, document of title, etc.

Then, combined with the practical activity and legislative status of international community, the new problems of electronic bill of lading produced in circulation will be discussed, such as electronic signature, jurisdiction problem, safety problem, real right problem.

Besides, author thinks the development of electronic bill of lading is driven by the trend of development of international shipping business. Because the

¹ XIANG ZAISHENG,[2007]. *Study on Legal Problems of Electronic Bill of Lading*. [PREFACE]. China FANGZHENG publishing house.

author is a Chinese overseas student, the legislation² on and practice status of electronic bill of lading in China will be emphasized. Beneficial experience will be shared, and problems will be faced squarely.

The full thesis encourages everyone to try to change the inherent concept, and the law is the reflection of the real society. Before the usual practice and habits exist a long time, the birth of laws becomes possible. Currently, we are in a rapidly changing network times, and the electronic technology and shipping technology will alter from day to day. Besides, the laws also should respond. Electronic bill of lading doesn't run in opposite directions with traditional rules, and current laws can be amplified for interpretation or be made a few alterations, so that the correlation validity of electronic bill of lading can also be admitted and accepted, which is very significant for the development of the modern shipping business.

1.2 Method and Significance of Research

China is South Korea's biggest trade partner, and the trade value between these two countries has increased 33 times for the 25 years. From the founding of Free Trade Area of China and South Korea, to the establishing of Maritime Silk Road among the Belt and Road Initiatives, and even to the vigorous development of cross-border e-commerce, all these have brought up new opportunities to the business of shipping and more challenges as well.

The Bill of Lading is an essential part of maritime trade. Compared with the traditional bill of lading, the electronic bill of lading has its advantages in efficiency, safety and cost-saving. Therefore, the study in electronic bill of lading's legal issues under China's actual circumstances is, in fact, to study the development trends of future maritime trade, which will bear a certain academic Value.

I was studying in South Korea, an early beginner and more developed country in the business of shipping. During my preparation of this thesis, through the comparison of the current bill of lading and EDI articles of law between China and South Korea, and among the legislations of bill of lading in other

international organizations and countries, I try to find out the shortcomings of China's legislation in electronic bill of lading and offer suggestions to improve the legislation. I will locate the legislation problems by analyzing two specific cases. This will generate a positive practical significance to the electronic bill of lading's development in China and the comprehensive elevation of China's shipping industry.



Chapter II Theoretical Investigation of Electronic

Bill of Lading

2.1 Traditional Bill of Lading and Electronic Bill of Lading

2.1.1 Meaning of traditional bill of lading

Bill of lading: means a document which evidences a contract of carriage by sea and the taking over or loading of the goods by the carrier, and by which the carrier undertakes to deliver the goods against surrender of the document³

Functions of the traditional bill of lading,

First, Cargo receipt.

A bill of lading has the function of cargo receipt for the shipper who delivers the goods to the carrier. Carrier not only has the duty to issue the bill of lading for the shipped goods, but also has the duty to issue the "received for shipment bill of lading" when the goods haven't been shipped but the goods is in the charge of the carrier according to the requirement of shipper. Therefore, as soon as a bill of lading is issued by the carrier, it is indicated that the carrier has loaded the goods onto the ship or has confirmed to take over the goods. As a cargo receipt, a bill of lading proves not only the kind, quantity, mark and apparent condition of the goods but also the time when goods are received, that is, the time when goods are shipped. When a bill of lading is issues, goods or goods condition should be proved in which they were received and it is not necessary to require that the good is shipped. However, shipment of the goods represents that the seller has delivered the goods to the buyer, so the time of shipment means the seller's delivery time. And the delivery of goods on time is essential to the contract performance, so, it is very important to use the bill of lading certifying the time of shipment of goods.

³ Bill of lading, means a document which evidences a contract of carriage by sea and the taking over or loading of the goods by the carrier, and by which the carrier undertakes to deliver the goods against surrender of the document. A provision in the document that the goods are to be delivered to the order of a named person, or to order, or to bearer, constitutes such an undertaking, *Hamburg rules*

Second, Document of title.

Bill of lading has the function of document of title for the Holder who gets the bill of lading legally. The legal Holder of lading is entitled to taking delivery of the goods by exchanging the document of title with bill of lading at the port of destination, as well as the carrier delivers goods by bill of lading with goodwill and the carrier has no blame even though the Holder is not the real owner of cargo. Besides, unless the bill of lading points out that it can be transferred to the third party without the approval of the carrier, the transfer of bill of lading means the transfer of real right, and uninterrupted series of endorsement may be continuously transferred.

The legal transferee of bill of lading or the Holder of bill of lading is the legal Holder of goods recorded in the bill of lading. The real right represented by bill of lading can transferred with the transfer of the bill of lading, and the rights and duties stipulated in bill of lading will be transferred with the transfer of the bill of lading. Even if the goods are damaged or lost during the transportation process, only the buyer makes a claim for compensation from the carrier because the risk of goods is transferred from seller to buyer with the transfer of bill of lading.

Then, Documentary evidence of establishment of contract.

The articles printed in the bill of lading stipulated the rights and duties between carrier and shipper, and the bill of lading is the evidence that the law admits to deal with the transportation of goods, so it is often thought that the bill of lading itself is the carriage contract. However, bill of lading doesn't have the general conditions that the economic contract should have: it is not a product of agreement between two parties, and the articles of bill of lading bound by both parties are drafted unilaterally by carrier; it is carried out before and issued later, and before the bill of lading is issued, the carrier has begun to accept all work relating to the transportation of goods: the shipper's consignment and the shipment of the goods.

Therefore, the bill of lading is the certificate of carriage contract rather than the carriage contract. If carrier and shipper have had carriage contract before the bill of lading is issued, both parties should proceed as the original contract; but if there are not any agreements before and shipper doesn't have any objection when shipper accepts the bill of lading, the bill of lading can be regarded as the

contract itself. The characteristics of marine transport decide that the shipper can't sign the bill of lading, but the bill of lading is different from the general contract, so whether the Holder of bill of lading sign the bill of lading, the articles of bill of lading has constraint force for them.

2.1.2 Electronic data interchange system (EDI)

With the fast development of computer science and network utilization in 1990s, international trade field began to largely use the computer science in the trade business. Those utilization of computer science used in the electronic data interchange items are called Electronic Data Interchange (EDI)⁴

And the Electronic Data Interchange applied in the business applications is generally called Electronic Commerce (E-Com).

According to EDI definition described by International Organization for Standardization (ISO), EDI is a transmission method from computer to computer that forms the structured transaction processing or information data format after dealing with the business or administrative matters by an accepted standard. From this, we can conclude the characteristics and advantages of paperless trade through EDI

(1) EDI is aimed at the business information with standard fixed format, which can read, input, and transfer the information from standard database in any stages when the constitutive property of transport objects makes it possible to use EDI, reduce the modification, delivery, inspection and other segments when the written document flows, and improve the work efficiency and competitiveness as well as the accuracy of information transfer is confirmed.

(2) The carrier of information transmission is the computer, and the information is transferred among the relevant parties via the communication network, but in the period of traditional written documents, a lot of documents need to be printed and prepared when a batch of goods are imported or exported, and originals and copies together will be more and miscellaneous. Especially, if

⁴ YANG JIANZHENG, [2014]. *Foundation and application of e-commerce*. Chapter I, Publishing house of XIDIAN University.

it is less than container load cargo in the method of container transport, vouching clerk will complain incessantly.

Which will spend a large amount of manpower, material resources and time, but this condition will change a lot in the EDI method.

(3) The final user of EDI information is the computer application system of all the parties, which enables the transmission to have strong reliability; while the transmission speed is strengthened, the good and close relationship between the mercantile partnerships is built and consolidated.

Similarly, the development of EDI or E-Com also makes the international trade model enter the so-called paperless e-commerce era from the traditional written trading Era. However, when EDI or E-com is utilized in international trade, the matters of laws that involved in these applications have become quite complicated under the condition that the laws and regulations of various countries have not yet been fully integrated because the trade and maritime transportation of more than two countries are involved.

2.1.3 Meaning and Background of Birth of the Electronic Bill of Lading

So-called electronic bill of lading refers to the electronic data of carriage of goods by sea that follows the operating rules of traditional bill of lading, in accordance with the combination of relevant international rules that "the United Nations Rules for Electronic Data Interchange for Administration, Commerce and Transport" and "Uniform Rules of Remote Conduct for the Interchange of Trade Data", with the electronic computer communication way to deliver. Electronic bill of lading is relative to the traditional marine bill of lading, which is the result of the high development of electronic computer and electronic communication technology and is a trend in development in the circulation of marine documents.

The definition of electronic bill of lading by Bill of Lading Electronic Registry Organization (Bolero). Bolero thinks the electronic bill of lading consists of two parts: one is Bolero text of bill of lading: the main articles of traditional bill of lading and an endorsement about the surface condition of the goods by the carrier, as well as technology about the digital signature and the relevant information needed in the file transfer; other is all the transaction information about this bill of lading.

We know that the circulation of bill of lading is mainly carried by air mail under the way of circulation of traditional shipping document, so the following two situations will be easily produced:

One situation is that the bill of lading is later than the arrival of the ship at the port of destination so that it is difficult for cargo interests to take delivery of goods. During the carriage of goods by sea, because of the exchange settlement, sometimes, the consignee cannot receive the bill of lading at the port of discharge in time after the goods is shipped. Especially when the distance between port of loading and discharge is relatively close, sometimes, the ship has arrived at the port of discharge, but the bill of lading is still in the process of mailing, so that the consignee has no corresponding document to take delivery of goods. Although the consignee can take delivery of goods via the copy of bill of lading and letter of indemnity, the consignee has difficulty to obtain this letter of indemnity, because the carrier will decide to deliver the goods to him only when he have certain financial capacity as a guarantee, which will bring great inconvenience for the consignee.

Other situation is that fraud always happens. Traditional marine bills of lading are in written form, and the transfer model is very backward, so that criminals will have more opportunities to cheat, such as forging and stealing the bill of lading.

In order to overcome the defect of traditional bill of lading, the workers and researchers of international trade and international shipping industry, the governments, and relevant international organizations have made various trials, but it is ineffective with many efforts. Until the most advanced communication technology and EDI system appear, this condition gets the substantial change.

2.1.4 Operating model of Electronic Bill of Lading

Operating model of electronic bill of lading as follows.

The carrier send the electronic message and password of receiving after he receives the goods, and the carrier will enjoy the right to dominate the goods after the shipper confirms.

The shipper sends the electronic message to the carrier after exchange settlement according to the letter of credit, then the bank enjoy the right to dominate the goods.

The carrier cancels the shipper's password and provides new password for the bank.

The consignee will gain the goods dominance right after he pays to the bank; and the carrier send electronic message to the consignee for confirming that the consignee has controlled the goods and informing the consignee about the description of goods and ship situation.

According to the electronic message of arrival notice, the consignee obtains the delivery order and takes delivery of goods by the identification paper at the agent of the carrier's port of destination.

The password is unique to each successive Holder and is not transferable by the Holder, and the carrier and Holders should guarantee the security of the passwords. The passwords must be individual, and must distinguish with any passwords or ID code used in identification method of the carriage contract and access to computer networks.

In order to facilitate to discuss the legal issues of electronic bill of lading, several models of operation of electronic bill of lading will be introduced.

(1)CMI model

CMI rule is the folk rule, which is voluntarily adopted by the parties. The core is that the carrier delivers the electronic documents and does the unofficial registration for the transfer of bill of lading, which will provide a private registry system controlled by the carrier for the electronic bill of lading. The operation process of CMI is as follows:

The carrier, upon receiving the goods from the shipper, shall give electronic message with passwords or Private keys of the receipt of the goods to the shipper at the electronic address specified by the shipper; the shipper must confirm this receipt electronic message to the carrier, upon which confirmation the shipper shall be the Holder of this electronic bill of lading. This electronic bill of lading

shall include the following content: the name of shipper, the description of the goods, the date and place of the receipt of the goods of carrier, a reference to the carrier and other content.⁵

The Holder of this password or "Private keys" shares equal right with the Holder of bill of lading. The Holder of this password or "Private keys" can ask the carrier for delivery of the goods, can nominate the consignee or substitute a nominated consignee for any other party including itself, and can also instruct the carrier on any other subject concerning the goods, in accordance with the terms and conditions of the Contract of Carriage, as if he were the Holder of a paper bill of lading.⁶

The Holder of bill of lading should obey the following procedures when he transfers the right of control and transfer to another party:

The current Holder to notify the carrier about its intention to transfer its right of control and transfer to a proposed new Holder and the carrier confirms such electronic message, whereupon the carrier shall transmit the relevant information except for the passwords to the proposed new Holder. Where after the proposed new Holder shall notify the carrier of its acceptance of the right of control and transfer. Whereupon the carrier shall cancel the current Private Key and issue a new Private Key to the new Holder.⁷

(2) Bolero model

Compared with the CMI rules, obviously, the operation way of Bolero is more detailed and complex.

Bolero is initiated by the European Communities, and is built by TT CLUB (a Transport Mutual Insurance Institution whose headquarter is in London) and SWIFT, as a joint venture in April 1998. The user of BORELO includes the importers and exporters, banks, insurance companies, goods agents, carriers, harbor authorities, customs, inspection institutions, etc. in the international trade. Bolero system now consists of two single companies: Bolero Association

⁵ XU JIN, [2000]. *Electronic bill of lading in CMI mode and its legal problems*. pp.35

⁷ LU ZHOU, [2001]. *Electronic bill of lading security law research*. Master's thesis. pp.15

Limited and Bolero International Limited.

The structure of Bolero Association Limited is similar to Protection and Indemnity Club, owned by all the users, all users who want to join in the Bolero system firstly have to become the members of Bolero Association Limited. This company is responsible for guaranteeing that Bolero system can provide services to meet users' requirements and collecting problems of Bolero system users about the use of international E-commerce so that perfect legal framework can be built and the electronization of traditional trade documents can be implemented under the precondition that the trade hazard will not be increased. Bolero International Limited, the core of Bolero system, which is funded and managed by TT Club and SWIFT, is responsible for the establishment and operation management of Bolero system and provided the service related to electronic bill of lading. At the present stage, it also acts as a Certificate Authority responsible for the qualification examination when user join in the system.⁸

Bolero trading system includes:

Central messaging system

Responsible for the transfer of electronic message among users or users and Bolero system, and recording and tracking the electronic message delivered by this system. For the content of electronic message, the system will save reasonable time for enquiries; the Title Registry system is a data base used to record the content of electronic bill of lading, establishment and modification of corresponding rights and obligations.

In one sense, this system executes the function of paper electronic bill of lading. Creation, modification, and transfer of the electronic bill of lading in the Bolero must be completed by authorized users who instruct the title registry towards the Title Registry system. The User Database is used to store the information of Bolero users, whose content is used to verify users' identity, confirm the user permission, and confirm the sender of electronic messages. The User Support Resources provide a series of online information, including the basic information, announcements, update status and other data of users, and offer help via telephone or E-mails.

⁸ CHEN YING, [2000]. *A preliminary study on paperless international settlement*. Master's thesis.. pp.7

These 4 parts are provided and maintained by Bolero International Limited.

Besides, there are also User Systems, that is, the user's computer system.

Bolero is operated mainly by the transfer of electronic message. When users build, transfer, pledge, and return the electronic bill of lading, they need to instruct the Title Registry system with electronic message way, and complete various operations by the means of creating and changing records.

At the same time, core messaging system will monitor every electronic message and record it (the abstract of electronic message can be kept for no less than 20 years).

All the bill of lading operations in the Bolero must be completed by authorized users who instruct the title registry towards the Title Registry system.

⁹

Details as follows:

Create

When the carrier issues an electronic bill of lading in accordance of consigner's requirements, he should issue an instruction towards the Title Registry system by the core messaging platform to create a bill of lading, input consigner, consignee (or notify party), goods description, and other information specified in the general bill of lading, and then appoint a Holder of bill of lading.

Transfer

The transfer of bill of lading should be carries out by the means that another Holder of bill of lading will be nominated. which will be completed by the current Holder of bill of lading who gives the instruction to the Title Registry system via the carrier.

Modify

The bill of lading must be modified by the carrier. According to the requirements of consigner who is the Holder of bill of lading, carrier modify the record in the Title Registry system.

⁹ LI YUNING, [2001]. Study on legal issues of electronic bill of lading. Law press, China. Master's thesis.

Take delivery of goods

When the consignee (or notify party) becomes the Holder of bill of lading, he can hand the bill of lading to the carrier or other people nominated by the carrier.¹⁰

Bolero model has greater safety and operability, so it has been widely applied around the world, and many big shipping companies, banks, traders, and insurance companies become its members. We can say that Bolero model is in the leading position now. It is seen that Bolero International Limited is in the core position of Bolero model. So, how the legal status this company (the company or the organization like Bolero International Limited when the Bolero model becomes the main model of operation of electronic bill of lading) is, how the rights and obligations are distributed rationally, and what imputation principle should be adopted will be the legal matters to be solved.

Bolero system built a transnational legal system which reconciles the differences in electronic bill of lading among states and takes into account the laws of various countries on the requirements of E-commerce and maritime transport.¹¹

However, laws in most countries stipulate that the agreement content of the contract cannot conflict with the mandatory law, what if the Bolero rules based on the contract conflicts with a country's mandatory law? Will it conflict with the new laws enacted in the future? These are its hidden trouble.

Besides, Bolero adopts the vague definition for the explanation of many terms in order to avoid the conflict with domestic laws of countries. Even it deliberately evades this. In this way, legal divergences and conflicts in different countries are avoided, but unclear concepts can also cause disputes with the increasing application of electronic bill of lading in international trade, so Bolero legal system still shall be further improved.

¹¹ MAO JIANXUN, [2000], *Bolero electronic bill of lading system* (part 1), containerization, 5.,pp. 21-23

(3) SeaDocs project

The earliest and formal attempt of electronic bill of lading is the SeaDocs project in 1986. SeaDocs project (Seaborne Trade + Documentation System) is developed by International Association of Independent Tanker Owners (INTERTANKO) and Chase Manhattan bank in America, whose purpose is that the electronic bill of lading with quick circulation is applied in the petroleum transportation.

In the SeaDocs system, the carrier still issues the paper bill of lading which will be not circulated but will be kept by SeaDocs company, and this paper bill of lading will be converted to an electronic bill of lading for circulation so as to speed up the rate flow of bills of lading. SeaDocs company is equal to the keeper of bill of lading and registrant during the circulation of bill of lading, who has right to endorse on a bill of lading and ensure the transfer of right of bill of lading. The Holder of electronic bill of lading can achieve the transfer of right of bill of lading by the transfer of electronic passwords. When the bill of lading is transferred, the transferor informs the register center by the electronic system, the register center saves this electronic information and makes a footnote in the paper bill of lading, at the same time, send new electronic password and corresponding information to the transferee, finally, SeaDocs company will deliver the original paper bill of lading to the final transferee.

Unfortunately, the SeaDocs project was forced to annul after less than a year of operation because the high insurance costs, infringement on the trade secrets between the two parties, and other reasons. However, it is the first attempt in promoting electronic bill of lading, whose significance is that it firstly proposed the transfer way of bill of lading engaged by a neutral third party who acts as an identity of registrant and assurer, and this model provide a breakthrough for the electronic bill of lading.

(4)OCEAN

OCEAN was designed by nine international large shipping companies in 1995. These nine international large shipping companies had signed the Information System Agreement (ISA) to promote the E-commerce in 1991.

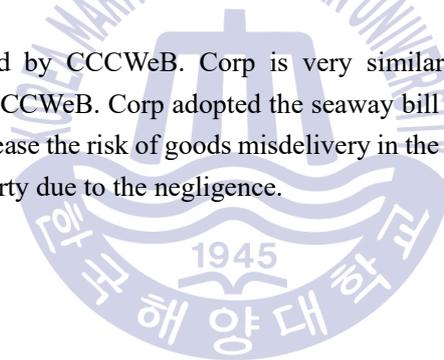
This agreement adopted the UN EDIFACT standard in the beginning, but the ISA can not gain the authentication of this standard, in addition, shippers and consignees had no interests on this standard, so that ISA agreement had to apply the USA ASCX12 standard tentatively. Furthermore, because the ASCx12 standard is only used in the North America and is incompatible with EDIFACT standard, the application of OCEAN suffered many restrictions. Therefore, ISA adopted UN EDIFACT standard again in 1997 to have the more comprehensive application. Besides, National Customs Brokers & Forwarders Association of America also accepted the ISA standard in 1997.

(5)CCCWeB.Corp

The initial success of Bolero poured the electronic bill of lading into new vitality, and more and more electronic data interchange platform appeared internationally. Among them, CCCWeB. Corp is worth to introduce.

It is a Canada company, built in 1996, which has considerable development potential under the support of some large shipping companies and assurers of P & I.

The way used by CCCWeB. Corp is very similar to the Bolero. The difference is that CCCWeB. Corp adopted the seaway bill with no endorsement for transfer to decrease the risk of goods misdelivery in the electronic documents with transfer property due to the negligence.



2.2 Relevant Laws and Regulations of Electronic Bill of Lading

2.2.1 Corresponding legislation within the countries

2.2.1.1 Legislative status in the United States

In 1936, America had enacted the <Carriage of Goods by Sea Act>. (COGSA)¹²

This Act stipulates that the carriage contract including bill of lading can use the electronic form, but electronic bill of lading should use in accordance of procedures stipulated by the parties.

General stipulations: it mainly stipulates the concepts of carrier, shipper, carriage contract, goods, etc. Carriage contract is defined as a freight transport contract implemented by one or more than one mode of transport of maritime traffic or partly maritime traffic, including bill of lading (or similar documents), no matter whether the bill of lading is negotiability or non-negotiability and no matter whether it is print form or electronic form.

Carriage contract also include the bill of lading issued under the charter party, no matter whether the bill of lading is negotiability or non-negotiability and no matter whether it is print form or electronic form, but only after the document adjusts the relationship between carrier and the Holder of bill of lading.

Obviously, according to this definition, freight transport contract also includes the contract proved by electronic bill of lading, and this article also stipulates that the electronic bill of lading can be used in accordance with the procedures stipulated by the parties of the bill of lading.

Special provision: it mainly stipulates the functional-equivalent standard of electronic communication.

According to this special provision, if the written form is required for the

¹² America's new COGSA compares with the past. [1999]. Navigation in TIANJIN.pp.14

notice, announcement, or other communication in the *Carriage of Goods by Sea Act*, this notice, announcement, or other communication can be conveyed with the written form or electronic medium, there into, the electronic medium includes electronic data interchange or other computerized transmission.

The <Utah Digital Signature Act of America> in 1995 firstly approved the digital signature in the form of legislation in the world. This Act proposed a perfect digital signature method, put forward the concept of "public key" which helps to achieve the electronic signature, and developed a scheme that confers the right of proof. This is very significant for the operation of electronic bill of lading.

American Law Institute proposed the <America Uniform Commercial Code> concerning the draft of amendment of EDI in 1998.

This draft stipulated the electronic contract problem in detail. The content includes:

The legal recognition for the electronic records and signatures.

The identification of electronic records and the adscription or sender of message.

The effective time of the electronic contract.

The validity and confirmation of message.

Based on above act, the National Conference of Commissioners on Uniform State Laws enacted two legal documents in July 1999: Uniform Computer Information Transaction Act and Uniform Electronic Transaction Act, and advised the branches of legislature of states to adopt them.

The purpose is to build a unified e-commerce standard system in all the states of America to ensure the development of e-commerce in the operating regulations.

The America Uniform Commercial Code stipulated in 2001 that "signature and seal" includes any marked or adopted symbols in order to disclose the intention adopting or accepting a written material, "written" includes any visible marks printed or made purposely. "Write" has same meaning. This indicates that

the meaning of "written" is very wide in America. This Act established a system that paper document of title and electronic document of title exist simultaneously.¹³

2.2.1.2 Legislative status in Singapore

Singapore enacted a comprehensive and systematic <electronic trading law> in 1998. This act is enacted based on the model of UNCITRAL Model Law on Electronic Commerce, Utah and Illinois Digital Signature Act of America.

This Act gives the definition of electronic signature and safe electronic signature, admits the effect of electronic signatures, digital signatures, and electronic records in the laws, and also enacts the certification body and its limited duty.

2.2.1.3 Legislative status in the United Kingdom

UK modified the < *Bill of Lading Act* > in 1855, and enacted the < *Carriage of Goods by Sea Act* > in 1924.

Although the purpose of this Act is to solve the relevant problems in the lawsuit, this Act has an open clause to extend the scope of the Act to the case where the EDI system is used, which provide us the legislative provisions to which may be referred.

2.2.1.4 Legislative status in Australia

Australia is the earliest country in the world which admits the electronic bill of lading clearly via legislation. Its maritime law has very clear provision whether the meaning of "written" and "document" includes the electronic form. Article 6 of *Sea-Carriage Documents Act 1996* stipulates that:

a) This Act applies, with necessary changes, to a sea-carriage document in the form of a data message in the same way as it applies to a written sea-carriage document.

¹³ HAN LIXIN, [2003]. Compilation of maritime law in various countries. Press of Dalian maritime university, pp. 312.

b) This Act applies, with necessary changes, to the communication of a sea-carriage document by means of a data message in the same way as it applies to the communication of a sea-carriage document by other means.

Australia *Carriage of Goods by Sea Regulations 1998* broaden the range of marine documents, give the concept of "Data message". "Data message" means information generated, stored or communicated by electronic, optical or analogous means (including electronic data interchange, electronic mail, telegram, telex or telecopy) even if the information is never reproduced in printed form."

In addition to federal legislation, *Sea-Carriage Documents Act 1998* has been enacted in the Northern Australia and South Australia at present. In this Act, "Electronic and computerized sea-carriage documents" is absorbed in it without exception.

We can say that the maritime law of Australia is of great significance to many countries, which represents the direction of the legislation of maritime law.

2.2.1.5 Legislative status in South Africa

South Africa follows Britain in the maritime legislation. Before the *Sea Transport Documents Act, 2000* was promulgated, the legislation about the bill of lading of South Africa is the transplant of the UK *Bills of Lading Act 1855*. This Act is inappropriate in either UK or South Africa. In the UK, this act has been replaced by the *Carriage of Goods by Sea Act 1992*, and *Sea Transport Documents Act, 2000* is the newest update and reform of this act in South Africa.

Besides, South Africa enacted *Electronic Communications and Transactions Act, 2002* in July 31, 2002. Article 19 (2) of this act stipulates that an expression in a law whether used as a noun or verb, including the terms "document", "record", "file", "submit", "lodge", "deliver", "issue", "publish", "write in" "print" or words or expressions of similar effect, must be interpreted so as to include or permit such form, format or action in relation to a data message unless otherwise provided for in this Act. According to this article, the electronic bill of lading can also be "signed and issued".

The promulgation and implementation of these two Acts produced significant effect on the application of shipping business of South Africa especially the electronic bill of lading.¹⁴

2.2.1.6 The current situation of legislation in Japan

In 1996, Japan established the "Japan Association for the Promotion of Electronic Commerce".

In November 1997, MITI issued a regulatory document entitled "improving the environment of electronic commerce".

In March 1998, The Association for the Promotion of Electronic Commerce of Japan has developed "Smart Card Application guidelines (contact / Non-contact)", "Certification Authority / CA guidelines", "Cross-Authentication guidelines (initial version)", "Private sector Electronic Merchants" on e-commerce. Guidelines for the protection of personal information in business activities, guidelines for transactions between virtual companies and consumers, guidelines for electronic notarization systems, etc., The Security Standards for Smart Card Electronic Money Systems were developed in April 1998 .

In November 1999, the Ministry of Postal Service, the Ministry of Trade and the Ministry of Justice jointly drafted and published a policy document entitled "legal provisions relating to electronic signatures- promoting electronic commerce and laying the foundation for web-based social and economic activities".

In December 1999, Japanese industry, academia and relevant government departments formed the next Generation Internet Policy Research Group, which is headed by the Japan Telecommunications Agency. In June 2000, the Group presented a policy document on the "starting point for digitized Japan, Program of Action", including policies related to network infrastructure, policies related to technology platforms and policies related to e-commerce. In the part of E-commerce policy, some legislative proposals are put forward, such as the legal

¹⁴ XIANG ZAISHENG, [2006]. Legal issues of electronic bill of lading. WUHAN University. Doctoral thesis.

status and effectiveness of electronic signature and its authentication system, the legal responsibility of network service providers and the legal problems of transnational electronic commerce and etc.

On 24 May 2000, Japan adopted the Electronic signature Authentication Law (47 articles in total, published on 31 May). On April 1, 2001, Japan began to implement the Law on Electronic signature and Authentication (Electronic signature Authentication Law).

In March 2001, the Ministry of International Trade and Industry of Japan put forward the "Civil Law Special case on Electronic Consumer contract and notice of Electronic commitment", aiming at the disputes in B2C caused by the misoperation of electronic consumer contract. According to the relevant provisions of the Japanese civil law, consumers are often considered to have gross negligence and their legitimate rights and interests have been damaged. The article 526, item 1 and article 527 of the Japanese civil law are proposed to make special provisions in order to meet the needs of the development of electronic commerce.

2.2.2 International legislations

As the above, many countries enacted domestic laws of electronic bill of lading, but the basis for the survival of the electronic bill of lading is the worldwide computer networks and international uniform EDI standard, and is the unified recognition for it in the domestic laws of countries. Therefore, with the extensive application of EDI in international shipping and trade field, some international organizations have developed some model rules to regulate electronic data interchange. As Mr. Yang Liangyi said, "it shouldn't be a problem in the technology. The difficulty is how to establish a set of feasible, perfect and widely acceptable international game rule and way to replace the about two hundred of paper bill of lading."¹⁵ in the use of electronic bill of lading.

¹⁵ YANG LIANGYI, [2001]. Bill of lading and its shipping documents. Press of China University of Political Science and Law , pp. 151-154

2.2.2.1 *CMI Rules on Electronic Bills of Lading* enacted by the Comité

Maritime International

In June 1990, *CMI Rules on Electronic Bills of Lading* enacted by the Comité Maritime International was passed in the 34th Conference of Comité Maritime International. This rule mainly stipulated the definitions, rules of procedure, data validity, date and place of contract, taking delivery of the goods, right of control, private key, delivery, option to receive a paper document, effectiveness of electronic message and other content.¹⁶

Besides, it also stipulated the form, content, control and transfer of electronic bill of lading, and allow the Holder or carrier of electronic bill of lading to ask or issue the written bill of lading before delivery.¹⁷

This rule is soft law property, that is, it is applicable only when both of parties agree to use it. It doesn't include all the standards involved E-commerce or bill of lading, and it is only aimed at the formulation of electronic bill of lading.

The main operation model of CMI Rules on Electronic Bills of Lading is that the carrier as the registry center, upon receiving the goods from the shipper, shall give a receipt message to the shipper.

This receipt message is similar to the content and function of the traditional bill of lading. An important part in the receipt message is the private key. It can be said that the private key is the pivot of the electronic bill of lading. The Holder of the private key is equivalent to the Holder of the traditional bill of lading.

In other words, a person who possesses the private key has the right of control and transfer. The content mainly includes in accordance of Article 7 of CMI rules that:

- (a) Claim delivery of the goods.
- (b) Nominate the consignee or substitute a nominated consignee for any other

¹⁶SUN ZHANLI, legal issues in electronic bill of lading and its application. [ONLINE]
<http://www2.ccw.com.cn/1998/14/166750.shtml>.

¹⁷CMI Rules for Electronic Bills of Lading, [ONLINE]
<http://www.comitemaritime.org/rules/rulesebla.html>

- party, including itself.
- (c) Transfer the Right of Control and Transfer to another party.
 - (d) Instruct the carrier on any other subject concerning the goods.

A transfer of bill of lading shall have a notification of the current Holder and confirmation by the carrier of such notification message. The carrier, upon the confirmation of information on the right of control and transfer of the former Holder, shall send the information to the new Holder. The proposed new Holder confirms the notification of carrier (including the acceptance of the right of control and Transfer), whereupon the carrier shall cancel the current Private Key and issue a new Private Key to the new Holder. The carrier is only responsible for the party issued the final valid Private Key. But the carrier is responsible for the misdelivery of goods because he signs a similar Private Key, or resists the safety precautions of Private Key.

2.2.2.2 Model Law on Electronic Commerce enacted by the United Nations Commission on International Trade Law

United Nations Commission on International Trade Law formulated the Model Law on Electronic Commerce in 1996 and passed it in the United Nations assembly of December 1996 with Resolution 51/62.¹⁸

This law is the first cosmopolitan EDI legislation. It is mainly divided into two parts.

Part one mainly involves the electronic commerce in general; Part two is the electronic commerce in specific areas and concretely stipulates the electronic commerce issues in the goods transport.

Adopting the "functional-equivalent" approach, this law is based on an analysis of the purposes and functions of the traditional paper-based requirement with a view to determining how those purposes or functions could be fulfilled through electronic-commerce technology. Although this law can't be a real legal document in the property, the promulgation of this law produces great promotion

¹⁸TIAN WENYING, [2000]. Introduction to e-commerce law. Press of Xi 'an JIAOTONG University. pp.70-75

for the E-commerce legislation in many countries. Since then, many countries have used the content of this law in their E-commerce law more or less.¹⁹

2.2.2.3 CMI/UNCITRAL Preliminary draft instrument on the carriage of goods by sea

Preliminary draft instrument on the carriage of goods by sea was formulated by the United Nations Commission on International Trade Law and CMI and was approved by voting in April 2002.

It includes 17 Chapters, which mainly stipulates the uniform rules of application of electronic communication technology in the goods transport and the relation of rights and obligations among parties.

Since the draft was formulated as a convention, its recognition for the legal status of electronic communications technology in the field of cargo transport was fatal to the future development of electronic bill of lading.

The draft for electronic communication can be said to be ubiquitous. As long as the transport of document is involved in the draft, the transport document and electronic record will be mentioned at the same time or stipulated separately. The regulations of electronic communication in the draft mainly in Chapter 1 and 2, especially the principle of function equivalence in the Chapter 2 is very important from the point of view of electronic bill of lading.

According to 2.1, anything that is to be in or on a transport document in pursuance may be recorded or communicated by using electronic communication instead of by means of the transport document, provided the issuance and subsequent use of an electronic record is with the express or implied consent of the carrier and the shipper.

This provision achieves the equivalence between paper and electronic records so that the circulation function of electronic records can be ensured, that is, the electronic records have the typical function of written "document of title".

¹⁹LU GUOMIN, [2001]. Research on EDI legal issues in international trade. Law press, China. Pp. 92-86.

However, this draft makes no specific provisions how to achieve the circulation of electronic records. In general, Preliminary draft instrument on the carriage of goods by sea is further than Bill of Lading Act in the bill of lading legislation.

2.2.2.4 Provisions of Rotterdam rules on Electronic Bill of Lading

On 11 December 2008, at the United Nations General Assembly in New York, *the United Nations Convention on contracts for the International Carriage of goods wholly or partly by Sea* was formally adopted and the General Assembly decided to hold a signing ceremony in Rotterdam, the Netherlands, on 23 September 2009 which is open for signature by member States, so the Convention was renamed the Rotterdam rules.²⁰

According to the Rotterdam rules, maritime transport documents are divided into two categories, one is a transport document and the other is electronic transport record. Such a provision establishes a system of equality between traditional paper transport documents and electronic transport documents.

1 conceptual definitions involving electronic communications

Article 1 in paragraph 18 provide a legal definition of "electronic transport record" in terms of both form and function.

On one hand, electronic transport records are expressed in the form of messages in one or more messages sent by electronic means of communication. On the other hand, the function of electronic bills of lading is defined in full compliance with the idea of functional equivalence. In view of the functional consistency between the electronic transport record and the transport document, the definition describing the function reproduces the wording of the transport document "certifying that the carrier or performing party has received the goods under the contract of carriage and certifying that it contains a contract of carriage".

²⁰YANG YONGJIAN & GUO YU, [2011], *The Rotterdam rules*. China commerce and trade press. pp.21.

In addition, "Negotiable electronic transport records" and "non-transferable electronic transport records" are also defined in Article 1. The essence of these two concepts is consistent with "negotiable transport document" and "non-negotiable transport document".

2 Principle of functional equivalence

Provision 8 provides for "the use and effectiveness of electronic transport records". "Anything that is to be contained in a transport document under this Convention may be recorded in the electronic transport record, subject to the consent of the carrier and the shipper for its issuance and use".

In addition, provision 2 of the same article recognizes that electronic records and transport documents have the same legal effect as "the issuance of electronic transport records. Exclusive control and transfer shall have the same effect as the transport document".

3 Procedures for the circulation of electronic transport records

Article 9- "procedures for the use of negotiable electronic transport records", provided for certain procedures to be followed for the use of negotiable electronic transport records and referred to the main elements included in that procedure.

- ① Methods of issuing and transferring records to prospective holders.
- ② A guarantee of the integrity of transferable electronic transport records. The essence of this clause is the confirmation of the original in the electronic environment.
- ③ The manner in which the holder can prove his identity. The essence of this clause is the judgment mechanism of the electronic bill of lading controller and the authentication technology of the electronic signature in the electronic bill of lading circulation mechanism.
- ④ The confirmation of the delivery of the goods to the holder.

4 Transfer of control and power

Article 51, "Identification of the controlling party and transfer of control", paragraph 4, sets out the rules governing the identification and transfer of control

by the controlling party at the time the negotiable electronic transport record is issued.

Article 57, provision 2, in which a transferable electronic transport record is issued, regardless of whether the electronic transport record was issued by virtue of an instruction or by a named, the holder of the electronic transport record may transfer the rights contained therein by transferring the electronic transport record. And a clear distinction is made between the rights in the transport document.²¹²²



²¹Rotterdam rules.[ONLINE]

<http://smuiml.shmtu.edu.cn/index.aspx?lanmuid=68&sublanmuid=663&id=555>

²²Rotterdam rules (Chinese version) [ONLINE]

<http://blog.163.com/xshw2007@126/blog/static/10979236420142315226866/>

2.2.3 The Development of Korean Electronic Bill of Lading and the Korean Legislations

2.2.3.1 The Development and legislation of EDI and E-commerce in Korea

Under the impact of the development of EDI and the tide of electronic commerce, South Korea shows an enterprising and pioneering attitude.

First of all, in the relevant legislation of EDI, South Korea passed the Commercial Trade Automation Act on December 31, 1991, which is divided into 7 chapters and 29 articles. Chapter 1 is general provisions, and Chapter 2 is for "Trade Automation Network operators", Chapter 3 is for the "formation and utilization of trade automation networks", Chapter 4 is for Electronic document effectiveness and Standards, Chapter 5 is "Protection of electronic documents and trade information", Chapter 6 is "supplementary provisions", Chapter 7 is "criminal punishment".

The law gives electronic documents the same legal effect as paper documents, and basically removes the legal barriers to the application of edi in the commercial field. Because of its early promulgation, Korea became the first country in the world to formulate EDI regulations.

At the same time, in the development of electronic commerce, Korea formulated the basic Law of Electronic Commerce in 1999. This law deals with electronic information, security of electronic commerce, promoting the development of electronic commerce, and consumer protection. Standards have been established for the development of electronic commerce in Korea.

In 1999, Korea promulgated the Framework Regulation on Electronic Commerce, the main purpose of which is to promote the economic development of the country by clarifying the interests of the law, ensuring the security and reliability of electronic transactions, and establishing a framework to facilitate electronic transactions.

The Electronic Signatures Act was enacted in 1999 to promote the information and improve the ease of people's lives through the provision of basic rules for electronic signatures with the aim of ensuring the security and reliability of electronic information.

The "Electronic Commerce Consumer Protection Law" was formulated in 2002 to ensure the fairness of electronic trade and trade in goods and services in order to protect the rights of users, improve market reliability and develop the national economy.

In addition, the Korean Government has been making efforts to expand the scope and elements of the development of electronic commerce, making an effort at three levels, which are e-commerce technology, e-commerce human resources and e-business standards, striving for the development of e-commerce to get more market opportunities. In order to achieve these goals, the Korean Government has formulated a variety of plans to support these three areas of development. First of all, in the area of e-commerce technology, the government has taken the lead in defining the blueprint of e-commerce technology and the medium and long-term development plan of e-business technology. Secondly, in view of the extreme shortage of e-commerce technicians, the Korean government formulated the E-Commerce Human Resources Development Plan in 2000, and implemented a number of projects on the basis of this plan, and trained a large number of e-commerce talents for the future e-commerce market development to provide important human resources support. Thirdly, in the development of e-commerce standards, the Korean government promotes the implementation of e-commerce standards through the support of e-commerce standards research institutions. Up to now, several organizations have been set up in the whole country, such as Korea EDIFACT Committee, Korea Institute for Electronic Commerce, Electronic Commerce Integrated Forum, etc.

2.2.3.2 Legislation on Electronic Bill of Lading in Korea

In 2007, the Korean Legislative Council amended the Korean Commercial Law by adding provisions to Article 862, as follows

1. In accordance with article 852 (issue of bill of lading) or article 855 (charter party and bill of lading), the carrier shall, with the consent of the charterer, issue an electronic bill of lading by registration with a

registered institution designated by the chief justice. At this point, the electronic bill of lading has the same legal effect as the bills of lading in articles 852 and 855.

2. The electronic bill of lading should contain all information of article 853 (particulars of the bill of lading), and should be sent electronically by the carrier and come into effect only when received by the charterer or the sender.
3. The owner of an electronic bill of lading may transfer his rights by making an electronic document with an endorsement and attaching an electronic bill of lading to the other party through the designated registration authority.
4. In accordance with the manner provided in the third item, the reception by the counterparty of an electronic document containing the contents of the endorsement shall have the same effect as the delivery of the additional endorsement of the bill of lading in articles 852 and 855; The owner of the second and third electronic documents shall have the same rights as the holder of the bill of lading under articles 852 and 855.
5. The designation, issuance and endorsement of electronic bills of lading, the procedures for the collection of goods and other necessary matters shall be based on the Executive Order.

The following is Executive Order No. 20829

Article 2, defines the meaning of the terms used in the Act.

Article 3 sets out the conditions for the designation of a registered institution. The legal person, technical capability, financial capacity, facilities and equipment of the registered institution are specified.

Article 4 describes the steps to be taken for the establishment of a registered institution.

Officers who become registered institutions should prepare the following document to apply for appoint by the Chief Justice Officer. At this point, the head of the Ministry of Justice shall confirm the copy of the legal person's business license and the identity card and staff through the joint use of administrative information in accordance with article 21, item 1, of the Electronic Government

Act. If the applicant disagrees, the applicant shall be allowed to add attachment to the document.

1. Corporate Agreement
2. Documents supporting the identification of technical capacity, financial capacity, facilities and equipment, operational guidelines and other necessary matters in Article 3, paragraph 1
3. Business plan
4. In accordance with article 3, paragraph 2, when signing a contract for the use of facilities and equipment, documents that can prove the facts of the contract and its contents should be prepared.

Article 5, specified changes to requirements.

Article 6, the issue of electronic bills of lading.

The carrier shall, at the time of issuing the electronic bill of lading, submit an electronic application for registration of the following information. The carrier's recognized electronic signature and the consignor's consent to the issuance of the electronic bill of lading (including electronic documents) are appended to the document and sent to the registry.

1. All content of 1 item of article 853 of the Commercial Code
2. Address for delivery and picking up goods
3. Signature of carrier or agent expressed electronically

Article 7 Treat the carrier as the owner of the ship and the sender as the charterer in the case of the issuance of an electronic bill of lading pursuant to article 855 (1) of the Commercial Law.

Article 8. Transfer of electronic bills of lading

When the owner of an electronic bill of lading transfers an electronic bill of lading, he shall make an electronic document recording the meaning of the endorsement and apply, together with the electronic bill of lading, to send it to the transferee

The transfer request electronic document for item 1 should contain the following lines of information.

Information representing the same state of an electronic bill of lading
Assignee information
Recognized electronic signature of the assignee

The registration institution receiving the application for assignment No. 1 shall record the contents of the transfer containing the information in line 2 to the electronic register and send it to the transferee in a timely manner. The registered institution shall notify the assignor in a timely manner by electronic document when transmitting the third item to assignee.

The assignee of the assigned electronic bill of lading shall register with the information of the name, ID number, business license number, address and other information.

Article 9 changes in the contents of Electronic Bills of Lading

When the owner of an electronic bill of lading changes the contents of the electronic bill of lading, he shall apply to the registration institution for change in the form of an electronic document.

The registry shall notify the carrier of the application for change of item 1 by electronic document

The carrier shall notify the Registrar's consent in the form of an electronic document upon receipt of the second notice

The registration institution shall notify the owner of the electronic bill of lading in the form of electronic documents in time when receiving the notice of consent or not from the carrier. At this point, if the carrier agrees to a change in the contents of the record, notice shall be given after the change in the electronic registration of the bookkeeping.

Article 10. Application for picking up goods with an electronic bill of lading

If the owner of the electronic bill of lading wants to pick up goods, he shall make the electronic document to record the delivery of the goods and send the electronic bill of lading to the registration institution. The registration institution shall send the document to the carrier by electronic document in time.

In the event of the existence of the first application for delivery of goods, the registration institution shall record the contents of the relevant electronic bill of lading as non-transferable in the electronic register.

If the carrier who receives the first request for delivery wishes to refuse to do so, he shall send to the registry an electronic document containing the relevant contents and reasons, and the registration institution shall send it to the owner of the electronic bill of lading applying for delivery in time.

Article 11. Collection and reimbursement of electronic bills of lading

The carrier who receives the request for delivery through the registry shall confirm that the applicant complies with the owner of the electronic bill of lading in the electronic register and hand over the goods.

After the carrier has handed over the goods, the carrier shall notify the recipient of the goods in electronic documents and the date of transfer. The registered institution receiving the notice shall record and discard the electronic register and send the notice to the carrier and the recipient.

The transfer of the goods pursuant to item 1 and 2 is deemed to be a reimbursement to the carrier of an electronic bill of lading.

Article 12 (converted to a written bill of lading)

The registration institution shall deliver the written bill of lading to the owner when it receives the written conversion of the electronic bill of lading from the owner of the electronic bill of lading. At this point, signatures and seals recorded electronically will be deemed to be signatures under article 853, item 1 of the Commercial Law.

The registration institution shall record the transfer of the electronic bill of lading on the back of the first written bill of lading.

The transfer record on the back of the second written bill of lading shall have the same legal effect as the endorsement

When delivering a written bill of lading in accordance with item 1, the registration institution shall notify the fact to the carrier in the form of an electronic document after the electronic registration book of the electronic bill of lading has been discarded.

According to the content of item 1, the particulars of the converted and delivered written bills of lading shall be regarded as having been guaranteed by the registration institution for their accuracy.

Article 13 (custody of electronic bills of lading, etc.) pursuant to the operational guidelines of the registration institutions under Article 3, item 1, No. 5, electronic bills of lading and related electronic records such as issuance, transfer and assignment, conversion, alteration, etc., shall be provided and the content during the following keeping time.

10 Years from the date of delivery of goods

10 Years from the date on which the electronic bill of lading is made when the goods are not handed over

10 Years from the date on which the electronic register of the relevant electronic bill of lading is discarded when the bill of lading has been converted to a written bill of lading

Article 14 (Supervision, etc.) the head of the Ministry of Justice shall supervise the compliance of the relevant laws and orders of the registration institution and confirm the technical, financial capacity, safe operation of the facilities and equipment of the registration institution referred to in paragraph 1 of Article 3.

Article 15 (cancellation of designation)

The head of the Ministry of Justice may cancel the designation of a registered institution in any of the following items.

When resignation is obtained from a lie or other improper method

Serious violations of the conditions specified in the lines of article 3, item

When business is terminated because of the merger, bankruptcy, bankruptcy, etc., of a legal person.

The head of the Ministry of Justice should listen to the decision to cancel the appointment pursuant to item 1.

The head of the Ministry of Justice who wishes to cancel the designation pursuant to the first item shall issue a notice to the official website of the relevant Ministry of Justice.

The head of the Ministry of Justice may, in response to the cancellation of the designation pursuant to item 1, continue the transfer of issued electronic bills of lading, transfer the relevant electronic record-keeping business to other registered institutions, and convert to some necessary measures such as written bills of lading.

2.2.3.3 Korea Electronic Bill of Lading system

Korea electronic bill of lading system is funded by the government and authorized by the Ministry of Justice to operate the KTNET. The Ministry of Justice has the power to supervise and audit the system.

Korea electronic bill of lading system is composed of three parts, namely, commercial document information department, electronic real right registration center and Korea electronic bill of lading portal. In order to obtain the services of the system, users need to register on the KTNET website to become members and agree to its service agreement. The system is passed through Public Key Infrastructure (hereafter referred to as PKI) certification to ensure the authenticity and integrity of electronic communications, that is, before all electronic bills of lading are used to issue or transfer through electronic communications reaching to the registration center, they must obtain a digital signature provided or recognized by the Korean certification service provider: for a national or enterprise in Korea, it is necessary to provide an identity card number or an enterprise registration number;

For non-nationals, it is necessary to obtain the digital signature recognized in the Korea Electronic signature Act. In practice, the specific operating procedures of the system are as follows: Firstly, the shipper and the carrier enter into a contract for the carriage of goods by sea and agree to use an electronic bill of lading; secondly, the carrier applies to the Korean electronic bill of lading

system, and provide the contract content and the basic information required by the bill of lading (such as consignor, consignee, cargo description, etc.), requiring the system to issue the electronic bill of lading; Thirdly, after the system audit is approved, the electronic bill of lading is issued by its registration center and the identification verification code is distributed through the system to guarantee the uniqueness of the electronic bill of lading, that is, the original bill of lading. The electronic bill of lading is composed of two parts of electronic data record, one is used to identify the identity of the holder of the electronic bill of lading and stored in the electronic registration center of property rights, the other part records the information of the bill of lading and stores it in the commercial document information base. Both information is updated on a 24-hour cycle; finally, when the carrier (or consignor) obtains the electronic bill of lading and becomes its holder through the key, the carrier acquires control of the goods under the electronic bill of lading.²³



²³ Portal site of Korea EBL. [ONLINE] Available at:
<https://www.eblkorea.or.kr/>

Chapter III Provisions and Legislations of Electronic Bill of Lading in China

3.1 Electronic Bill of Lading in the Chinese laws

3.1.1 Contract Law of the People's Republic of China²⁴

The electronic bill of lading is a type of electronic contract. At present, E-commerce legislation only has rules that Article 11 of the Contract Law of the People's Republic of China (Hereinafter referred to "Contract Law"): written forms include electronic data text, and Article 33: Where the parties conclude the contract in the form of data-telex, one party may request to sign a letter of confirmation.

The former admits the legality of the electronic contract, and the latter involves the important condition of effective electronic contract, which can be said to be an exploration of the effectiveness of electronic contracts including electronic bill of lading.

Besides, Article 16, 26 and 34 stipulate the effective date of the electronic contract offer, the effective date of acceptance, and the place of the establishment of the contract.

Article 11 .The written forms mean the forms which can show the described contents visibly, such as a written contractual agreement, letters, and data-telex (including telegram, telex, fax, EDI and e-mails).²⁵

Article 16 An offer becomes effective when it reaches the offeree. If a contract is concluded through data-telex, and a recipient designates a specific system to receive the date-telex, the time when the data-telex enters such specific

²⁴Chinese contract law, [ONLINE]

<https://baike.baidu.com/item/%E5%90%88%E5%90%8C%E6%B3%95/111578?fr=aladdin>

²⁵Legal issues of Edi contracts.

system shall be the time of arrival; if no specific system is appointed, the time when the data-telex first enters any of the recipient's systems shall be regarded as the time of arrival.

Article 26 .An acceptance becomes effective when its notice reaches the offeror. If notice of acceptance is not required, the acceptance shall become effective when an act of acceptance is performed in accordance with transaction practices or as required in the offer.

Where a contract is concluded in the form of date-telex, the time of arrival of an acceptance shall be governed by the provisions of Paragraph 2, Article 16 of this Law.

Article 33. Where the parties conclude the contract in the form of letters or data-telex, etc., one party may request to sign a letter of confirmation before the conclusion of the contract. The contract shall be established at the time when the letter of confirmation is signed.

Article 34 .The place of effectiveness of an acceptance shall be the place of the establishment of the contract. If the contract is concluded in the form of data-telex, the main business place of the recipient shall be the place of establishment; If the recipient does not have a main business place, its habitual residence shall be considered to be the place of establishment. Where the parties agree otherwise, such agreement shall apply.

3.1.2 Provisional Regulations for the Implementation of Electronic Data Interchange (EDI) in the Foreign Trade of Guangdong Province

In order to solve the problem that there are no legislations about the electronic evidence, electronic signature, and so on, some developed areas in China promulgated some regulations, such as the Provisional Regulation for the Implementation of Electronic Data Interchange (EDI) in the Foreign Trade in Guangdong Province

Article 5 The EDI network system of the EDI Service Center must be inspected by the relevant technology and security departments to prove its reliability and security and to have the function of verification.

Article 6 .When the users use the EDI, they must apply for Internet to the EDI service center and relevant government agencies and pay expenses in accordance with the relevant provisions approved by the Provincial People's Government.

Article 8 The agreement party transfers or exchanges the data in accordance with the agreement and the EDI Internet system of the EDI service center, whose electronic message is legal, effective and feasible.

Article 9.The laws and regulations stipulates that the written form must be adopted and the content of the electronic message can be consulted freely, this electronic message is regarded as a legal written document.

Article 10 If the agreement party or the laws and regulations require the document must be signed and the electronic message is attached with the electronic signature, the electronic message is regarded to conform to the requirements of the agreement party or provisions of laws and regulations.

Article 11. Anyone who uses the electronic signature in the electronic message must be the legal person or the representative authorized by the legal person who conforms to stipulations of laws and regulations.

Article 13.The ownership of the electronic message is confirmed by the EDI service center in accordance with the ownership information of the electronic information. The EDI center shall have response and records that the message is received and extracted.

Article 14 The electronic message of the sender is delivered to the Email box of the receiver in the EDI service center and the required response is not received, the sender shall try to inform the EDI center or the receiver; if the response that message is extracted is not received in a certain reasonable time, this electronic message is regarded to be not received.

Article 15 The delivery time of the electronic message takes the time when it enters the EDI service center and is stored in the Email box of the receiver as the standard.

The time of receipt of the electronic message takes the time when the receiver extracts the electronic message from the EDI service center as the standard.

Article 16. The receiver shall inform the sender if it receives the incomplete and incorrect electronic message.

If the receiver receives the electronic message that doesn't belong to it, it shall inform the EDI service center to delete this message from the system.

Article 17. If laws and regulations stipulate that the documents and information must be stored for a long time, the electronic message of its form of expression shall be stored for more than 5 years.

Article 18 The stored electronic message must be able to be recovered if necessary and can be displayed in the form of readable format.

Article 19 .The attached information except for the electronic message shall be stored together, such as the sender, receiver, delivery date and time, and the date and time of receipt.

Article 21. The strict limit management and secure measures shall be made when the electronic message is transferred, consulted, and recovered.

3.1.3 Electronic Signature Law of the People's Republic of China

In order to standardize the E-commerce behavior and provide necessary legal guarantee, China drew on the experience of the UNCITRAL Model Law on Electronic Commerce and relevant legislations of EU, America, Japan, Korea and Singapore, widely heard the ideas of domestic experts in the E-commerce and the legal aspects, whereupon the drafting work of the Electronic Signature Law began in April 2003. The *Electronic Signature Law of the People's Republic of China*, firstly discussed in the 8th conference of the Standing Committee of the Tenth National People's Congress of the People's Republic of China on April 2, 2004, was passed on August 28, 2004.

This Law came into force as of the date of April 1, 2005. The *Electronic Signature Law* mainly stipulates the effect of the data message and the electronic signature, conditions that the reliable electronic signature should satisfy, certification of original data message, and access system of E-commerce certification bodies.²⁶

Article 3 of this Law clearly stipulated the legal effect of electronic signature and data message, detail as follows, the parties may stipulate to use or not to use electronic signature or data message in the contract or other documents and documentations in civil activities. The legal effect of any document using electronic signature and data message as stipulated by the parties shall not be denied only because it takes the form of electronic signature and data message, Article 14 of this Law clearly stipulated that a reliable electronic signature shall have the same legal effect with the hand signature or seal. It shall be regarded as a reliable electronic signature if it meets the requirements of the Article 13:

1. When any data made by electronic signature is used for electronic signature, it is owned exclusively by the electronic signatory;
2. The data made by electronic signature is controlled only by the electronic signatory when signing;
3. Any alteration on electronic signature after signing can be found out;
4. Any alteration on the contents and form of any data message can be found out after signing.

Article 5 of this Law make a provision for the original that the parties require in the business trade: he data message meeting the following requirements shall be regarded as satisfying the requirements for the form of the original as prescribed by laws and regulations.

1. Data message that is capable of effectively showing the contents it specifies and may be picked up for reference and use at any time;
2. Data message that is capable of unfailingly ensuring that the contents are complete and unaltered from the time when it finally comes into being. But the integrity of the data message will not be influenced by the adding of

²⁶ Problems solved by electronic signature law. [ONLINE] Available at: <https://zhidao.baidu.com/question/412965476.html>

endorsement in the data message and the alteration of forms occurred during the course of data interchange, storage and display.

3.1.4 E-commerce Law of People's Republic of China (draft)²⁷

December 7, 2013, held the "e-commerce law" the first drafting group meeting, officially launched the "e-commerce law" legislative process. December 27, 2016 to January 26, 2017 in the Chinese People's Congress Network to the national public e-commerce legislation for comments.

The e-commerce law is still in the drafting stage, current stage, We can see the law on the e-commerce business entities and e-commerce third-party platform requirements and requirements, There are also specific entries for cross-border electricity service, dispute resolution and supervision²⁸

This will be the first legislation in China's e-commerce, On the electronic bill of lading will also play a guiding role.²⁹



²⁷China e-commerce law (second instance), [ONLINE]
<http://b2b.toocle.com/detail-6421980.html?from=groupmessage>

²⁸ Interpretation of the second review of Chinese Electronic Commerce Law. [ONLINE]
Available by:

<https://zhuanlan.zhihu.com/p/30783974>

²⁹The second trial will be concluded on November 1, 2017, and it is expected to be issued in 2018

3.2 Reference to international laws, problem about Legislation of Electronic Bill of Lading in China

3.2.1 Issues related to the definition of "data messages" and Electronic Bill of Lading

Electronic data message is a legal problem, for which there are different expressions in different countries.

United Nations Commission on International Trade Law used Data Message i.e. electronic data message in the *Model Law on Electronic Commerce*, and stipulated that "Data message" means information generated, sent, received or stored by electronic, optical or similar means including, but not limited to, electronic data interchange (EDI), electronic mail, telegram, telex or telecopy. And "Electronic data interchange (EDI)" means the electronic transfer from computer to computer of information using an agreed standard to structure the information.

Korea *Basic Act on Electronic Commerce* adopted the Data Message that means the information generated, sent, received or stored by electronic or similar means including computer and other electronic data-processing equipment.

As mentioned above, the bill of lading referred to in Chinese maritime law is only a written bill of lading, barring electronic bills of lading, so that electronic bills of lading have not yet established its legality in Chinese law.³⁰

Therefore, I believe that in order to establish and improve the development prospects of electronic bills of lading in China, we must take this as the starting point.

³⁰Maritime Code of the People's Republic of China, Article 43 The carrier or the shipper may demand confirmation of the contract of carriage of goods by sea in writing. However, voyage charter shall be done in writing. Telegrams, telexes and telefaxes have the effect of written documents.

Article 11 of the Chinese Contract Law states that "written form shall mean the form in which a contract, letter and data message (including telegram, telex, facsimile, electronic data interchange and e-mail) may be physically manifested"

The NO.4 Item in PRC Digital Signature Law also provides that "data messages that are capable of tangible representation and may be accessed at any time shall be deemed to be in writing in accordance with the requirements of laws and regulations"

I think that this is a relatively objective legislation, but it is a typical principle of functional equivalence, so we should go further in the Civil Code by stipulating in the general rules that "the civil acts of the parties may be taken in the oral form, the written form and the data message form".

In this way, electronic data interchange (EDI) and electronic mail will be taken out from the written form and placed in the scope of the data message, making it more convenient for electronic commerce to become the object of legal adjustment.

As for the contents of the contract law, because it is mainly about the form of the contract, so it is very different from the transport documents involved in the Maritime Law. It is better not to copy the principle of functional equivalence here, instead, we should draw on the provisions of Article 8 of the Rotterdam rules. The first step is to develop new directory in Chinese maritime law to clarify concepts such as "electronic transport records", "negotiable electronic transport records", "non-transferable electronic transport records", etc. We should recognize the legal status of electronic bills of lading and provide the basis for the definition and application of electronic bills of lading.

Then, the relevant provisions may be added after Article 71 of the Chinese Maritime Law, which stipulate that with the consent of the shipper and the carrier, the contents of the written bill of lading may be recorded in the electronic bill of lading, and the issuance, exclusive control or transfer of the electronic bill of lading shall have the same effect as the issuance, possession or transfer of a straight bill of lading.

3.2.2 The problem of Electronic signature

At present, all countries of the world including international organizations devote themselves to the legislation and research of electronic signature.

Utah Digital Signature Act in 1995 is the first legal document that fully confirms the standard of electronic commerce in America even in the world.

At present, there are 19 states adopted the Digital Signature Act. Former president Clinton in America instruct the US Department of Commerce to solicit opinions across the country in order to modify the articles that hinder the development of e-commerce in US laws so that the development of American E-commerce is further sped up.

America States Senate and House of Representatives also adopted the Digital Signature Act which allows electronic signatures to replace handwritten signatures in the contract to protect the business transaction or contract based on the electronic signature from the legal discrimination, and electronic billing and Internet Bank also will be written in the modified act.

In 1998, EU published "Guidance on the legal framework for electronic signatures" and "EU directive on the handling of personal data and the protection of personal data in its free movement".

In 1999, EU published the Draft Uniform Rules on Electronic Signatures, and some European countries, such as Germany, built the legal system of digital signatures based on the approval system.

In 1997, Italy formulated the Italy Digital Signature Act. In order to implement this act, executive orders were issued in 1998 and 1999 and technical rules of digital signatures were formulated.

Ireland issued the "policy framework on cryptography and electronic signatures in Ireland".

In 1997, Malaysia formulated the Digital Signature Act which can be said to be the Asia's earliest E-commerce legislation.

Article 14 of UN Hamburg Rules in 1978 stipulates that the signature on the bill of lading may be in handwriting, printed in facsimile, perforated, stamped, in symbols, or made by another mechanical or electronic means, if not inconsistent with the law of the country where the bill of lading is issued.

Article 7 of UNCITRAL Model Law on Electronic Commerce also broadens the meaning of signature which is a method is used to identify that person and to indicate that person's approval of the information contained in the data message.

The law on electronic signatures provides that "signature on a trade document has three main functions: One is to indicate the source of the document, that is, the signer; One is to show that the signer confirmed the contents of the document; One is to constitute evidence that the signatory is responsible for the correctness and completeness of the contents of the document."

More importantly, documents signed by the parties themselves become the "original", the signature itself and the contents of the document rely on paper to form a whole, which can effectively ensure the integrity of the document content and prevent changes. In other words, the uniqueness of a legal document is guaranteed, which is of great significance to the circulation of written documents.

Similarly, electronic signature also plays these roles in the use of electronic bills of lading. In terms of the current technology, electronic signatures have been able to play these roles, so the circulation of electronic bills of lading should not be affected by these.

Article 3, Item 1 of China's Electronic signature Law stipulates that "in civil activities, the parties may agree to use or not apply electronic signatures and data messages to such documents as contracts or other documents.

Item 2 provides " that the parties have agreed to use an electronic signature or a data message shall not negate its legal effect simply because it uses an electronic signature or the form of a data message".

Those provisions have made it clear that China recognizes electronic signatures having the same legal status as traditional signatures.

Therefore, the Civil Code should go a step further by adding provisions to clarify the definition of "electronic signature" and to provide that "electronic signature" plays the same role in the data message as the "signature" in the written form, which belongs to the relationship between the signer and the signature information and does not need to be used by mutual agreement, as long as it is technically reliable electronic signature, its legal effect is the same as the traditional signature and seal.³¹

This would require a change in the existing Law of Electronic Signatures.

The Law of Electronic Signatures has a flaw, which is that a distinction is made between electronic signatures and reliable electronic signatures (reliable electronic signatures and handwritten signatures or seals have the same legal effect), however, it does not propose an existing technically mature electronic signature technique as the preferred option. Too much emphasis was placed on technology neutrality and the possibilities for the future.

At the same time, article 13, Item 2, of the Law also provides that the parties may use the agreed reliable electronic signature. And if the reliable electronic signature is too vague, which is not conducive to judging which electronic signature is reliable and has legal effect.

In the aspect of solving problems of legislative comparison, I think that we can learn from Singapore's Electronic Transactions Law.³²

³¹ China's Electronic Signature Law, article 13
If an electronic signature concurrently meets the following condition, it shall be deemed as a reliable electronic signature:

(1) when the creation data of the electronic signature are used for electronic signature, it exclusively belongs to an electronic signatory; (2) when the signature is entered, its creation data are controlled only by the electronic signatory;

(3) after the signature is entered, any alteration made to the electronic signature can be detected and

(4) after the signature is entered, any alteration made to the contents and form of a data message can be detected.

The parties concerned may also choose to use the electronic signatures which meet the conditions of reliability they have agreed to.

³² The Enlightenment of Singapore's electronic trading law to China. [ONLINE] Available by: <https://www.xzbu.com/4/view-4028777.htm>

Electronic Transactions Law in Singapore takes a compromise approach, which not only provides for the general effect of digital signatures, preserves technical neutrality and can apply to any technology-based digital signature but also makes special provisions for so-called "secure digital signatures" (digital signatures based on public key technology) and establishes a matching authentication mechanism.

This is both realistic, open and forward-looking. Here, Chinese Law of Electronic signature can be amended and copied according to the above wording.

Singapore's legislation has also been the focus and full affirmation of the United States, the European Union and other developed countries. The recognition of the international community is also conducive to the thinking of Chinese legislators, even in the next revision of the Civil Code to be considered.

3.2.3 Legal issues related to intermediary services of Electronic Bill of Lading (Registration Institution)

Whether it uses a registration authority of electronic bill of lading similar to Korea, or a program similar to bolero, or simply increases cooperation with intermediary service providers of the type of bolero, the first thing we need to do is do a good job in legislation. This section will be elaborated separately.

1. Problems on the legal status of intermediary Service providers

First of all, we should draw lessons from the provisions of article 3 of Korea Electronic Bill of Lading Act³³, define the intermediary service provider as a corporate person. Becoming a legal person is a premise of enjoying rights and undertaking obligations independently.

Considering that the circulation of electronic bill of lading is not like the circulation of stock and securities after all, it is related to the lifeblood of Chinese

³³ Article 3 sets out the conditions for the designation of a registered institution. The legal person, technical capability, financial capacity, facilities and equipment of the registered institution are specified.

national economy, so I think that the intermediary service provider can also be as profitable as bolero.

Secondly, the flow of electronic bills of lading has high requirements for intermediary service providers, requiring advanced software and hardware facilities, security precautions and professionals in related fields. The number of goods involved in electronic bills of lading in the maritime field is often enormous. In the event of a technical failure, the consequences may be serious, so the definition of the service provider should be formulated as "the provision of services such as sending, receiving, storing and electronic signature authentication of data messages related to the carriage of goods by sea with its own equipment. And supervise the data message flow, self-regulatory management of the company legal person."

In this way, it can not only satisfy the demands of various kinds of intermediary service providers to join the Chinese electronic bill of lading business, but also increase the intensity of supervision and adopt more strict principles of establishment, just like Korean law.

2 Establishment and dissolution of intermediary services

The establishment of this article may refer to the provisions of Article 17.18 of Chinese Law of Electronic Signature, the provisions of Article 10 / 11³⁴/12 / 13/14 of *the measures for the Administration of Electronic data Interchange for International Maritime Container Transport*, and the provisions of Article 3 / 4 / 15 of *the South Korean Electronic Bill of Lading Law*.

First of all, we have to make clear conditions of establishment, such as the registered capital. South Korea's electronic bill of lading law is 20 billion won of the net assets, then in China that amount can not be less than 10 million yuan.

³⁴ The establishment of the EDI center must have the following basic conditions:

- (1) The relevant documents and certification materials approved by the competent industry department.
- (2) registered funds adapted to the scope of their services;
- (3) fixed office space;
- (4) Software and hardware platform suitable for service range and good communication environment.
- (5) qualified personnel through training and assessment;

The number and qualification of relevant professional technical personnel and management personnel, the qualification of relevant business premises, and the technology and equipment in accordance with Chinese safety standards can be found in Article 3 of *Korea Electronic Bill of Lading Law*, which can be used for reference.

In addition, it should be stipulated that the establishment of the intermediary service provider must be examined and approved by the relevant departments of the State Council before it can apply for a business license to the industrial and commercial department, and then apply to the relevant department for a license to operate the EDI platform.

3 Legal relationship between intermediary service provider and member

Intermediary service providers provide electronic data transmission, reception, storage and electronic authentication services for members. For a member, he and the intermediary service provider actually form a kind of service contract relationship. And as a return, member will pay the government membership fee to the intermediary service provider.

Article 2 of the *UNCITRAL Model Law on Electronic Commerce* provides that an intermediary is, in the case of a data message, a person who transmits, receives or stores data message and provides other services on behalf of another person.”

The parties involved in the electronic bill of lading carry out electronic data transmission. The intermediary should not have an independent intention to express, which I hope can be supplemented in the Chinese law..

4 Regulations on the technology use by intermediate service providers

In 1999, the State Council of China promulgated *the regulations on the Administration of Commercial passwords*, which regulated the production, sale and use of passwords both inside and outside China, and strictly restricted the import of commercial passwords from abroad. The promulgation of this regulation of the promotion of electronic bills of lading has produced big side effects. For the development of intermediate service providers, such technical

restrictions should be gradually reduced and, in addition, technical standards that meet international certification standards should be developed.

The Ministry of Information Industry of the State Council should promulgate the relevant technical standards. This can be done by referring to the provisions of articles 24 and 25 ³⁵ of *the measures for the Administration of Electronic data Interchange for International Maritime Container Transport*. In revising the Maritime Law, it is stated that: The transmission of data messages shall be in accordance with the *1987 uniform rules of Conduct for Electronic Transmission of Trade Data Interchange, Relevant Standards of the United Nations rules for Electronic Data Interchange in Administration, Commerce and Transport*".

3.2.4 The legal problem of Electronic Bill of Lading realizing the function of traditional Bill of Lading

How electronic bill of lading achieve the functions of traditional bills of lading, has been the focus of the legal profession. Combined with the legislative situation in China, I also want to state my own views.

First, this part is divided into two parts, one is the situation in which the parties agree to use data messages directly, the other is the situation in which parties use electronic data interchange platform.

(1) situation in which the parties agree to use data messages

Chinese Maritime Law can refer to the CMI electronic bill of lading rules, making corresponding legislative provisions. Due to the lack of maritime law, I want to give corresponding legislative advice.

(1) When the electronic bill of lading is created

Referring to article 4, item of the rules on Electronic Bills of Lading: After receiving the goods provided by the shipper, the carrier shall notify the shipper of the receipt of the goods by telecommunication at the electronic address indicated by the shipper. And according to paragraph (b) (I), the time of creation

³⁵ EDI message should adopt international code standard or national standard, or also adopt industry standard or agreement standard.

of the electronic bill of lading should be coincided with the creation of the traditional bill of lading, which is after the carrier have received the goods.

(2) When does the shipper become the holder of the bill of lading

Referring to article 4 (b) (b) of the rules on Electronic Bills of Lading: The shipper must confirm the receipt of the telecommunication to the carrier, according to which the shipper becomes the holder.

However, a sentence should be added to maritime law: Considering the particularity of the electronic bill of lading, the shipper should inform the carrier that it had received a telecommunication notice, which was the shipper's obligation and that the shipper could become the holder only after that obligation had been fulfilled.

(3) When the electronic bill of lading is transferred

Referring to article 7 (b) (I) of the rules on Electronic Bills of Lading: The carrier should destroy the current password and issue a new password to the new holder.

Referring to the above regulations, I think that the provisions of China's maritime law should be: If the electronic bill of lading rule is applied, the proposed new holder becomes the new holder only upon receipt of the new password issued by the carrier.

This provision is inconsistent with the requirement that when the shipper becomes a holder of an electronic bill of lading, he should issue a confirmation of receipt to the carrier on the grounds that the transfer of the electronic bill of lading is marked by the receipt by the transferee of a new password issued by the carrier, in which case, the arrival of the password is of the same function as the delivery of the traditional bill of lading. And that the carrier sends the new password equivalent to send out the transferor bill of lading in the traditional bill of lading transfer procedure. According to the traditional bill of lading transfer procedure, once the transferee receives the bill of lading, the transfer of possession is presumed to have taken place. Assignee does not need to notify the

transferee, let alone the carrier, so the new holder does not need to notify the carrier in the electronic bill of lading proceedings.

Of course, in view of the excessive liability of carriers in *the rules on Electronic Bills of Lading*, Chinese Maritime Law may also be amended appropriately, such as by providing that: The transferor sends to the assignee a data message containing information involving the irreversible transfer mark, which becomes a new holder upon receipt of the data message, provided that the transferor notifies the carrier of the assignment. Otherwise, the assignment shall not be against the carrier.”

Such a provision would eliminate the additional liability of the carrier and restore the traditional mode of circulation of the electronic bill of lading.

Of course, maritime law should regulate the time when the parties receive data messages, which could be addressed by referring to article 15 of *the UNCITRAL Model Law on Electronic Commerce*, which reads as follows: The parties shall promptly transmit the information to the other party through the data message, and the data message shall be deemed to have been received by the party when it enters the party's information system.

(2) The situation in which parties use electronic data interchange platform

We can refer to the bolero rules Manual and make relevant provisions.

(1) When the electronic bill of lading will be created

After the carrier receives the goods, an electronic bill of lading is created through the central telecommunications system of the intermediary service provider in the rights registration system of the intermediary service provider, and the shipper is instructed to be the holder of the electronic bill of lading.

(2) When will shippers become holders of bills of lading

After the carrier creates an electronic bill of lading with the shipper as its new holder, the intermediary service provider sends a data message to the shipper on behalf of the carrier through the central telecommunications system, and when the data message enters the information system agreed between the shipper and

the intermediary service provider, the shipper becomes the holder of the bill of lading.

(3) When the electronic bill of lading will be transferred

If the original holder of an electronic bill of lading, through the central telecommunications system of the intermediary service provider, modifies the electronic bill of lading that has been created in the registration system for the rights of the intermediary service provider, and designates other parties to become new holders of the electronic bill of lading, at this point, the intermediary service provider will send a data message on behalf of the original holder through the central telecommunications system to the party proposed to become the new holder. At this point, the party to the recommended holder shall notify the intermediary through the data message within 24 hours of the receipt of the data message to accept or reject the transfer of the electronic bill of lading.

3.2.5 Problem about jurisdiction of the Electronic Bill of Lading

Problem about jurisdiction of the electronic bill of lading belongs to the problem about jurisdiction of the E-commerce cases, and is also a legal difficult problem. Because the E-commerce is global and open, all countries highly concern about the jurisdiction of E-commerce, and hope their national courts to enlarge the jurisdiction to maintain national interests. If the problem about jurisdiction is misconducted, unnecessary disputes will be caused among the countries. Therefore, the international community has formulated a series of laws,

Here are some examples.

(I) USA

In the USA, the standard that the jurisdiction towards the network cases changes through the legal precedents all the way. Originally, the long-arm statute requires to have purposefully availed itself of the benefits of the forum state. Later, it requires the network users to make the choice of the forum state by the website to agree the jurisdiction of a forum in advance. The forum is very elusive when the specific jurisdiction is exercised. But one thing is certain, that is, the

expansion of "long-arm jurisdiction" to network cases is the universal practice of United States courts to deal with the jurisdiction of network cases.³⁶

(II) European Union

The European Union always pay attention to the protection of consumers, and incorporates it into the scope of public policy. In practice, it tends to connect the jurisdiction of Internet with the court located in the location of consumers, and ignores whether there are Minimum Contacts with the court. EU Directive on electronic commerce passed in 1999 implements "home jurisdiction" to the customers, allows dissatisfied online shoppers to sue the E-commerce companies in the courts of residence in their countries, and ignores whether those companies have ever actively searched to sell their products in the court cities. This Directive only pays attention to the E-commerce customers not the E-commerce so that the E-commerce is forced to response the potential lawsuits within the extent of jurisdiction of the member state that the consumer lives. Some thinks that this way of jurisdiction may seriously hinder the development of E-commerce.

(III) Hague Conference on Private International Law

Because of the particularity of the E-commerce, Hague Conference on Private International Law is discussing whether the Preliminary Draft Convention on Jurisdiction and Foreign Judgments in Civil and Commercial Matters should contain the jurisdiction of E-commerce and the member states are still arguing about this. Hague Conference on Private International Law took a cautious attitude towards this issue, and organized the specialists to discuss it in Ottawa, Canada on January 2000. In the Ottawa Conference, the specialists discussed whether new rules of jurisdiction about the problem of contract and infringement in the network environment should be formulated. Concerning the contract, the Conference considers that the different jurisdiction rules of the E-commerce contract should be confirmed in different cases.

The E-commerce contract signed online and performed offline can directly use the rules in Article 6 of the Hague Preliminary Draft Convention on

³⁶QIU MENG, [2004]. Long arm jurisdiction of American courts. Shenzhen university press.pp.15-21

Jurisdiction and Foreign Judgments in Civil and Commercial Matters and other rules are unnecessary. The reason is that such E-commerce contract is only different from the traditional contract in the contract signing way and there is no substantive difference in other aspects. Therefore, the provisions of the Article 6 of the Draft Convention on the jurisdiction of general contracts can be applied in such incomplete E-commerce contracts. But for the contract signed and performed online, a supplementary clause is necessary. The reason is that the provisions of Article 6 of the Draft Convention differentiates between goods and service, but the traditional differentiation between the goods and service is not practical for the full E-commerce that the contract is signed and performed online. Besides, online performance has no physical place so that the confirmation of physical place required in the Article 6 faces the difficulties. These are reasons why the rules of Article 6 are not suitable for full E-commerce contract. However, the main item of the E-commerce is mainly the information, which is regarded as a kind of service suggested in the EU Directive on electronic commerce. Therefore, the specialists think that the supplementary clause should regard the information interchange as the service supply and the location of information transmission as the basis of jurisdiction confirmation. About the jurisdiction of the infringement problem, the Article 10 of Hague Draft Convention stipulates that the court has the jurisdiction in the place of injury unless there are evidences to indicate that the infringer cannot reasonably predict the result of the injury. At the same time, the court in the place of injury has the right to judge the injury of aggrieved party in anywhere in the world as long as the aggrieved party's habitual residence is located in the territory of the court. But under any network circumstances, the place of injury can be anywhere in the world, the place of injury is not unique and certain, so its confirmation is very difficult. Besides, the defamatory information released by the infringer can be downloaded by people via the website, so the infringer can reasonably predict that this information can be browsed anywhere in the world, and only cannot know the quantity of the "copies". Therefore, it is difficult to stipulate the jurisdiction infringement act online and "reasonably predict" under the network environment.

The jurisdiction of electronic bill of lading is actually the jurisdiction of electronic commerce. In that regard, it is the principle of States to expand the jurisdiction of their courts as far as possible, since it is not disadvantageous of their own enterprises or individuals to adjudicate in other countries. Therefore, I decide to make my own judgment and suggestions on the establishment of the

jurisdiction system of electronic bill of lading on the basis of expanding the jurisdiction of the Chinese court as far as possible.

First of all, I think that there is no need to add a new jurisdiction to the disputes over the contract of carriage of goods by sea. Although, according to the "minimum principle of connection" and "purposeful utilization", the commercial contacts of the parties to a contract for the carriage of goods by sea are mainly conducted through Electronic data interchange platform, which should be considered that these parties are intended to use the resources in the area of EDI server, with minimal links to the local court; and in accordance with the Chinese tradition of the place of contract performance, the place of information exchange between the two parties can also be regarded as the place of performance of the contract (acts such as the issuance of electronic bills of lading, etc.) so that the court or party in the location of the EDI server is connected to court at the location of the server to which the information was received or of the system where the information was received acquired jurisdiction, but the performance of main obligation of contract of carriage of goods by sea are not carried out on line, which is has no difference with traditional performance. According to *The opinion of The Hague Conference on Private International Law* in February 2000, it should be subject to the jurisdiction of the court of the place where the principal obligation is performed. Considering most of the world's advanced EDI services now are provided by foreign companies. By doing so, the possibility of an increase of jurisdiction of foreign courts would be suppressed.

And I think that the dispute of service contract between the parties and the third-party providing electronic data transmission should be added to new Jurisdiction. I suggest that the "regulations on Intermediate Service providers", which may be issued in the future, should clearly provide that: if a dispute arises between a party and an intermediary provider providing electronic data transmission over a service contract, the party may prosecute in the people's court of his domicile.

The reason why it is possible to sue at the place of residence of the parties is that, as a third person specialized in providing EDI services, this constitutes a form of consumer law jurisdiction, and the service provider should bear more obligations towards the consumer. We can learn from the EU's "in situ jurisdiction", the parties as consumers can sue in their place of residence without

having to travel a long way. In addition, the intermediary service provider through the network purposeful business activities in the consumer location is also in line with the "purposeful use" theory. Consumers can naturally sue in their place of residence. Of course, it is also meaningful to make such a provision, because the vast majority of people in the world who are now able to provide complete and advanced EDI services are some foreign companies, such as Bolero, as described above. Some large shipping companies in China, such as COSCO Group, also participated in the Bolero scheme. If a similar dispute occurs between Chinese and foreign companies in the future, then the Chinese court can obtain jurisdiction, otherwise Litigation or arbitration carried out abroad is very unfavorable to us. In addition, with regard to the new understanding of the place of performance of the contract, the parties are perfectly able to prosecute in People's Court where the third-party's EDI server is located or where the new system is received.

Of course, the above suggestions were made on the basis that the parties did not choose the jurisdiction of the agreement. If the parties choose the jurisdiction of the agreement, Chinese maritime law does not stipulate the exclusive effect and the third-party effect of the court selection agreement. From the provisions of Article 244 of *the Civil Procedure Law*³⁷, it can be seen that Chinese legislation recognizes the choice of court jurisdiction by agreement, but an effective court jurisdiction needs to sign a written agreement first, and then the court chosen must have a practical connection with the dispute.

China's Civil Procedure Law has confirmed the evidentiary validity of electronic data, and the Maritime procedure Law stipulates that the court located at the port of transshipment may also serve as the competent court for maritime transport disputes.

I believe that "location of data transmission system service provider" can be added in this article to introduce the relevant concept of "electronic transport

³⁷Article 244 Parties to a dispute over a contract concluded with foreign element or over property rights and interests involving foreign element may, through written agreement, choose the court of the place which has practical connections with the dispute to exercise jurisdiction. If a people's court of the People's Republic of China is chosen to exercise jurisdiction, the provisions of this Law on jurisdiction by forum level and on exclusive jurisdiction shall not be violated.

record" mentioned in the Rotterdam Rules to adjust the jurisdiction court after the dispute arises.

However, the premise is that the number of Chinese electronic bills of lading, or electronic data transmission system service providers will increase, or the addition of new foreign jurisdictions would be detrimental to the interests of local dealers in China.

As far as the choice of the jurisdiction court is concerned, the dispute is different from the general civil action, especially about the validity of the jurisdiction clause of the bill of lading, which has a certain particularity. In the practice of maritime transportation, it is difficult to unify in practice because of the disputes about the validity of the jurisdiction clause of bill of lading, and because the relevant laws of China have not been clearly determined.

I suggest using the Rotterdam Rules³⁸ for reference on the practice of "the agreement on the jurisdiction of the court agreed upon in volume contracts"³⁹, and to make a clear provision for the agreement to select the court of jurisdiction in order to fill the gap in this field.

³⁸ YANG YONGJIAN, [2015]. The attitude to the rules of Rotterdam. [ONLINE] http://blog.sina.com.cn/s/blog_9ae626ff0102wako.html

³⁹ Article 67 Choice of court agreements

1. The jurisdiction of a court chosen in accordance with article 66, subparagraph (b), is exclusive for disputes between the parties to the contract only if the parties so agree and the agreement conferring jurisdiction: (a) Is contained in a volume contract that clearly states the names and addresses of the parties and either (i) is individually negotiated or (ii) contains a prominent statement that there is an exclusive choice of court agreement and specifies the sections of the volume contract containing that agreement; and (b) Clearly designates the courts of one Contracting State or one or more specific courts of one Contracting State.

2. A person that is not a party to the volume contract is bound by an exclusive choice of court agreement concluded in accordance with paragraph 1 of this article only if:

- (a) The court is in one of the places designated in article 66, subparagraph (a);
- (b) That agreement is contained in the transport document or electronic transport record;
- (c) That person is given timely and adequate notice of the court where the action shall be brought and that the jurisdiction of that court is exclusive, and
- (d) The law of the court seized recognizes that that person may be bound by the exclusive choice of court agreement.

3.3 Comparison Regulation of Electronic Bill of Lading between China and Korea

3.3.1 The advantages and disadvantages of Korean Electronic Bill of Lading system

China does not yet have a regulation on the use of electronic bill of lading, In the process of research, I have found some experience from the Korean electronic bill of lading model.

First of all, its advantage that, in order to make the electronic bill of lading obtain the same legal status as the traditional paper bill of lading under the regulation of Korean law, the carrier must register with KTNET- a quasi-public institution authorized and supervised by the government, giving users confidence in the new electronic bill of lading system through official background support. In fact, whether in the field of electronic bills of lading or in other areas of electronic commerce, many successful electronic registration systems can see the shadow of public power.

As for its disadvantages, first, the bill of lading issued by the system is governed by Korean law, while the major shipping practices in the world currently apply Anglo-American law, especially English law, which limits the use of this system; secondly, although Korea regards electronic bill of lading and traditional paper bill of lading as two parallel forms of bill of lading in legislation, this kind of "functional equivalence" is conditional. That is, only the electronic bill of lading issued by the Korean electronic bill of lading system can obtain the recognition of Korean law and enjoy the same legal status as the traditional paper bill of lading. The shipping industry is a worldwide industry, which needs further study.

3.3.2 Compare the legislation between Korea and China.

Article 2 in the provisions of the electronic bill of lading in Korea shows the accurate definition about the electronic bill of lading, but the relevant law information in China don't directly give the legal definitions of the electronic bill of lading and only admit the legal effect that the electronic bill of lading acts as a kind of electronic contract

Next, for the registered institution of the electronic bill of lading, the provisions of the electronic bill of lading in Korea gives it meaning and specific function, and in the E-commerce Law of People's Republic of China (draft), Article 1 and Article 2 of Chapter 2 also stipulates the business entity of e-commerce including the third platform and operator but it is general because it involves the whole e-commerce field.

Article 3 in the provisions of the electronic bill of lading in Korea detailly stipulates the appointed conditions of the registered institutions from the technical ability, economic ability, and the level that device and equipment are possessed involving specific data and information

Article 4 and 5 make definite elaborations about the modification of the appointed procedures and important conditions

Korea has issued the special legislations for the electronic bill of lading, but China doesn't have any special legislations for the electronic bill of lading and relevant measures don't be mentioned

It is worth mentioning that Article 6 to Article 10 in provisions of the electronic bill of lading in Korea make definite provisions about the issue, the transfer, and the cargo transfer of the electronic bill of lading, which has instructive significance that China will issue the special laws and regulations of the electronic bill of lading in the future

In addition, about the storage of the EDI information, Article 17, 18, 19, and 21 in the Provisional Regulations for the Implementation of Electronic Data Interchange (EDI) in the Foreign Trade of Guangdong Province mention the

specific storage method and time and the provisions of the electronic bill of lading in Korea also stipulates that the storage period is 10 years
Where, the storage period in the local law is 5 years

We can see that both the Korea law maker and China law maker attach importance to the storage of the EDI information

For the supervision problem of the e-commerce, Article 74 to Article 80 of Chapter VI in the Draft of E-commerce Law of People's Republic of China make elaborations and theoretical attempts about the supervision of the e-commerce according to the Chinese national conditions.

But in Korea, both the e-commerce and the provisions of the electronic bill of lading make elaborations

Because there are no special regulations of the electronic bill of lading, Chinese law has no specific standards about the interchange between the paper bill of lading and the electronic bill of lading.

Article 12 in the provisions of the electronic bill of lading in Korea has detailed content about the interchange between the electronic bill of lading and the paper bill of lading explained in five paragraphs.

3.3.3 Suggestions of legislation in China

When studying the legislation of electronic bill of lading in Korea, I have to express my feelings about the maturity of the combination of e-commerce legislation and maritime law in South Korea. In terms of the law of electronic bills of lading alone, China is not yet in a position to "contrast", because there is no separate law of electronic bills of lading in China, and even in maritime law, China does not recognize the legal status of electronic bills of lading.

The law is a subject that needs to be studied comparatively. Therefore, before referring to Korea's electronic bill of lading law, the first thing to be determined is China should choose to be whether government-led, such as establishing a government-controlled registry and an application protocol controlled by the government, or market-oriented, such as encouraging business organizations to establish registry application agreements?

In terms of legislation, China should make a choice whether to establish a separate law of electronic bill of lading, as in Korea, or establish law of electronic bill of lading with other securities such as electronic instruments, electronic warehouse receipts, etc.

So before referring to the successful experience of Korean law, we need to assume that China has chosen the same mode of operation of electronic bill of lading as Korea.

One thing is sure that the development of a separated law of electronic bill of lading is beneficial to the development of electronic bill of lading, both in China and other regions.

Electronic bills of lading, as an electronic form of maritime transport document, should be interpreted to make it clear that they have the same effect and legal status as traditional bills of lading, instead of only recognize the validity of electronic contracts in contract law. Therefore, I suggest that in Chinese maritime law, the electronic bill of lading should be explained separately, and then the experience of Korea electronic bill of lading should be copied, and a special law of electronic bill of lading should be introduced.

The important problem of the survival of electronic bill of lading is that whether it can be able to flow like traditional bills of lading. Here, I want to elaborate the legal basis of the circulation of electronic bills of lading in China, as well as the legislative proposals after the combination of Korean law.

The first thing to do is to explicitly recognize the legal basis and circulation of the electronic bill of lading.

The Chinese Maritime Law uses the terms "document", "issue", "endorsement", "note", "transfer" and "delivery" for bills of lading, indicating that the term "bills of lading" in Chinese Maritime Law only refers to paper bills of lading, which creates great obstacles to the legal application of electronic bills of lading.

In the revision, Chain should use *the draft instrument on the Carriage of goods by sea* carried out by the United Nations International Trade Commission for reference, as well as the legislative experience of Australia's maritime law.

Combined with the content of this part, I think that we should learn from the experience of Korea electronic bill of lading law.

Korean electronic bill of lading can be formally circulated because the relevant laws of Korea explicitly give it legal status. Both the commercial law and after part of the presidential decree provide a legal basis for the flow of the electronic bill of lading.

In the revision of China's Maritime Law, I think that, the bill of lading is defined in specific rules as "a paper document or data message that proves that the contract for the carriage of goods by sea and the goods have been received or loaded by the carrier and that the carrier guarantees delivery of the goods," And the data message has the same legal effect as the paper document."

Then the terms such as "issue", "endorsement", "note", "transfer", "delivery", "endorsement" and etc., are redefined on the premise of the circulation of electronic bills of lading. This is a reference to the content of Korean law article 1, which is interpretation of terms in electronic bill of lading.

The maritime business field is closely connected with the international, the terms in the maritime law are produced in the long-term maritime practice, and is the deposition of international practice. I believe that it should be given new vitality rather than create new terms for electronic bills of lading.

There are also confirmation, attribution, false information and fraudulent forged communications and other related legal issues of electronic bills of lading, all of which are stipulated in item 20829 in South Korea's electronic bill of lading law

I believe that in the revision of Chinese maritime law, the premise should be protecting the interests of users, which coincides with the Korean law.

In addition, in revising the Maritime Law, it should be made clear that "maritime documents using data messages, the parties involved in the carriage of goods by sea shall carry out various acts related to the carriage of goods by sea through an "intermediary service provider" that provides a dedicated electronic data interchange platform ".

In Korean law, the intermediary service provider is a registered institution designated by the government, so it is quite convincing. In amendment, China Maritime Law also draws lessons from the above principles, and the government take the lead to solve the problem of the appointment of intermediary service providers, so that the potential users of electronic bills of lading will have more confidence in using electronic bills of lading. Therefore, the specific provisions of the so-called intermediary service providers should also be formulated by the State Council, which actually recognize the legal effect of electronic bills of lading, so that the legal basis for the circulation of electronic bills of lading is the same as traditional bills of lading, that means it is still a document of title. So it is not necessary to find a "transfer mechanism" as bolero does to replace the documents of title.⁴⁰

In Presidential Decree No. 20829 of Korea Commercial Law, the main content is the regulation of the registration institution of electronic bill of lading and the regulation of the circulation process of electronic bill of lading. In a word, it is a detailed separate law of bill of lading, among which, the provisions of the electronic bill of lading registration institutions are also caught my attention, which has a good enlightenment to the formulation of relevant laws in China.

But considering the situation of China, I think we can also choose the third-party platform with profit purpose to carry on the electronic bill of lading business, so I intend to merge this content into the later chapter to explain together.

This part summarizes the development process and legislative status of electronic bill of lading in South Korea. I sincerely hope that the Chinese legislative department can draw lessons from the advantages of Korean electronic bill of lading legislation and issue an electronic bill of lading law as soon as possible in accordance with the national conditions of China in order to make up for the lack of maritime law and the blank of the legislation of electronic bill of lading in China.

⁴⁰The Chinese maritime law is merely a framework for the electronic bill of lading. So we need to set up a single law as soon as possible.

Chapter IV Case of Electronic Bill of Lading in

China

4.1 On the evidentiary effect of Electronic Bill of Lading from "the first case of China's Electronic signature"

4.1.1 The details of case and proceedings⁴¹

In January 2004, Mr. Yang met the girl named Han. On August 27 of the same year, Han sent a text message to Mr. Yang, borrowing money from him for emergency response. The message said: "I need 5000 yuan, because I just went back to Beijing and did eye surgery, so I can't go out to draw money, please remit 5000 yuan to my card." Mr. Yang immediately sent the money to Han. More than a week later, Mr. Yang received another message from Han and lent her 6000 yuan. Because they communicated by messages, Mr. Yang did not ask for receipt for a loan. Since then, Han never mentioned the matter of borrowing money, and she wanted to borrow money from Mr. Yang again. Mr. Yang stepped up vigilance, urging Han to repay his money. But the repayment was turned down by Han, so he sued to Beijing Haidian District Court, asking Han to return his 11000 yuan, and he submitted two bank remittance deposit slips. But Ha said, The money was the arrears that Mr. Yang previously owed to her.

In the court trial, Mr. Yang also submitted to the court a PHILIPS mobile phone with the number of 1391166××××, which recorded some short message contents. The judge verified that the receiver of the message from Mr. Yang's phone is Han herself. And Han also admitted, she began to use this mobile phone number from July and August in last year.

The court judged that, in accordance with the provisions of the Electronic Signature Law of the people's Republic of China, which came into force on April 1, 2005, the reliability and authenticity of such method for maintaining the

⁴¹ Text message testifies to win a lawsuit, citing China's "electronic signature first case".

integrity of the content is examined to determine the of the mobile phone short message content as evidence after the court examined the reliability of the method for the generation, storage and transmission of data messages. The amount and time of remittance of the message is consistent with the amount and time of the remittance recorded in the personal business certificate of the Industrial and Commercial Bank of China which was sent by Mr. Yang, and the mobile phone short message also indicates the intention of Ms. Han wanting repayment back. The two pieces of evidence corroborate each other and confirm the fact that Ms. Han borrowed money from Mr. Yang. According to the relevant provisions of the rules of evidence, audio, video and data messages can be used as evidence, but when use data messages directly as evidence to determine the facts, there should be other documentary evidences to support. Accordingly, the mobile phone short message provided by Mr. Yang can be regarded as true and valid evidence, and the court accepted it and supported Mr. Yang's lawsuit to ask Ms. Han to repay the loan.

4.1.2 Case Analysis and consideration on the evidential Power of Electronic

Bill of Lading

In this case, we can see that there is no problem that electronic bill of lading is submitted as electronic evidence in China. The key is that the type of evidence remains to be confirmed.

In China, different types of evidence prove something different. Documentary evidence, material evidence and etc. can all be used separately as evidence to determine the fact of the case. Audiovisual materials need other evidence to support. For many years, scholars have continued to argue about that what kind of evidence electronic evidence belongs to. And they put forward "documentary evidence theory", "material evidence theory", "audio-visual material theory", "independent evidence theory" and so on successively.

I would try to explain my views under the current legal framework of electronic bill of lading in the light of the circumstances of the case.

In the so-called Electronic signature first case, the Court, despite invoking the Electronic signature Act, required the data message of the case to be

corroborated by other evidence in accordance with the rules of evidence before finally finding the facts of the case.

However, I believe that if the electronic bill of lading is presented as evidence in China, it should be distinguished from the above case, and it tends to be defined as documentary evidence, which can be determined separately for the following reasons

Firstly, the Electronic Signature Law explicitly affirms the evidentiary validity of data messages. Article 7 of the law is that "Data messages shall not be refused as evidence merely because they are generated, transmitted, received or stored by electronic, optical, magnetic or similar means." Therefore, the electronic bill of lading has credibility.

Secondly, Article 4 of the law provides that "data messages that are capable of tangible expression and may be referred to at any time shall be deemed as written form in accordance with the requirements of laws and regulations." Accordingly, it can be seen that electronic bills of lading can be considered as written form.

And Article 5 provide that "Data messages that meet the following requirements shall be deemed to meet the requirements of the original form prescribed by laws and regulations,"

1. Be able to effectively represent the contents and be readily available for reference
2. Reliable assurance that the content remains intact and unaltered from the time it is finally formed. However, the addition of endorsements and data exchange, storage and display of data messages does not affect the integrity of data messages.

This article stipulates that the data message meets the standard of the original form, that the electronic bill of lading will be kept in the rights registration centre of the electronic bill of lading system since its creation, and that its circulation will only change its role and will not undermine the integrity, and can also be transferred to the electronic bill of lading system at any time. Thus, the two criteria set forth in this article are met.

Finally, the Article 14 provide that a reliable electronic signature has the same legal effect as a handwritten signature or seal. This article affirms the legal effect of electronic signatures.

According to the above four stipulations, the electronic bill of lading can be regarded as a document signed by hand on the written original, and the electronic bill of lading does not have a special type of data message, such as audio-visual information, so I think it is documentary evidence.⁴²

In contrast, in the first case of electronic signature, the reason why Mr. Yang's text message cannot be considered as documentary evidence is that this is, according to my personal view, precisely a flaw in the Electronic Signature Law concerning electronic evidence. That is, when the parties do not agree to use a digital signature or data message, the legal effect of the data message is uncertain. In the absence of a reliable electronic signature, the credibility of the data message would be greatly compromised. The court cited the Supreme Court's "certain provisions in Civil Litigation", which reflected the conflict of current legislation. On the one hand, the legal effect of electronic data as evidence is recognized, on the one hand, electronic evidence has to be treated in the same way as audio-visual material under the old law.

The introduction of "Electronic Signature Law" confirmed the power of evidence of data message in China, but through the analysis of the first case of electronic signature, we can obviously feel that the status of electronic evidence in China is still very awkward. The court still needs to decide the case on the basis of the relevant judicial interpretation of the evidence in the civil proceedings.

The provisions of the Electronic Signature Act are too general and are effective only to the extent of electronic evidence within the scope of the Electronic signature. Although the current legal provisions can guarantee the legal status of electronic bills of lading as documentary evidence in China, in the long run, I think that the next step of evidence legislation should be inclined to the data without electronic signature, after all, in practice, this kind of data

⁴² Research on electronic evidence. 2006 doctoral dissertation, China university of political science and law.

message has occupied most of the market share of e-commerce in China, such as Alibaba and so on.

4.1.3 Provisions on the validity of evidence of Electronic Bills of Lading (international)

This thesis will introduce the provisions whether the data information included in the electronic bill of lading can act as the evidence in the Anglo-American Legal System and civil law system.

1) The countries of Anglo-American Legal System

The evidence law of countries of Anglo-American Legal System has two important evidence rules, namely Hearsay Evidence and Best Evidence. The two rules have great influence for admitting the evidence effect of electronic bill of lading.

Hearsay Evidence rule and its exception

Hearsay Evidence is the evidence of a statement that was made other than by a witness while testifying at the hearing in question and that is offered to prove the truth of the matter stated.

UK evidential scholar McComick thinks, "Hearsay Evidence is a statement made outside the court and used as evidence within the court, either orally or in writing, used to prove the truth of events stated in the statement.

According to Hearsay Evidence rules, the express or implied facts claim of the person other than a witness and facts claim on the written materials submitted to the court in the absence of witness testimony are the Hearsay Evidence, which cannot be adopted to prove the authenticity of facts claim. For this evidence, Cross-examination cannot be used, and its authenticity cannot be proved, generally, it is not adopted, that is, the use of Second-hand is eliminated.

The content of electronic bill of lading is stored in the electronic data interchange system in the form of an electronic medium, so there is no way to identify which part is the original evidence and people cannot use Cross-

examination for electronic system. The electronic document system is disposed and stored automatically by the computer and the computer cannot give evidence, so the written materials input by computer are only regarded as the Hearsay Evidence, therefore, the data and information stored in the computer, generally regarded as the Hearsay Evidence, are not adopted in the Anglo-American Legal System.

But electronic data are likely to be adopted as the evidence in the commerce field.

The UK Civil Evidence Act, 1965 stipulates that,⁴³

Firsthand Hearsay Evidence can be admissible. Firsthand Hearsay Evidence includes the documents made by the person mastering the firsthand evidence. According to the wide definition of document, the document includes the records stored in the computer and the data input by the computer.

Therefore, the data from anyone who is engaged in inputting electronic data or informed from the person who knows the situation personally can act as the evidence. But this Act also stipulates that a party invoking this provision must inform the other party and point out who is the Original Statement Maker according to the court demand so that the other party can require him to appear in court as a witness, otherwise, the above provision cannot be invoked.

We can see that English evidence act completely abandons the Hearsay Evidence rules and it just stipulates some exceptions to adapt to special circumstances.

According to Chapter 1, Article 1 of UK Civil Evidence Act,1995⁴⁴, in civil proceedings evidence shall not be excluded on the ground that it is hearsay.

This indicates the probability that Hearsay Evidence have been no limit to being accepted in civil proceedings.

⁴³ Civil Evidence Act,[1965],section2

⁴⁴ Civil Evidence Act,[1995],section1(1)

In the US laws, classical evidence of computerized records is influenced by the traditional Hearsay Evidence, exceptions that applicable to hearsay evidence rules of electronic data, mainly includes,

Business Records Exceptions.

Public Records Exceptions.

General Hearsay Rules Exceptions.

Among them, the most common one is Business Records Exceptions.

Electronic data "if it shows that,

1 Electronic computing equipment is standard equipment.

2 The clauses and subclauses are formed during the enterprise's daily business summary, or the reasonable time when the recorded events happen.

3 When the electronic data acts as the testimony of reason, if it meets law court concerning that the information sources, preparation methods and date to display its reliability and to accept it as evidence are the just claim, this data can be accepted as the evidence by the court.

The electronic bill of lading can, as a daily document of shipping company, satisfy the above requirements. Therefore, the court can recognize the evidence effect of the electronic bill of lading in accordance with the principle of the Business Records Exceptions.

Electronic bill of lading and Best Evidence Rules

In the Anglo-American law, Best Evidence Rules refers to only the original document can be adopted by the court as evidence. This rule is to avoid mistakes in copying the original text, so people should submit originals instead of copies or transcripts when they provide evidences. For the electronic evidence, the original form is the electronic data stored in the magnetic media of computer. It can not be identified and read and can be identified and read only it is displayed via the screen or input. And these data have become the copies or transcripts and can't be the original when they are displayed and printed. According this standard, electronic evidence can't meet the requirements of Best Evidence Rules.

We are aware firstly that British judges have proposed that "Best Evidence Rules have been out-of-date " as early as thirty years ago.

In the R v.Governor of Pentonville Prison ex POsman, grand justice Lord Lloyd point out that, original intention of Best Evidence Rules has already gone away from us. In his opinion, the purpose of establishment of Best Evidence Rules is to create a circumstance related to the safety of the original, and the copies of the original are difficult to obtain.

This opinion was reflected in the later legislation.

Chapter 9 of UK Civil Evidence Act 1995 stipulates that a document which is shown to form part of the records of a business may be received in evidence. Chapter 13 stipulates that "document" means anything in which information of any description is recorded.

The Chapter 9 Article 4 points out that "records" means records in whatever form.

From these rules, we make conclusions that it should not a problem that electronic bill of lading is used as the legal evidence in UK laws.

However, it is still possible that the court will not accept electronic bill of lading as the evidence. Chapter 9 Article 5 of this law points out the court may, having regard to the circumstances of the case, direct that all or any of the above provisions of this section do not apply in relation to a particular document or record, or description of documents or records.

The international organizations have also carried out a great deal of investigation and research, and proposed solutions and suggestions to the relevant problems. For example, Secretariat of the United Nations Commission on International Trade Law proposed the Recommendation on the Legal Value of Computer Records in 18th conference, which recommended that the governments review the legal rules involving the use of computer records as the lawsuit evidence so as to eliminate the unnecessary obstacles caused by the use of these rules, to ensure compliance with the technical development, and to provide appropriate ways for the court to evaluate the reliability of these records.

Article 5 of Model Law on Electronic Commerce adopted by the United Nations Commission on International Trade Law in 1996 stipulates that, Information shall not be denied legal effect, validity or enforceability solely on the grounds that it is in the form of a data message.

Article 8 gives the definition of the "original" that,

(1) Where the law requires information to be presented or retained in its original form, that requirement is met by a data message if:

(a) there exists a reliable assurance as to the integrity of the information from the time when it was first generated in its final form, as a data message or otherwise; and

(b) where it is required that information be presented, that information is capable of being displayed to the person to whom it is to be presented.

(2) Paragraph (1) applies whether the requirement therein is in the form of an obligation or whether the law simply provides consequences for the information not being presented or retained in its original form.

(3) For the purposes of subparagraph (a) of paragraph (1),

(a) the criteria for assessing integrity shall be whether the information has remained complete and unaltered, apart from the addition of any endorsement and any change which arises in the normal course of communication, storage and display; and

(b) the standard of reliability required shall be assessed in the light of the purpose for which the information was generated and in the light of all the relevant circumstances. Besides, the Article 9 of this law stipulates that nothing deny the admissibility of a data message in evidence on the sole ground that it is a data message, or, if it is the best evidence that the person adducing it could reasonably be expected to obtain, on the grounds that it is not in its original form.

2. The countries of civil law system

In the most countries of civil law system, there are no hearsay rules, and any evidence can be adopted, but the laws do not stipulate the electronic evidence.

Article 63 of Chinese civil procedure law stipulates 7 kinds of legal evidence.

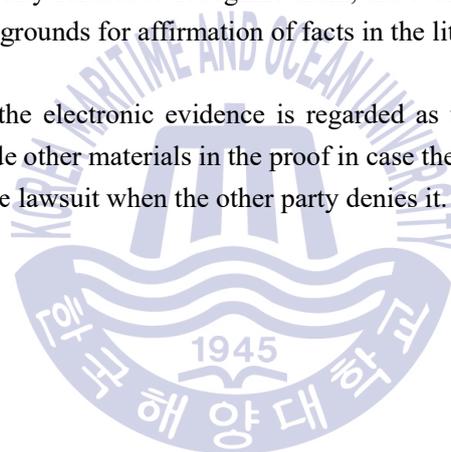
It doesn't mention the electronic documents, but if audio-visual material, upon amplified interpretation, also includes the electronic documents, because electronic evidence can be displayed as readable form on a computer screen.

Besides, Chinese civil procedure law also stipulates that copies can be submitted if it is difficult to submit the original.

It is thus obvious that there are no obstacles that the electronic evidence is adopted as the evidence in the rules of Chinese legal provisions on the adoption of evidence.

It is worthy of notice that, in the Opinions of the Supreme People's Court on Some Issues Concerning the Application of the Civil Procedure Law of the People's Republic of China, Article 78 stipulates that where the evidence materials are photocopies, if the provider refuses to submit originals or clues of originals, there is no other evidence that can confirm the said evidence materials, and the opposing party refuses to recognize them, the evidence materials shall not be taken as the grounds for affirmation of facts in the litigation.

Therefore, if the electronic evidence is regarded as the photocopies, the party should provide other materials in the proof in case the party can not give a rebuttal and lose the lawsuit when the other party denies it.



4.1.4 Only for the development of Electronic Bill of Lading, there are still several problems in the legislation of Electronic evidence in China.

1. The concept of electronic evidence is not explicitly stipulated in Chinese legislation, which leads to confusion in the use of the concept of electronic evidence in the relevant laws and regulations, such as the Electronic Signature Law and the regulations of Guangdong Province on Electronic transactions. The concepts of electronic signature, data message, electronic message, digital signature and electronic network are used respectively.
2. With regard to the legal nature of electronic evidence, according to the above analysis, in the relevant judicial interpretation in China, electronic evidence is classified as the type of audio-visual material. However, the Electronic Signature Law in China tends to identify the signed electronic evidence as documentary evidence. This confusion in legislation will inevitably lead to confusion in decisions.
3. With regard to the collection of evidence from electronic evidence, the rules of proof and authentication are far from perfect. In this respect, the main manifestation is lack of solutions to the admissibility of electronic evidence and the power of proof, and in the sporadic provisions, mostly are the evidentiary norms and lack of provisions to judge the power of proof of electronic evidence.

4.1.5 My legislative suggestions

In view of the above problems in the legislation of electronic evidence in China, combined with the electronic bill of lading as evidence, the author's suggestions are as follows:

First of all, the current legislation on electronic evidence in China is disorderly and inconsistent. Therefore, we should speed up the formulation of China's "Evidence Law" to unify the current confused concept of electronic evidence.

In the formulation of evidence law, it is suggested that in the general interpretation, the first thing is to make clear distinction between electronic

signatures, data messages, electronic messages, digital visa, electronic network and other related concepts.

Then the rules of admissibility of evidence and the rules of proof are formulated to lay the foundation for the legislation of electronic bill of lading.

Secondly, in the positioning of electronic evidence, I also think that electronic evidence should be treated as a separate type of evidence, although at present, from the point of view of electronic signature law, electronic bill of lading can be regarded as documentary evidence in China.⁴⁵ However, whether from the physical characteristics of electronic evidence, or the rapid development of electronic commerce, electronic evidence should be distinguished from the traditional evidence. In Professor BI YUQIAN's draft of the Chinese Evidence Law (proposal draft), electronic evidence has been listed as the eighth kind of evidence comparable to documentary evidence and physical evidence.

Finally, in the current law, the Electronic Signature Act and the Electronic Authentication Service Management do not deal with the preservation of electronic evidence, the investigation of evidence, the examination of evidence and other detailed rules. Only in the Electronic Authentication Service Management Measures are the confidentiality obligations of certification bodies established.

As the core organization of the electronic bill of lading organization in the future, the certification body will provide the main evidential support to the commercial disputes. The author thinks that in the future, we should revise the "Electronic Authentication Service Management Method", and stipulate the rules of electronic evidence preservation, evidence collection and proof power. For example, the preservation of media, the duration, the Depository's identification, and etc. should be regulated article by article.

Of course, how to regulate the electronic bill of lading as evidence ultimately depends on the formulation of the expected electronic bill of lading, so we can further clarify the specific details of the electronic bill of lading as evidence in the single law of electronic bill of lading.

⁴⁵ Documentary evidence refers to the ideological content expressed in words, symbols or pictures to prove the facts of the case evidence.

I think that combined the cases and analysis, and even the full text, for the development of electronic bills of lading, the timely formulation of slip law is of great benefit. Of course, the formulation of such rules is not urgent, because the current level of certification in China is limited, so it can't be recognized by the developed regions of the international community, and the time for special legislation is not yet ripe. Secondly, after the emergence of "Electronic signature Law", the electronic bill of lading has already obtained the basic legal protection.

Legislation, especially in connection with the development of science and technology, should guides practice, realizes the transcendence of practice and itself by transcending practice. Therefore, the necessary preparatory work should be made, not just the amendment of the Maritime Law. After all, the electronic bill of lading is essentially an electronic bill of lading which is not equal to traditional bills of lading or any other kind of shipping document.



4.2 Analysis on the Security of Electronic Bill of Lading caused by a case

4.2.1 Case introduction

The Chinese exporter received an electronic letter of credit issued by the issuing bank of the United States which was bound by the eUCP1.1 version. The letter of credit required invoices, bills of lading, warranties and other documents to submit electronic documents, but the certificate of origin issued by the Ministry of Commerce of China needed to be submitted with the original paper documents. The letter of credit stipulated that the date of shipment was May 3, and the negotiation period was valid for May 25. Since the beneficiary was worried about the difficulties of chartering and booking, a witness was issued with the consent of the parties concerned to amend the time of shipment of the L / C as follows: *latest shipment is extended to 7th may / 2011. All other terms and conditions remain unchanged*, but at the same time, the quantity of the goods reduced from the previous 100 tons to 80 tons. The exporter arranged the shipment of 100 tons of goods on May 7, as required by the contract, and prepared an electronic invoice on May 8 and sent the electronic bill of lading to the issuing bank together with the insurance policy and other documents. The original Certificate of Origin (showing the date of shipment is May 7) was sent directly to the issuing bank. The issuing bank system received electronic documents indicating the eUCP1.1, the place of submission of electronic records and the place of submission of paper documents from the beneficiary on 10 May.

However, on May 11, the issuing bank system was suddenly hacked by a hacker virus, resulting that electronic records can't be read out. At the request of the issuing bank, the beneficiary resubmitted the electronic document on 11 May, but the resubmission of the electronic document did not indicate that it was bound by the eUCP1.1 version and that the electronic record and the place of submission of the paper document were missing. On 27 May, the beneficiary submitted to the bank for negotiation the 100-ton bill of lading issued on May 7, which coincided with the shutdown of the bank on the same day, and the beneficiary resubmitted the document for negotiation on May 28. The issuing

bank refused to pay upon receipt and review of all documents on the grounds that the documents were overdue and that there were discrepancies between the documents.

4.2.2 Case analysis

In order to adapt to the extensive application of electronic commerce in the field of international trade, the International Chamber of Commerce, on the basis of the uniform Customs and practice for documentary credits (UCP500), launched the *Supplementary rules for Electronic presentation of documents under the uniform Customs and practice for documentary credits* in 2002 (eUCP1.0 version of the International Chamber of Commerce, then after the introduction of UCP600 and it was upgrade to the eUCP1.1 version) to timely made a special provision for the letter of credit in the business of electronic delivery of relevant issues .

The central issue in this case is that the eUCP1.1 surrender document stipulates that the submission place of electronic records must be indicated in the case of the submission of electronic records permitted by the eUCP letter of credit; submission place of electronic records in written form must be indicated in the case of submission of electronic records and paper documents allowed by the eUCP letter of credit; electronic records can be submitted separately, without having to be submitted at the same time; and if the eUCP letter of credit allows the submission of one or more electronic records, then it is the responsibility of the beneficiary to give notice of the completion of the delivery to the receiving bank. The notice may be made by electronic record or paper document, and the relevant eUCP letter of credit must be indicated. If the bank does not receive such notice from the beneficiary, it will be deemed to have failed to deliver the documents. The place where the electronic record is delivered means the electronic address, which refers to the IP address on the Internet and should also include the e-mail address. The form of presentation of documents in this rule is a mixture of paper documents and electronic records, so the place of delivery of the electronic record and the paper document shall be indicated respectively.

The issue of the use of paper records and electronic documents involved here is a loss suffered by the beneficiary as a result of an oversight of the place of submission and the existence of a lack of conformity between the time of the

presentation of the document. But it is worth noting that it is precisely because the issuing bank system suffered a network attack, resulting in a series of problems after the occurrence.⁴⁶

4.2.3 Network security and Electronic Bill of Lading

The electronic bill of lading brings endless convenience, but everything has two sides, the security of the computer network also poses a huge risk to the new thing. Hackers, viruses, and computer failures always give the prerequisite for the development of electronic bill of lading the security causes great harm.

The security of electronic bill of lading should be analyzed from two aspects, technical aspect and legal aspect. But these two aspects are mutually integrated and permeated in essence. The defect of the technology depends on the law to remedy, and the legislation depends on the support of the technology.

We can see that the electronic documents including the electronic bill of lading have their congenital deficiencies that:

1. They lack physical form. They are easily deleted or modified if the system is misconducted or intentionally damaged;
2. The modified electronic documents will not leave a distinct mark, but it is easily perceived if the paper documents have changed;
3. Electronic documents can be used with fraud, for example, modification of private key and fake electronic documents to take delivery of the goods cause the loss of true consignee.
4. Electronic documents will be threatened by the network because they are operated in the network.

The business of electronic bill of lading operated on the Internet or in the private network will meet many network security threats. At present, the main hidden dangers of E-commerce as follows:

1. Interrupting the system will damage the reliability of the system

⁴⁶ EUCP, in international trade settlement, documentary letter of credit is the most widely used form of settlement. The International Chamber of credit (UCP600), established by the International Chamber of Commerce (ICC), is an international rule that all letters of credit are complied with at present. With the development of e-commerce, ICC made "EUCP", which came into force in April 1, 2002, and made special provisions for the related issues of E / C in L / C business.

Network failures, operational errors, application errors, hardware failures, system software errors, and computer viruses can cause the system not to work normally, so we should control and prevent these potential threats to ensure trade data valid at the certain time and the certain place.

2. System penetration, imitation of legal users or breach of authority, will also damage the reliability of the system

The unauthorized person attacks the Authenticity via certain means and counterfeits the legal users to enter the enterprise internal system to falsify the documents, usurp the private information, and use the resources illegally. They generally use the way that Masquetade, exploiting the weak link of the system (such as avoiding the detection and control), and collecting information (such as password). Breach of authority is that the person who is authorized to enter the system to do something do other things without authorization in the system. Outwardly, this is the problem that misuse or abuse of the system interior, but this treat connects with the external penetration. A attacker can access an unauthorized user account by guessing the password to reveal the weak link and gain the authorized right to access system, whereupon, the security of the system is imperiled seriously.

3. Wiretapping the information will damage the confidentiality of data

The electronic bill of lading is a means of trade, whose information represents the business secret of the enterprise. The traditional paper trade, by mailing packaged letters or sending business message via reliable communication channels, achieves the purpose of confidentiality. But the electronic bill of lading is established in the open network circumstances, so the maintenance of the business secret is the important guarantee of the wide application of electronic bill of lading. Therefore, we should prevent the information disclosure by wiretapping, electromagnetic leakage and other means, or analyze the business outflow to obtain the valuable business information and all the actions damaging the confidentiality of the system.

4. Falsifying the information will broke the integrity of data

The E-commerce will also bring the problem to maintain the integrity and unity of commercial information of all trade parties. Accidental error or fraudulent conduct of data input can cause the difference of information among trade parties. Besides, the loss of information, message repeat, or order difference in information transfer during the data transmission will also cause the difference of information among trade parties. The integrity of information among trade parties will influence the strategies of transaction and management of all trade parties, and the maintenance of the integrity of the information of all trade parties is the basis of E-commerce application. Therefore, we should prevent the random creation, modification and deletion of information, prevent the loss and repeat of information and ensure the unity of the transmission order of information.

5. Forging the information will damage the authenticity of data

E-commerce may directly connect with the commercial transaction between both trade parties, so the problem of confirmation way that the trade parties who want to trade are the desired trade parties is the key to ensure the smooth progress of E-commerce. In traditional paper trade, both trade parties sign their own signatures or seal on the trade contracts, agreements or documents to identify trading partners, ensure the reliability of contracts, agreements or documents and prevent the disavowal actions. It is often said that the "written in black ink on white paper". In the paperless E-commerce, it is impossible to identify the trade parties by handwritten signature and seal. Therefore, we should provide reliable identification for the individuals, enterprises or countries involved in trading during the transmission of trading information.

4.2.4 Legislation on network security in countries all around the world (to name just a few)

Brazil

In November 2012 when the Senate of the Brazilian Congress deliberated the new Criminal Code for the first time, it listed Internet Crime in the scope of criminal offense. The new law provides detailed descriptions and convictions for computer hacking, password theft and illegal blocking of websites, with sentences ranging from three months to one year in prison for illegally hacking into another person's computer; The illegal theft of private information, commercial and corporate secrets through remote control computers can result in six to two years' imprisonment¹.

Brazil has done so because cybercrime has been rampant in recent years. According to the Brazil Banking Association statistics, in 2011 the illegal use of bank network service system implementation of the criminal activities increased by 60% over the previous year, leading to the bank and the customer economic losses amounting to 1 billion 500 million reais (\$0.5 1 reais); The report also shows that cybercrime cost Brazil BRL 15.9 billion in 2012.

In addition, hackers have hacked the website of the Brazilian presidential palace twice since 2011, and have "captured" the Senate, the Ministry of defence, the National Geographic Statistics Office, the Central Bank and other institutions. Celebrity privacy has also been violated, such as hacking into the computers of famous Brazilian actress Carolina Dickman, stealing personal information and exposing private photographs.

Brazilian experts believe that the lack of specific laws previously restricted the fight against cybercrime and that some judges could not be convicted and sentenced when processing cases of cybercrime. At that moment, the Brazilian Congress is not only adding to the Criminal Code the fight against cybercrime, but is also stepping up its deliberations on the basic Law on Internet Administration submitted by the Government to define quality of services,

development goals and basic principles of the Internet more clearly.⁴⁷

Japan

Japan has faced the same problem. When there is no specific law to combat cybercrime, suspects such as those who produce and distribute computer viruses can only be convicted of "violating the copyright Law" or "damaging objects" after being arrested.

In this regard, the plenary session of the Japanese Senate in June 2011 passed amendments to the Criminal Code, making the production of viruses as a crime. The law entered into force on 14 July 2011. The provision- crime of making virus- of this law provides that the act of producing or supplying a virus for the purpose of maliciously infecting a computer of another person shall be punished by imprisonment of not more than three years or a fine of up to 500000 yen; The act of "acquiring" or "storing" a virus for the purpose of maliciously infecting another person's computer is punished by imprisonment for not more than two years or a fine of not more than 300000 yen.

The United States

As a part of the Comprehensive Appropriation Act of 2016, the 2015 cybersecurity law of the United States has been formally passed on December 18, 2015, which has become a relatively complete law regulating the sharing of information on network security in the United States. For the first time, the scope of network security information sharing includes: "Cyber Threat Indicator" (CTI) and "defensive measures" focus on participants, modes of sharing, implementation and review of supervision procedures, organization, liability exemption and privacy protection, etc. And by amending the relevant contents of the 2002 Homeland Security Act, The United States standardized the national network security, the evaluation of federal cyber security personnel, and other network matter

⁴⁷, New rules against cyber crime in Brazil [ONLINE]
<http://news.163.com/13/0401/23/8RDNDGF200014JB6.html>

4.2.5 Legislation and problems related to cybercrime and network security in China

Before 2016, China's current legal system for the regulation of cybercrime is dominated by the criminal code and the *decision of the standing Committee of the National People's Congress on the maintenance of Internet security*.

Chapter 6, Section I of Criminal code "Crime of disturbing public order" under "offences against public order": one of article 286 (offence of refusing to comply with the obligation to manage information network security), one of article 287 (crime of illegal use of information network)⁴⁸, one of article 287 (crime of aiding information network criminal activity)⁴⁹. Starting from the regulation of the network service provider, the participants of the network activity and the assistant of the network activity, the regulation of the network tool crime and the network object crime, and the regulation of the practice behavior and the helping behavior of the network crime, and Chapter 6 Article 285 (crime of illegally intruding into computer information system) and article 286 (crime of destroying computer information system) are related to each other and become the important legal basis for regulating computer and network crime.

However, for the characteristics of network crime, such as high frequency, many means, strong concealment, wide range of victimization and large subject matter involved, the former is scattered and thin, while the latter is general and

⁴⁸Article 286 Whoever, in violation of State regulations, cancels, alters, increases or jams the functions of the computer information system, thereby making it impossible for the system to operate normally, if the consequences are serious, shall be sentenced to fixed-term imprisonment of not more than five years or criminal detention; if the consequences are especially serious, he shall be sentenced to fixed-term imprisonment of not less than five years.

Whoever, in violation of State regulations, cancels, alters or increases the data stored in or handled or transmitted by the computer information system or its application program, if the consequences are serious, shall be punished in accordance with the provisions of the preceding paragraph.

Whoever intentionally creates or spreads destructive programs such as the computer viruses, thus affecting the normal operation of the computer system, if the consequences are serious, shall be punished in accordance with the provisions of the first paragraph.

⁴⁹Article 287

Whoever uses computers to commit the crimes such as financial fraud, theft, embezzlement, misappropriation of public funds and theft of State secrets shall be convicted and punished in accordance with the relevant provisions of this Law.

vague. Ideally, the specific law to restrict the specific behavior, the legislative level has not yet been achieved.

On November 7, 2016, the 24th meeting of the standing Committee of the Twelfth National people's Congress adopted the Cybersecurity Law. As the first basic law in China to comprehensively regulate the management of cyberspace security, the Law on Network Security is an important milestone in the construction of the legal system of cyberspace in China.

The New Network Security Law has 7 chapters 79 articles on defining the scope of critical information infrastructure, strengthening the management of personal information protection, and punishing foreign organizations and individuals who attack and destroy critical information infrastructure, as well as punishing network fraud and other new network illegal criminal activities.

According to the regulations, illegal acquisition or sale of citizens' personal information, such as property information, communication content and trace track information and other bad acts should be bear legal responsibility by the corresponding actors or organizations. When personal information is leaked, the obligee may request the network operator to delete the fraudulent personal information in time by reporting. In addition, malicious dissemination of rumors, the post cost damage to the reputation of others are included in the management.

The Cyber Security Law clearly stipulates that illegal acquisition, sale or provision of more than 50 articles of sensitive personal information shall constitute a crime and shall be sentenced to fixed-term imprisonment of not more than three years or criminal detention. In the case of "cyber manhunt", the law makes clear for the first time that the perpetrator makes public personal information without the consent of the obligee if the act is serious, the offender shall be sentenced to fixed-term imprisonment of not more than three years or criminal detention.

4.2.6 The Legislative consideration of China's Network Security Law referring to the key system in Korea's Network Security Law

1) A brief introduction to Korea's Network Security Law

Due to I am studying in Korea, I studied the legal system of network security in Korea especially.

First of all, in the system, Korea has established a wide range of relevant specialized laws and comprehensive legislation, including network security management, protection of key information infrastructure, information and communication network stability, data security, etc. and it emphasizes the network security legal system.

Korea's National regulations on Network Security Management establishes the basic management, organization and operation mechanism of Korea's network security management in the form of special legal documents, clearly defining the responsibilities of the President's National Security Office, the National Cyber Security Center, and other institutions for the protection of network security. It also provides for the organization of national network security strategy meetings, the formulation of network security countermeasures, the strengthening of network crisis response training, and the establishment of security control centers.

Furthermore, in order to focus on strengthening the protection of "critical information infrastructure" known as main Information and Communications Infrastructure under Korean law, Korea has specifically enacted the Information and Communication Infrastructure Protection Act and its implementing rules. The main information and communication infrastructure protection system, the responsibility of the information and communication infrastructure protection committee, the designation and vulnerability analysis of the main information and communication infrastructure, the response to violations, technical support and civil cooperation were clarified.

In terms of personal information, South Korea's personal Information Protection Law, Information and Communication Network Utilization

Promotion and Information Protection Law, location Information Protection and other related law, Credit Information Utilization and Protection Law all stipulate the aspect of general personal information protection, personal information protection in information communication field, financial field information management and other aspects.

With regard to the designation of communication infrastructure, the Korean Law on the Protection of Information and Communication Infrastructure defines the meaning of "information and communication infrastructure", including two aspects. The first is electronic control and management systems related to national security, administration, national defence, public security, finance, communications, transportation and energy, and the second is information and communication networks. On this basis, the information and communication infrastructure is designated as the primary ICT infrastructure by the central administration within its mandate. The following factors shall be taken into account in the designation:

- (1) the importance to the State and society of the services performed by the relevant information and communications infrastructure management bodies;
- (2) the dependence of facilities management agencies on the implementation of information and communications infrastructure services;
- (3) Connectivity with other information and communications infrastructure;
- (4) The extent and degree of the harm caused to national security, economy and society by an incident of infringement;
- (5) The possibility of violations and the ease of recovery.

In addition, the relevant laws of South Korea also provide certification for the information sharing system, the security certification system in the guarantee of network stability, the scope of certification, the standard and validity period of certification, the revocation of certification review bodies and the cross-border flow of information, making it a set of detailed and advanced legislation.

2) Thoughts on legislation in China

Network security is an international problem. With the development of new trade, such as electronic bill of lading, the thinking of legislation also needs to keep pace with the times. With the introduction of China's Network Security Law, China has set up a framework on the issue of network security from scratch, but it lacks some rules and regulations, which can't better protect the security of the

network world in practice. In contrast, the entire set of laws and regulations on network security in South Korea were issued earlier and in more detail. In view of the characteristics of legal comparison, the following will elaborate on several aspects in order to use South Korea's legislative experience to enrich the legislative content of China's Network Security Law or formulate related laws.

(1) The definition of "critical information infrastructure" in Article 31 of China's Cybersecurity Law is characterized in a manner that involves the effects of industry and harm. That is, "public communications and information services, energy, transport, water conservancy, finance, public services, e-government and other important industries and fields, as well as other industries that once was damaged, lost functionality or data disclosure, it will seriously endanger national security, the national economy and the people's livelihood, and the public interest".

However, "the specific scope of the key information infrastructure and the measures for security protection shall be formulated by the State Council."

Then the next step is to formulate the "Network Security Law" related to key information infrastructure management and security protection supporting provisions, and clear the specific scope of key information infrastructure will be an important part of the provisions.

Korea's protection-related systems, such as designation of major information and communications infrastructure, will provide guidance on how to determine the specific scope of the key information infrastructure in China:

1. Identify the factors that need to be considered in the identification of key information infrastructure. In determining which information and communication infrastructure could be included in the scope of the critical information infrastructure, the importance of the information and communication infrastructure to the State and society, the extent of damage to national security, economy and society when the facilities are endangered by cyberattacks, and the recoverability of the hazards are taken into account. Similarly, before China formulates relevant laws, it can take into account its national conditions, such as the emergence of Alibaba and Taobao in the context of the current e-commerce development. On the one hand, the rise of Alibaba and Taobao has generated enormous economic benefits. On the other hand, due to the information involved in is huge, the information of dealer and user often

are stolen. I suggest that similar information should be included in the list of key information which is not only in line with the definition of key information in article 31 of the Cybersecurity Act, but also, in line with the most current concerns of the public.

2. Develop and publish an inventory of key information infrastructures. The key information infrastructure identified or withdrawn by Korea will be published in an official document in the form of an inventory. The inventory catalogue contains the name of the specific key information infrastructure, the management company or other organization to which it belongs, the competent authority involved, the reasons for identification or revocation, and adjusts the contents of the inventory in a timely manner according to the circumstances of the identification or revocation. In contrast, China can follow the example.

2) Articles 17 and 26 of China's Law on Network Security provide that relevant enterprises and institutions shall be encouraged to carry out security services such as network security certification, and that the implementation of network security certification shall comply with relevant state regulations. Article 23 requires the safety certification or testing of network critical equipment and special products for network security.

At present, the products and equipment of related industries and fields in China already have the relevant safety certification and inspection system, but how to establish and coordinate a more efficient authentication mechanism of network security under the framework of the "Network Security Law" on the basis of the existing system still needs to be determined by supporting regulations.

South Korea's ISMS certification system will have some reference significance for some basic problems that should be clearly defined in China's network security authentication system.

The first is to determine the basic issues of network security authentication. Korean law clearly makes the specific scope of authentication object brought into ISMS certification system. It stipulates that the certification work is in the charge of information and communications authorities- the future of the Ministry of Science, which establishes a unified certification standards, a clear period of validity of the certification.

The second is to determine the scope of the network security certification agencies, institutional responsibilities, specific matters of institutional review. Korea is designated by the competent information and communications authority to carry out ISMS certification, and in order to ensure the effective and smooth review of certification matters, it also designated the relevant bodies to be responsible for the review.

The third is to promote mutual recognition of certification results. South Korea has obtained the international information protection standard certification or the information protection measures in compliance with the provisions of enterprises that may be exempted from further certification.

The fourth is that we should strengthen management after the incident. South Korea attaches importance to the management of enterprises that have been certified, makes clear certification bodies that assume the relevant management responsibilities, and the certification body will be required to report the management situation to the competent authorities. For those certified enterprises that do not meet the national standards and violate the relevant administrative requirements, the withdrawal mechanism for revoking the certification shall be established.

3) Article 37 of the Network Security Law establishes the requirements for the internal storage of personal information and important data in the critical information infrastructure. The safety assessment shall be carried out in accordance with the measures formulated by the State Network and Communications Department in conjunction with the relevant departments under the State Council.

At present, China's rules on cross-border provision of data are relatively simple, and the above requirements of the "cyber security law" need to be further refined.

The basic system established by Korea in this respect will also provide reference legislative experience for China to provide relevant requirements for improving cross-border data in the future:

The first is to distinguish the different types of data, to apply different method to different classified types. China can establish different management systems for different data, such as personal information, financial data and related important data, and clarify the requirements and regulations for the cross-border provision or transfer of relevant data.

The second is that for the cross-border provision of personal information, South Korea pays more attention to the protection of the right of informed consent of the information subject, but there are exceptions without consent. In this respect, China should also carry out this humanized legislative policy to give more convenience to the parties.

The third is to clarify the definition of "important data". Korea defines important data in the form of industry domain description and enumeration of importance, covering industry, economy, science and technology, and national security. At the same time, the cross-border movement of such data is explicitly prohibited. In this regard, China should legislate on fire protection, clarify the concept of important data, draw up a complete list, and specify in detail such as high and new technology, national defense and security matters, etc.



Chapter V Suggestions of Regulation for China

Electronic Bill of Lading

In the course of this paper's creation, I have already found some legislative issues, then I put forward my own legislative suggestions.

Now I will repeat here to re-express my point of view on the main issues of electronic bills of lading in China. The problem here is that I think it is more important and needs to be resolved early.

5.1 Suggestions for amending China's Maritime Law

As mentioned above, the bill of lading referred to in Chinese maritime law is only a written bill of lading, barring electronic bill of lading, so that electronic bill of lading have not yet established its legality in Chinese law.

Therefore, I believe that in order to establish and improve the development prospects of electronic bill of lading in China, we must take this as the starting point. Here, I try to add the county official content of the electronic bill of lading in China's maritime law.

Article 71 in the maritime law of China,

“A bill of lading is a document which serves as an evidence of the contract of carriage of goods by sea and the taking over or loading of the goods by the carrier, and based on which the carrier undertakes to deliver the goods against surrendering the same.”

My suggestion is,

"a paper document or data message that proves that the contract for the carriage of goods by sea and the goods have been received or loaded by the carrier and that the carrier guarantees delivery of the goods," And the data message has the same legal effect as the paper document.”

This can gives electronic bill of lading the same legal status as traditional

bill of lading.

And then, it should be made clear that,

"Maritime documents using data messages, the parties involved in the carriage of goods by sea shall carry out various acts related to the carriage of goods by sea through an "intermediary service provider" that provides a dedicated electronic data interchange platform ".

Then, the relevant provisions may be added after Article 71 of the Chinese Maritime Law,

“Which stipulate that with the consent of the shipper and the carrier, the contents of the written bill of lading may be recorded in the electronic bill of lading, and the issuance, exclusive control or transfer of the electronic bill of lading shall have the same effect as the issuance, possession or transfer of a straight bill of lading.”

In addition, add a few entries to explain some of the legal problems with electronic bill of lading.

1. The legal application of electronic bill of lading.

International conventions or domestic laws regulating traditional bills of lading also apply to electronic bills of lading.

2. The written form of an electronic bill of lading.

Electronic data stored in computer memory that can be displayed in human language on a computer screen, or printed by a computer, shall be regarded as written.

3. The terms and conditions of the transport contract.

When using an electronic bill of lading, it is only necessary to convert the specific terms of the transport contract into electronic data for transmission.

4. The password of the electronic bill of lading.

Each holder holds a different password, which may not be transferred.

Each holder and carrier shall maintain the security of their respective passwords.

5. Delivery of goods.

The carrier shall notify the holder of the relevant password of the expected place and date of delivery of the goods and the holder shall designate the consignee.

6. Option to require the issuance of a written bill of lading.

At any time prior to delivery, the password holder shall have the option to request a written bill of lading from the carrier and the carrier shall have the option to issue a written bill of lading to the holder.

7. Electronic bill of lading should contain the contents recorded in the traditional bill of lading.⁵⁰

The signature shall be signed by an electronic signature in accordance with the provisions of the electronic bill of lading act

The above is my suggestion on the legislation of electronic bill of lading in the maritime law. I will then formulate a special law to improve the use of electronic bill of lading in the process of some specific problems

⁵⁰ MARITIME CODE OF PRC, Article 73,

A bill of lading shall contain the following particulars:

- (1) Description of the goods, mark, number of packages or pieces, weight or quantity, and a statement, if applicable, as to the dangerous nature of the goods;
- (2) Name and principal place of business of the carrier;
- (3) Name of the ship;
- (4) Name of the shipper;
- (5) Name of the consignee;
- (6) Port of loading and the date on which the goods were taken over by the carrier at the port of loading;
- (7) Port of discharge;
- (8) Place where the goods were taken over and the place where the goods are to be delivered in case of a multimodal transport bill of lading;
- (9) Date and place of issue of the bill of lading and the number of originals issued;
- (10) Payment of freight;
- (11) Signature of the carrier or of a person acting on his behalf.

5.2 China Electronic Bill of Lading law (draft)

In order to better operate the electronic bill of lading, I think China can follow the special law of Korea on electronic bill of lading. The following is the legislation and corresponding reasons and ideas that I think are feasible

Article 1 The purpose of this law is to provide the contents of electronic bill of lading in the maritime law, and the specific issues to make a provision

This article, as same as Korea's electronic bill of lading legislation, is used to illustrate the purpose of this regulation

Article 2 This law shall apply to the use of electronic bill of lading within the territory of the People's Republic of China

This article is used to illustrate the scope of the law

Article 3 The interpretation of some of the terms used in this law

This article mainly explains the concept of electronic bill of lading, registration organ of electronic bill of lading, third-party operator of electronic bill of lading and electronic signature.

Among them, the concept of electronic bill of lading should be noted to be derived from China's maritime law, electronic signature is applicable to electronic signature law

Article 4 The ability and requirements of registered institutions and third party platforms

1. The first requirement is the legal person
2. Technical ability:
Technical personnel who meet the relevant national standards
3. Fiscal capacity
With a net asset of more than 10 million yuan
Have the ability of insurance compensation
4. Having the relevant equipment for the operation of electronic bill of lading,
And the equipment meets the national standards

This article sets out the conditions for the designation of a registered

institution. The legal person, technical capability, financial capacity, facilities and equipment of the registered institution are specified, to ensure the safety and legality of the electronic bill of lading operation

Article 5 The specified steps of a registered institution

1. The registration authority should apply first and then be appointed by the relevant department of the state council after reviewing the relevant capabilities.
2. Corporate Agreement
3. Documents supporting the identification of technical capacity, financial capacity, facilities and equipment, operational guidelines and other necessary matters in Article 4
4. Business plan
5. When signing the contract, it meets the relevant requirements of Chinese contract law.

In this article, It is assumed that China will choose the electronic bill of lading operation mode similar to that of South Korea. The advantages and disadvantages of this model have been described earlier, therefore, the third party model will be tried later.

Article 6 Third party operator of electronic bill of lading

1. Third-party operators referred to in this law refers to the electronic bill of lading for both parties in the process of operating a virtual management place, trading rules, dealmakers, information release and other services, A legal or non-legal person organization that enables both parties to conduct transactions independently.
- 2 Third party platforms shall handle business registration according to law.
- 3 Where a third party operator needs to obtain relevant administrative license for conducting business activities, it shall obtain administrative license.
- 4 The relevant capabilities and conditions of the third party operators shall be equivalent to the designated institution.
- 5 It shall comply with other provisions of the e-commerce law concerning operators of e-commerce platforms

In this article, It is assumed that Chinese legislation to regulates bolero or other third-party operators. Because I have always advocated the use of both designated agencies and third-party platforms. Therefore, the third party platform needs to be separately regulated.

China's draft e-commerce law is expected to be introduced before the e-bill of lading law, so the contents of the operator of the electronic bill of lading should also comply with the relevant provisions of the e-commerce law.

Article 7 The issue of electronic bill of lading

The carrier shall, at the time of issuing the electronic bill of lading, submit an electronic application for registration of the following information. The carrier's recognized electronic signature and the consignor's consent to the issuance of the electronic bill of lading (including electronic documents) are appended to the document and sent to the registry (third party platform)

1. Information as set out in article 73 of the maritime law of China
2. Signature of carrier or agent expressed electronically, According to the electronic signature law
3. Where a third party platform is used, it is required to refer to the provisions of Rotterdam rules on the issuance of electronic bill of lading

The use of electronic bills of lading is governed by different international rules, laws can be enforced, or can be added directly to a rule.

Article 8 Transfer of electronic bill of lading

When the owner of an electronic bill of lading transfers an electronic bill of lading, he shall make an electronic document recording the meaning of the endorsement and apply, together with the electronic bill of lading, to send it to the transferee

The transfer request electronic document for item 1 should contain the following lines of information.

Information representing the same state of an electronic bill of lading

Assignee information

Recognized electronic signature of the assignee

The registration institution receiving the application for assignment No. 1 shall record the contents of the transfer containing the information in line 2 to the electronic register and send it to the transferee in a timely manner.

The registered institution shall notify the assignor in a timely manner by electronic document when transmitting the third item to assignee.

The assignee of the assigned electronic bill of lading shall register with the information of the name, ID number, business license number, address and other information.

As for the transfer of electronic bill of lading, I refer to Korea's electronic bill of lading law. The provisions of this law on the transfer process are detailed and feasible, and fully applicable to China. On issues of third-party platforms, such as bolero, just follow their rules.

Article 9 changes in the contents of Electronic Bills of Lading

When the owner of an electronic bill of lading changes the contents of the electronic bill of lading, he shall apply to the registration institution for change in the form of an electronic document.

The registry shall notify the carrier of the application for change of item 1 by electronic document

The carrier shall notify the Registrar's consent in the form of an electronic document upon receipt of the second notice

The registration institution shall notify the owner of the electronic bill of lading in the form of electronic documents in time when receiving the notice of consent or not from the carrier. At this point, if the carrier agrees to a change in the contents of the record, notice shall be given after the change in the electronic registration of the bookkeeping.

This article also borrows from Korea's electronic bill of lading law. At present, China only has the modification provisions of the traditional bill of lading. And the traditional bill of lading is fundamentally different from the electronic bill of lading. So when you modify it, you can't treat it the same way. Through the study of Korea's electronic bill of lading law, I found that this rule is also detailed and reasonable, the same applies to China, as well as other countries that want to develop electronic bill of lading and separate legislation on electronic bill of lading.

Article 10 Replacement of negotiable transport document or electronic bill of lading

1. If a negotiable transport document has been issued and the carrier and the holder agree to replace that document by an electronic bill of lading:

(a) The holder shall surrender the negotiable transport document or all of them if more than one has been issued, to the carrier;

(b) The carrier shall issue to the holder an electronic bill of lading that includes a statement that it replaces the negotiable transport document;

(c) The negotiable transport document ceases thereafter to have any effect or validity.

2. If an electronic bill of lading has been issued and the carrier and the holder agree to replace that electronic bill of lading by a negotiable transport document:

(a) The carrier shall issue to the holder, in place of the electronic bill of lading, a negotiable transport document that includes a statement that it replaces the electronic bill of lading; and

(b) The electronic bill of lading ceases thereafter to have any effect or validity.

This article refers to the provisions of Rotterdam rules on electronic transport records. For the use of electronic bill of lading and other electronic transport records, Rotterdam rules are the most advanced and representative legislation. China has not signed the rules for some reason. But on the conversion of electronic bill of lading and traditional paper bill of lading, the rules of Rotterdam are representative.

Similarly, Korea's electronic bill of lading law has similar provisions. It can be seen that this need is very common in the use of electronic bill of lading. I think that's one of the key parts of my legislation.

Article 11 Regulations on the technology use by intermediate service providers

The transmission of data messages shall be in accordance with the 1987 uniform rules of Conduct for Electronic Transmission of Trade Data Interchange, Relevant Standards of the United Nations rules for Electronic Data Interchange in Administration, Commerce and Transport.

In doing so, the technology involved in the use of electronic bill of lading can be specified.



Chapter VI Conclusion

The electronic bill of lading, from the birth to the present, exists only a few decades time, but develops rapidly by virtue of its own unique advantages. It brings great influence and impact on the traditional bill of lading system that has thousands of years history, but also brings new vigor and vitality to the traditional shipping business and international trade.

Since the 1980s, the international community has been striving to establish and improve the system of electronic bill of lading, such as the *CMI Rules on Electronic Bills of Lading* formulated by the Comité Maritime International, Model Law on Electronic Commerce formulated by the United Nations Commission on International Trade Law. Many relevant legislations about the international integration of the electronic bill of lading were issued and countries in the world also formulated relevant laws and regulations based on these international laws. Meanwhile, the electronic bill of lading has also achieved a series of successes in business practice, such as the SeaDocs and Bolero.

This thesis analyzes the functions of the electronic bill of lading from the legal view.

This thesis thinks that the electronic bill of lading has functions of the certificate and the document of title of maritime transportation contract of the traditional bill of lading and it is safer and quicker than the traditional bill of lading from its form and speed of transfer, thus affirms the effect of electronic bill of lading.

However, there are many problems in the use process of electronic bill of lading. Current laws can't solve them or are conflicting with the system of traditional electronic bill of lading.

At present, International legislations about the electronic bill of lading are in the primary stage and only a few countries formulated the laws of the electronic bill of lading. The legal status of electronic bill of lading has not established yet. In practice, the electronic bill of lading is mostly applied via the agreement between the parties, meanwhile, there are some technical obstacles,

which are not conducive to the extensive application of electronic bill of lading in the international community.

Therefore, the fundamental solution to the problem of electronic bill of lading is to build the international uniform legislation, to establish a set of binding multilateral legal mechanism, and to unite the knowledge and operation procedures of electronic bill of lading in the world. Meanwhile, countries should adjust their own national laws to clear the obstacles for the application of the electronic bill of lading in the world.

This thesis thinks that the application range of the electronic bill of lading will wider and wider and its development prospect will be bright with the further development of the technology and the further improvement of relevant laws and regulations.

As an overseas student, studying in a more developed country in shipping field, I feel a little great gap between China and Korea in the development of the electronic bill of lading.

For China, in addition to the Electronic Signatures Law issued in 2005 refers to the electronic bill of lading, the Maritime Law and other laws hardly have direct regulations and some indirect regulations cannot meet the requirements of the electronic bill of lading totally.

As a great shipping country, China should refer to and learn from foreign advanced legislation precedents, absorb the advanced theoretical research results, and consider the development trend of international maritime legislation. According to the basic legislation principle of scientificity, timeliness and unity of legal system, China should modify the relevant content of the Maritime Law and issue other corresponding laws to build a good legal system for the smooth application of electronic bill of lading and to contribute own strength for the international legislation of electronic bill of lading.

As I prepared to finish this thesis, I remembered a sentence I had read before, "A conclusion is the place where you got tired of thinking."

The conclusion in this thesis is not only a terminal point, but a new starting

point.

Because the author's level is limited, the understanding and analysis in some problems are still shallow, so I should pay more attention to and study the development of the electronic bill of lading in the future study and work.

Besides, the author sincerely hopes that all countries in the world draw on useful experience and discard old ideas to make progress together and promote the development of world shipping industry under the background of new shipping mode represented by the electronic bill of lading.



Chapter VII References

Books

XIANG ZAISHENG, [2007]. *Study on Legal Problems of Electronic Bill of Lading*. China FANGZHENG publishing house.

YANG JIANZHENG, [2014]. *Foundation and application of E-commerce*. Publishing house of XIDIAN University.

YANG LIANGYI, [2001]. *Bill of lading and its shipping documents*. Press of China University of Political Science and Law.

HAN LIXIN, [2003]. *Compilation of maritime law in various countries*. Press of Dalian maritime university.

TIAN WENYING, [2000]. *Introduction to E-commerce law*. Press of Xi 'an JIAOTONG University.

LU GUOMIN, [2001]. *Research on EDI legal issues in international trade*. Law press-China.

YANG YONGJIAN & GUO YU, [2011], *The Rotterdam rules*. China commerce and trade press.

HU ZHENGLIANG&HAN LIXIN, [2012]. *ADMIRALTY LAW*. Peking university press.

John F. Wilson, [2010]. *Carriage of Goods by sea*. Law press-China.

Cheong Yeong-Seok, [2013]. *Maritime Transport*. Text Books.

Papers

LU ZHOU, [2001]. *Electronic bill of lading security law research*. Master's thesis.

CHEN YING, [2000]. *A preliminary study on paperless international settlement*. Master's thesis.

LI YUNING, [2001]. *Study on legal issues of Electronic bill of lading*. Legal press. Master's thesis.

XIANG ZAISHENG, [2006]. *Legal issues of Electronic bill of lading*. WUHAN University. Doctoral thesis.

WANG TIAN TIAN, [2007]. *The jurisdiction of Electronic Bill of lading*. Shanghai Jiao Tong University. Master's thesis.

ZHONG HONGTAO, [2007], *Function analysis of Electronic bill of lading*. Yantai University, Master's thesis.

ZHU FANGYU, [2015]. *A Legal Study of Electronic Bill of lading under the Background of Cross-border E-commerce*. Dalian Maritime University, Master's thesis.

XING LIREN, [2006]. *On the legal solution construction of Electronic bill of lading in our country*. East China University of Political Science and Law. Master's thesis.

QI YUPIN, [2004]. *Research on Bolero Electronic bill of lading*. East China University of Political Science and Law. Master's thesis.

Miriam Goldby, [2011]. *Reforming the law to facilitate the use of electronic bills of lading in the United Kingdom*. New York.

MAO JIANXUN, [2000]. *Bolero electronic bill of lading system, containerization, no. 5*.

MAO JIANXUN, [2000]. *Bolero electronic bill of lading system, containerization*, no. 6.

LIU YANG&LI PENG, [1997]. *Discussion on some legal issues of Electronic bill of lading*. Dalian maritime university press, Annual journal of China maritime law (vol. 8).

HE WANZHONG&HE HAOZHONG, [2003]. *Difficulties and countermeasures faced by electronic bills of lading*. International and Comparative law Review (vol.4). China FANGZHENG Press.

GAO QI, [2010], *Bolero engineering, to the digitization of the bill of lading*. Foreign Economic Relations & Trade. No.21

XIANG ZAISHENG, [2005]. *Liquidity of electronic bill of lading*. Journal of WUHAN University. Vol 58. No.1

LI DEHUA, [2004]. *On several problems of Electronic bill of lading*. Journal of SUZHOU University.

Diana Faber. [1996]. *Electronic Bills of Lading, in Lloyd's Maritime and Commercial*. pp. 235.

R. David Whitaker. [1990]. *Electronic Documentary Credits*. Business laws. pp.33.

America's new COGSA compares with the past. [1999]. Navigation in TIANJIN.pp.14.

Chris Reed, [2000]. *What is a Signature*, The Journal of Information, Law and Technology. pp. 41-44.

Laws and Regulations

International,

Hamburg rules

CMI Rules on Electronic Bill of Lading

UNCITRAL Model law on Electronic Commerce

CMI/UNCITRAL Preliminary draft instrument on the carriage of goods by sea

Rotterdam rules

Domestic laws,

Carriage of Goods by Sea Act, United States

Utah Digital Signature Act, United States

Uniform Commercial Code, United States

Network Security Act, United States

Electronic Transactions Act, Singapore

Bill of Lading Act, United Kingdom

Carriage of Goods by Sea Act, United Kingdom

Sea-Carriage Documents Act 1996, Australia

Maritime Law, Australia

Sea Transport Documents Act 2000, South Africa

Electronic Communications and Transactions Act, South Africa

Electronic signature Authentication Law, Japan

Criminal Law, Brazil

Bill on Promotion of Trade Business Automation, Korea

Basic Act of electronic commerce, Korea

Electronic Signature Act, Korea

Commerce Act, Korea

Maritime Transport Act, Korea

Contract Law, China

Electronic Signature Law, China

Maritime Code, China

Civil Procedure Law, China

Special Maritime Procedure Law, China

Criminal Law, China

Cyber Security Law, China

Local laws,

Sea-Carriage Documents Act 1998 , Northern Australia and South Australia

Provisional Regulations for the Implementation of Electronic Data Interchange (EDI) in the Foreign Trade of Guangdong Province , Guangdong

Websites

A brief introduction to the Hamburg Rules. [ONLINE]

<https://baike.baidu.com/item/%E6%B1%89%E5%A0%A1%E8%A7%84%E5%88%99/1910606?fr=aladdin>

CMI Rules for Electronic Bills of Lading. [ONLINE] Available at:

<http://www.comitemaritime.org/rules/rulesebla.html>

Rotterdam rules. [ONLINE] Available at:

<http://smuiml.shmtu.edu.cn/index.aspx?lanmuid=68&sublanmuid=663&id=555>

Rotterdam rules. (Chinese version) [ONLINE] Available at:

<http://blog.163.com/xshw2007@126/blog/static/10979236420142315226866/>

Chinese contract law, [ONLINE] Available at:

<https://baike.baidu.com/item/%E5%90%88%E5%90%8C%E6%B3%95/111578?fr=aladdin>

China e-commerce law (second instance), [ONLINE] Available at:

<http://b2b.toocle.com/detail-6421980.html?from=groupmessage>

The first case of China's electronic signature. [ONLINE] Available at:

<http://news.hexun.com/2007-12-10/102164608.html>

YANG YONGJIAN, [2015]. The attitude to the rules of Rotterdam.

[ONLINE] Available at:

http://blog.sina.com.cn/s/blog_9ae626ff0102wako.html

Portal site of Korea EBL. [ONLINE] Available at:

<https://www.eblkorea.or.kr/>

Problems solved by electronic signature law. [OMLINE] Available at:
<https://zhidao.baidu.com/question/412965476.html>

The Enlightenment of Singapore's electronic trading law to China.
[ONLINE] Available at:
<https://www.xzbu.com/4/view-4028777.htm>

Interpretation of the second review of Chinese Electronic Commerce Law.
[ONLINE] Available at:
<https://zhuanlan.zhihu.com/p/30783974>

Case search. Available at:
<http://www.lawsdata.com/>



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