

무역상무연구  
제69권  
2016. 2, pp. 349-370.

논문접수일 2016. 01. 26.  
심사완료일 2016. 02. 18.  
게재확정일 2016. 02. 19.

# The Genealogical Study on Electronic Bill of Lading\*

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Keywords : Electronic Bill of Lading, Formality, Negotiability, Evidentiality, RotterdamRules, Commercial Law

## I. Introduction

In the era of information technology revolution, there has been a continued demand for cross-border paperless trade and innovation of trade process in Korea and abroad. In particular, how you can handle all trade processes such as the acquisition of trade information, consultation, contract, transport and payment in a quick and fast manner has been a key factor in improving the competitiveness of trade duties. As a result, e-trade has become more important over time.

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However, the conventional paper Bill of Lading (B/L) along with the development of e-trade has encountered some problems. In fact, fast travel of ships and airplanes, new container transport systems and dramatic development of a freight transportation system have saved freight handling and transportation time considerably. Therefore, freight would often arrive earlier than the documents.

To solve this problem, in case of a Letter of Credit(L/C) deal, the negotiating bank of the documentary bill has issued Letter of Guarantee(L/G), and the shipping company delivered freight to the consignee and later collected the B/L. As shipping industry started to use a Sea Waybill since the late 1970s, in addition, freight was able to get without presenting a B/L to the carrier. However, a Sea Waybill was not negotiable because it wasn't qualified as an entitled document.

Since the B/L has failed to keep pace with the fast shipment, the conventional trade mechanism in which goods are delivered by the exchange of a B/L has encountered a new challenge. This phenomenon is called, 'the Crisis of B/L.' Therefore, an electronic B/L which shortens the distribution process of the B/L based on modern IT technology by keeping the functions of a conventional B/L has emerged.

Despite these positive views on an electronic B/L, however, it has been little used in practice. Therefore, this study attempted to discuss why the electronic B/L has not been widely used from the operating, institutional and legal perspectives.

Under this background, this study targets to make a contribution to the establishment of a desirable e-trade policy through analysis on facilitation after the introduction of an electronic B/L. For this, this investigates the outline and characteristics of an electronic B/L, analyzes present issues and suggests its roles and promotion plan as the ultimate solution to current electronic B/L-related problems. In terms of a research method, a literature review which takes electronic trade-related books and journals and government policy-related data as the analysis tool was performed.

## II. Literature Review and Theoretical Background

### 1. Analysis of Previous Study

Entering 2000s, studies on electronic Bill of Lading(B/L) began to become active.

According to analysis on its contents by the order of times, Oh(2001) mentioned decrease in international trade, securing document stability by preventing an error and omission and prevention of document delay through realtime forwarding as the reasons for using the electronic B/L. He concluded that there should be the refinement of a rulebook and active participation by the shipper, carrier, forwarder and exporter/importer to commercialize Bolero B/L.<sup>1)</sup> Kim & Baek(2003) analyzed an electronic B/L application model and insisted that there is a necessity to make up for the technical and legal problems of Bolero B/L through continued studies to help related parties secure stability on their own.<sup>2)</sup>

Meanwhile, Yang(2003) investigated if regal relations between the parties of the contract of carriage are regulated by the conventional International Convention Rules even though electronic B/L was issued and reviewed current trends in their revisions as an alternative. He concluded that the problems which occur in applying current International Convention Rules which govern carriers' responsibilities under the contract of carriage of goods by sea evidenced by the B/L are caused by the exclusion of the electronic B/L in the category of ocean transport documents which have the properties of entitled documents just like the B/L.<sup>3)</sup> Choi & Shen(2004) suggested a master plan for the operation of electronic B/L. They said that for this, there should be a Bolero system utilization plan and a prompt decision-making on the development of an internal system between the Republic of Korea and Japan. To promote standard operations in shipping companies and banks, they emphasized the importance of providing electronic B/L services for the following programs between the two countries: e-Trade Hub, PAA and development of ASEM E-trade Alliance.<sup>4)</sup>

Kang & Cho(2005) pointed out the nature of a B/L and its problems in terms of agreement in writing, problems regarding the admissibility of e-documents and data message function-related matters regarding problems in utilizing electronic B/L. They

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1) Oh, Won Suk(2001), "A Study on the Utilization of Bolero Bill of Lading(BBL)", *The International Commerce and Law Review*, Vol. 16, pp. 184~185.

2) Kim, Jong-Rack and Joo-Hong Baek(2003), "A Study on the Problems in Utilization of Electronic Bills of Lading", *Journal of Science*, Vol. 9, No. 2, pp. 397~398.

3) Yang, Jung Ho(2003), "A Study on the Application of International Transport Law to Electronic Bill of Lading", *The International Commerce and Law Review*, Vol. 20, pp. 382~383.

4) Choi, Seok-Beom and Reng-Guang Shen(2004), "A Study on the Establishment of Master Plan on the Operation of the Electronic Bill of Lading in Korea", *International Commerce and Information Review*, Vol. 6, No. 1, pp. 152~153.

insisted that there should be a legal review on the enactment of electronic B/L-related laws and a more comprehensive discussion on the security and stability of an operating system and central authority's functions.<sup>5)</sup> In his study, Song(2006) stated that the ultimate goal is to generalize the use of electronic B/L as traditional paper B/L. He emphasized harmony between domestic and international laws in a belief that it couldn't be achieved without electric technology and improvement of legal systems throughout the Contract of Affreightment(COA). Furthermore, he concluded that there is a necessity to make laws for the execution of electronic B/L and digitalize the B/L process by expanding the scope of its business.<sup>6)</sup>

With Regard to the assessment of legal side, Park(2007) insisted that it is okay to stipulate basic provisions in Commercial Act and other matters with Presidential Decree because electronic B/L is pretty same with traditional paper B/L in terms of legal nature. He believed that the introduction of electronic B/L would strengthen its negotiability and safety. However, he said that electronic B/L wouldn't still be free from forgery and falsification which has been found in traditional B/L. Therefore, he asserted that there should be legislation on responsibilities regarding the registration authority's security policy and loss arising from the use of electronic B/L.<sup>7)</sup> Moreover, Ahn(2007) proposed the gradual expansion of electronic B/L because it couldn't be utilized within a short period of time considering its attributes of commercial practices and development of a system specialized for domestic e-trade environment. He also insisted that it is needed to name an reliable organization as an electronic B/L registration & management agency and get a long-term support from the government.<sup>8)</sup>

In addition to the opinions associated with electronic B/L application, Lee(2008) stated that the negotiation documents of an e-Nego system should be digitalized in advance as an electronic B/L implementation strategy and that electronic documents should be convertible into paper ones until the former is negotiable abroad.<sup>9)</sup> Yang(2009) attempted

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5) Kang, Won-Jin and Sang-Hyeon Cho(2005), "Applications on the Electronic Bill of Lading in International Trade Transactions", *International Commerce and Information Review*, Vol. 7, No. 4, pp. 215~216.

6) Song, Ho-Shin(2007), "A Revised Bill of Commercial Law 2006 on the Electronic Bill of Lading", *Hanyang Law Review*, Vol. 23, No. 3, pp. 379~380.

7) Park, Hong-Jin(2007), "Study on Adopting Electronic Bill of Lading", *Law Review*, Vol. 27, pp. 161~162.

8) Ahn, Byung-Soo(2007), "A Study on the Ways of Realization of e-B/L in Korea", *International Commerce and Information Review*, Vol. 9, No. 4, pp. 195~196.

to figure out legal requirements for electronic transport documents to be accepted as their functional equivalent through analysis on electronic transport document-related regulations on the Rotterdam Rules. He insisted that the Rotterdam Rules have legal stability and reliability by accepting the legal effects of electronic transport documents as paper ones regarding the issuance, transfer and rights on electronic transport documents after introducing specific regulations such as exclusive control and right of disposition.<sup>10)</sup>

Various opinions exist regarding systematic perspective. Jeong(2011) differentiated Korean electronic B/L services as defined them as 'Korean electronic B/L.' Then, he reviewed promotion strategies and difficulties for the definition, development process, differential features, commercialization plan and promotion of 'Korean electronic B/L' and future directions for their spread.<sup>11)</sup> In addition, (2011) comparatively analyzed Sea Waybill(SWB) and electronic B/L and analyzed the results with the results of previous studies. Even though the transport documents on the Rotterdam Rules aren't the same with the transport documents under the Commerce Act in the Republic of Korea, their legal principles which support relations between the two parties are fundamentally identical. Therefore, she concluded that the provisions on transport documents in the Rotterdam Rules would be acceptable in Korean laws as well.<sup>12)</sup>

According to a study of shipping company by Lee(2013), he analyzed the concept and necessities of electronic B/L and investigated online services relating to the operation of a shipping company and public awareness and opinions on the utilization of electronic B/L. He also mentioned a negative view, low reliability and technical problem as inhibiting factors for the promotion of electronic B/L.<sup>13)</sup> Choi(2013) emphasized that the Rotterdam Rules provide environment in which the legal nature of B/L is practically

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9) Lee, Sang-Jin(2008), "A Study on the Implementation of e-B/L for the Dissemination of Global e-Trade", *International Commerce and Information Review*, Vol. 10, No. 1, pp. 212~213.

10) Yang, Jung Ho(2009), "Legal Requirements of the Electronic Transport Records: Focusing on the Rotterdam Rules", *Journal of Korea Internet Electronic Commerce*, Vol. 9, No. 4, pp. 335~337.

11) Jeong, Yoon-Say(2011), "A Study on e-B/L Korea Service and its Facilitation Strategies", *International Commerce and Information Review*, Vol. 13, No. 4, pp. 75~77.

12) Kim, Eun Joo(2011), "A Comparative Study of Sea Waybill and Electronic B/L in the International Contract of Carriage", *The International Commerce and Law Review*, Vol. 51, pp. 350~352.

13) Lee, Hee-Yong(2013), "A Study on the Adoption and Impediment about Electronic Bill of Lading of Major Shipping Companies", *International Commerce and Information Review*, Vol. 15, No. 3, pp. 447~448.

applicable with far more specific and detailed contents than the Commercial Act to respond to diverse circumstances. As a result, he understood that there should be an active consideration on the Rotterdam Rules-related contents at a revision of the Commercial Act provided that more diverse circumstances can occur in the B/L available in the Republic of Korea. <sup>14)</sup> In his follow-up thesis, Choi(2015) mentioned that the Rotterdam Rules significantly increased the negotiability and practical applicability of electronic transport records regardless of if they are negotiable or not by broadly admitting their weight of evidence. He also pointed out that the early settlement of electronic transport practices based on the Rotterdam Rules is very meaningful.<sup>15)</sup>

〈표 1〉 Summary of Previous Studies

Category	Author	Summary
Operational Perspective	Oh(2001)	Reason for the use of electronic B/L and suggestion of its utilization plan
	Park(2007)	Suggestion of a plan to strengthen the negotiability and security of electronic B/L
	Kim(2011)	Comparison of Sea Waybill and electronic B/L
	Lee(2013)	A Study on online services relating to the operation of shipping companies and utilization of electronic B/L
Institutional Perspective	Kang & Cho(2005)	A legal and institutional review on the use of electronic B/L
	Song(2006)	A technical and institutional review on electronic B/L
	Yang(2009)	Analysis on electronic transport document-related regulations under the Rotterdam rules
	Choi(2015)	Analysis on the level and scope of admission in terms of the weight of evidence of electronic transport records stipulated in the Rotterdam rules

14) Choi, Keun-Bae(2013), "Comparative Study on the Bond's Validity of B/L between Korean Commercial Law and Rotterdam Rules", *Journal of International Trade and Insurance*, Vol. 14, No. 4, p. 321.

15) Choi, Keun-Bae(2015), "A Study on the Evidentiary Effect of Electronic Transport Record in Rotterdam Rules", *The Journal of Maritime Business*, Vol. 32, pp. 123~125.

Systematic Perspective	Choi & Shen(2004)	Suggestion of a master plan for Korean electronic through the establishment of an international network
	Ahn(2007)	Gradual electronic B/L expansion plan and emphasis on the importance of system development
	Lee(2008)	Deduction of solution for the implementation of electronic B/L and suggestion of a negotiation system model
	Jeong(2011)	A check on problems in Korean electronic B/L and suggestion of policy and legal B/L

Source : Internal records

## 2. Characteristics of Electronic Bill of Lading

### 1) Formality of Electronic Bill of Lading

In an electronic B/L, it is hard to reflect all B/L-related practices or laws because of its fundamental difference with a paper B/L. Since an electronic B/L differs from the paper one in nature in its operating method and information delivery medium, the legal features and effectiveness of the conventional B/L are not always reflected on the electronic B/L.

In terms of arguments on the practical aspect of the electronic B/L, a functional equivalent approach is mostly found, which aims to decide how the purposes and functions should be fulfilled through information and communication technologies based on analysis on the form requirements which are needed under the conventional paper document. In other words, the existence of fundamental differences between electronic and paper documents is admitted. Unless there are any technical problems for the electronic transport documents to fulfill the functions of paper ones, they are treated just like the conventional paper documents. In other words, if electronic transport documents meet certain requirements needed to carry out the functions of paper documents, they will be the same with the paper ones in terms of effectiveness.<sup>16)</sup>

Meanwhile, in the CMI Rules on the electronic B/L and the UNCITRAL Model Law

16) UNCITRAL(1996), "Working Group on EDI Note by Secretariat", *Electronic Data Interchange*, 30<sup>th</sup> session, January, p. 24.

on electronic commerce, a technology-neutral approach is observed. Under this technology-neutral approach, if certain form conditions are met, it is deemed that a proper system which can grant legal effectiveness regardless of what technology or medium is applied to the electronic transport documents is already established. In this respect, the regulations on electronic B/Ls stipulate the requirements which should be met by the electronic B/L only without specific description on the technologies which comply with these requirements. Therefore, there still is a room for developing a system which can meet these requirements in addition to the current electronic registration system.

## 2) Negotiability of Electronic Bill of Lading

A paper document keeps uniqueness and persistence, integrating all rights arising from negotiable securities. In contrast, electronic documents can be copied or falsified anytime. In other words, they can be edited and improved whenever needed. To keep electronic B/Ls negotiable, therefore, the transfer method caused by right presumption, endorsement and delivery through the appropriation of the securities should be electronically substitutable. The negotiability of B/Ls is basically based on the position of original copies. However, what matters for the holder is the right on the securities, not the documents themselves. In other words, negotiability which enables the transfer of rights becomes possible through the agreed procedure which makes the printed contents and signature reliable in case of paper B/Ls. To keep electronic B/Ls negotiable, hence, it is important to establish the procedure which makes the transfer of rights reliable through the exchange of electronic messages.

The fundamental problem regarding the negotiability of electronic B/Ls is whether or not the transfer of right to position and disposition in an electronic manner can still have legal effects such as the endorsement and delivery of paper documents. A B/L is a part of negotiable securities, which represents transportation bonds including claim for delivery of freight. It requires the delivery of securities regarding the exercise or disposition of the rights stated on the B/L. Meanwhile, according to the current laws on negotiable securities, the physical possession of the original copies is a precondition for the acquisition of rights. Therefore, negotiability cannot be discussed without the physical possession of the original copies. An entitled document controls the transfer of certain legal rights such as construction possession and claim for delivery of goods based

on the physical possession of original paper documents. However, it is impossible to actually possess electronic B/Ls. In other words, these electronic documents cannot be presented at claim for delivery of goods, and they will not be endorsed and delivered to a new holder. Hence, there should be an alternative means to control these rights and responsibilities.

In an electronic B/L, the rights are stated in intangible digital records. The exercise and disposition of the rights on goods are also done using a private key unlike the conventional paper B/L. In other words, while a paper B/L is the only means to transfer rights on the securities by fulfilling the functions of the entitled documents, an electronic B/L causes complicated problems because it requires a separate electronic procedure to substitute these functions. In order for electronic B/Ls to be accepted as the functional equivalent of negotiable B/Ls, after all, the fact the control or right of the goods is transferred to the intended party only should be guaranteed. To achieve these purposes through the electronic exchange of messages, there should be a means to keep these messages unique.<sup>17)</sup>

### 3) Evidentiality of Electronic Bill of lading

Computer data are invisible until they are printed out. In addition, they are edited and improved by new data instead of being accumulated. In terms of variability instead of durability and data error or manipulability, therefore, electronic documents are greater than conventional paper ones. According to the 1985 UNCITRAL, "Regarding electronic transmission and automation of papers in international trade or for customs clearance, there is no serious problem in using computer records as the means of evidence in a legal procedure." According to each country's positive law, there are many differences in accepting the admissibility of computer records. Because electronic B/Ls are printouts, in addition, they may have some difficulties in carrying out admissibility. In countries following a common law system, there is a limitation in permitting the admissibility of electronic documents. In countries that have adopted a civil law system, however, all related evidences can be admissible. Therefore, the only problem in a legal trial in which computer evidence is handled is the weight of evidence.

According to Article 5 of the Framework Act on Electronic Commerce in South

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17) UNCITRAL(1996), "Report of the Working Group on Electronic Data Interchange", *Electronic Data Interchange*, 30<sup>th</sup> session, June, p. 40.

Korea, “Electronic documents shall not become less effective just because they have an electronic form unless otherwise stipulated by other laws.” Article 7 of the same law also states, “The admissibility of electronic documents shall not be denied in legal procedures just because they have an electronic form,” accepting the admissibility of electronic documents. Therefore, it is obvious that an electronic B/L which includes information on the details of a transportation contract and quantity and state of freight would be available as the evidence just like the conventional paper document.

### III. Implementation Requirements for Electronic Bill of Lading

#### 1. Operational Perspectives

In order for the Electronic Data Interchange (EDI) method to become as effective as conventional paper documents, data security is required. In case of an electronic B/L, a lot of people are connected to the network through the EDI. Therefore, there is a high risk of security breach.

An electronic B/L can be converted into a written form, and the registration authority converts the electronic document into a digital form such as a PDF file and prints it out. In addition, it takes necessary actions to prevent forgery and fabrication. However, an error can occur while the electronic document is being converted into a written form. The nonconformity between the electronic and paper B/Ls can cause a problem in responsibility-related issues. In particular, the Commercial Act states that an electronic B/L has the same legal effect with the paper B/L. Regarding a bona fide B/L holder, therefore, a carrier assumes that goods are accepted or shipped as stated on the B/L and takes related responsibilities. In case a disparity is found between the electronic B/L and paper B/L, therefore, a carrier could take a B/L holder’s responsibilities even though the causes are not attributable to the former. In the messages transmitted among the parties, the fact that a message is sent to the receiver by the authentic sender, and that it is free of any intentional error or falsification should be confirmed. In other words, there should be a means guaranteeing that the message is complete without any omissions until the

end. In a paper B/L, this kind of problem is solved by signature. In an electronic B/L, in contrast, it should be handled through a technical method. At present, however, it cannot be said that the data security is guaranteed. In addition, a computer system needs to be stable. The provisions which stipulate the compensation for damage arising from the system failure due to an illegal penetration should also be stated specifically.

In an e-trade, many parties get involved. In the event of loss, therefore, a matter of how to share the portion of responsibility occurs. If a loss attributable to the service provider occurs during the practicalization of electronic B/Ls, a user may refuse to use them unless they are able to get compensation. In the EDI, in general, three parties get involved: sender, receiver and communication service provider. In case it is obvious that a user causes a problem, there will not be a problem. If a communication service provider makes a mistake, however, a matter of who is to blame happens. Regarding a communication service provider's responsibility, after all, in case of causation between network services and mistake and occurrence of excessive burden attributable to a communication service provider, the effects on the development of network services should be considered.

## 2. Institutional Perspectives

In order for an electronic B/L to have a real right's validity, rights on the goods should be transferable by delivering messages. In other words, functions and negotiability as the entitled document in electronic B/Ls should be realizable through electronic messages. A problem in the real right-based effects of electronic B/Ls occurs when the B/L and goods are uniformly examined even though they are physically different. Regarding real right's validity, each country has different rules and laws. Even though it is hard to integrate them, a solution has been suggested by stipulating a method prior to the occupation through the CMI Rules.

In other words, the right on a B/L can be claimed through the electronic records saved in the electronic B/L-controlling computer, and it can be transferable between the consignor and consignee through electronic messages. However, whether or not computer records can be accepted as real right-based negotiable securities in this method, and rights can be transferred by delivering electronic messages should be solved by each

country's domestic laws.

According to current regulations, a consignee getting the electronic B/L should list their information(ex: Firm name, business registration number, address, etc.) on the registration authority in advance.<sup>18)</sup> In order for the electronic B/L right holder to get the goods, in addition, he/she needs to fill out the electronic form which includes the claim for delivery of the goods, attach the electronic B/L and send it to the carrier through the registration authority. Even if the carriers refuse to deliver the requested goods, they need to send the electronic documents which state the reasons for the refusal to the electronic B/L right holder through the registration authority. These transfer and delivery procedures are way complicated compared to a paper B/L which is executed through delivery and presentation only. First, there is a high possibility that the consignee of the electronic B/L would be a foreigner. However, most foreigners may see it very complicated to go through the registration procedure on the website of Korea's e-trade system. In case of the delivery of goods as well, a carrier just needs to present a B/L and goes through its authentication process with a paper B/L. When an electronic B/L is used, on the contrary, it should be sent and received through the registration authority. In particular, this process which requires a registration authority in the middle could be perceived as a redundant process in that a face-to-face contact or communication by phone between the carrier and right holder is inevitable in the electronic B/L, making the electronic B/L less efficient.

Rotterdam Rules provide environment in which the legal nature of B/L is practically applicable with far more specific and detailed contents than the Commercial Act to respond to diverse circumstances. As a result, he understood that there should be an active consideration on the Rotterdam Rules-related contents at a revision of the Commercial Act provided that more diverse circumstances can occur in the B/L available in the Republic of Korea. So We consider that Rotterdam Rules has more comprehensive and powerful regulations about evidentiary effect than earlier other international rules, and that Rotterdam Rules contributes to enhance the negotiability and practically usability of the electronic transport record.

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18) According to the amendment of the Commercial Act(Nov. 7, 2005), it is allowed to list an electronic B/L on the registration authority designated by the Minister of Justice, instead of actually issuing a B/L in person. In order for the electronic B/L to be registered, in addition, the request for shipment, acceptance and issuance of Shipping Order(S/O) as well as registration of the electronic B/L should be enabled. Considering the attributes of the duties, it is also essential to handle electronic signature.

### 3. Systematic Perspectives

Trade takes a deal between countries as a precondition so that a B/L should be negotiable globally. In case of an electronic B/L, it should be issued in South Korea and distributed abroad in case of export. The securities issued by a foreign country should be available for a domestic importer. However, the electronic documents are little used in practice due to technical problems relating to their authentication.

Right now, in order for the electronic B/L to be issued and transferred, the official electronic signatures of both carrier and right holder are required. For these official electronic signing, a certified issued by an official certification authority is essential. However, it is complicated for a foreigner to get this public key certificate. If either carrier or right holder is a foreigner, therefore, it is difficult to issue and distribute electronic B/Ls. However, this kind of authentication related problem is a required process for the security of electronic documents. Even so, the problem is that this measure underestimates the importance of their global negotiability. Unlike paper B/Ls which are controlled under the unified laws and regulations, electronic B/Ls are handled with different rules and regulations by each country or organization, which in turn causes an authentication-related problem. Therefore, they can be traded among subscribers or registrants only.

Meanwhile, the private key-based transfer of electronic B/Ls is a distribution method based on the carrier's credit. From the carriers' viewpoint as well, they may have a bigger responsibility on the trade by controlling the private key. In fact, a carrier has to bear additional duties and responsibilities which have nothing to do with transportation obligations, which may cause changes in the range of the carrier's conventional rights and duties. The shipper also has no choice but to trust to the carrier for the delivery of the goods.

If an electronic B/L is issued by the shipper's request, a domestic negotiating bank is able to review the negotiation using the e-Nego system. Because no international linkage is established in the issuing bank, however, a paper review is mostly conducted with the electronic B/Ls converted into paper ones. In Korea, therefore, the negotiation of export draft can be electronically handled. However, they need to be converted into paper ones for the issuing bank in other countries.

## IV. Findings on Utilization of Electronic Bill of Lading

### 1. Establishment of System-based Structure

In order to establish the negotiation system for electronic B/Ls, active participation from related parties(ex: banks, shipping company, exporter and importer, etc.) in addition to the government support is essential. For the introduction of electronic B/Ls, there should be a review on core factors including obstacles in practice and electronic document identification related problems. In addition, management of message transfer and shipping information management should be considered.<sup>19)</sup>

In case a system fails due to the intention or negligence of the registration authority or the service provider, the responsible party is liable to compensate the damage. Among the parties who are unable to get access to the system, it is very hard to decide who is to blame. If a loss occurs due to system failure, the intention or negligence of the registration authority or the service provider is estimated. Then, compensation should be promoted together with the registration authority of the service provider.

If it is obvious that the system failure is caused by a third party, they would be responsible for the damage. Because the third party's capability can't be guaranteed, actual compensation would not be easy. Furthermore, if the cause of the accident is unknown, no one could be to blame. As a result, the bona fide carrier or right holder could be the victim of this accident. Therefore, making the registration authority buy the liability insurance policy to be prepared against the system failure could be a good idea in promoting this system by enhancing the reliability of the electronic B/L system.

According to current regulations, the registration authority needs to distribute paper B/Ls if the electronic B/L right holder requests the conversion of electronic B/Ls into paper ones. If the electronic B/Ls are not matched with the paper ones, however, a carrier could suffer from an unexpected loss. Therefore, a carrier needs to issue paper B/Ls in person, or if the registration authority issues the paper documents, the shipper

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19) Lee, Bong-Soo(2011), "The Role of Electronic Trade Platform in the Information Technology Era", *The International Commerce and Law Review*, Vol. 52, pp. 52~56.

needs to inform the details to the carrier in advance and send him the duplicates of the paper B/Ls to make sure that the electronic B/Ls are identical with the paper ones.

To adopt a systematic electronic B/L system early, furthermore, all trade parties including banks need to use the services at the same time under a single solution. The conventional trade process requires a lot of human resources and time from banks particularly. Hence, the introduction of electronic B/Ls would have a positive effect on bank efficiency. Because electronic B/Ls are issued by a carrier, in addition, it is required to build a solid cooperative system between the carrier and banks. Moreover, the efficient linkage and integration with diverse e-trade infrastructure having the electronic B/L right registration system are necessary. Even though it is able to build a discontinuance free e-trade process by linking the central registration system of the electronic B/L with the e-trade platform, there should be a separate discussion on the relationship between the central registration and e-trade platform or certified e-document authority.

## **2. Construction of Distributive Environment**

The ideal plans to keep electronic B/Ls globally negotiable are as follows: First, it is needed to enact a global uniform law through international meetings and have it implemented by countries. At present, the UNCITRAL has an effect on the enactment of each country's laws by recommending model standards on e-commerce, but this recommendation without legal force has limitations. In Korea, for example, the electronic B/L system has been established by the government. Therefore, there should be an effort for global uniform standards. Second, infrastructure which connects all parties involving in international commerce should be built. Furthermore, there should be a search for a plan to promote electronic B/Ls through the improvement of Korean laws and systems. Third, system stability should be achieved through technology advancement, and the establishment of an open system should be considered to improve system reliability by setting clear criteria on duties and responsibilities. In this aspect, it should be flexible enough to regulate legal relationship according to each system, instead of specifically stipulating the type of the central registration system in laws.

As long as a central registration authority isn't organized by countries around the

world through an international treaty, the neutrality of the central registration authority organized by each country can be doubtful, causing an obstacle in the global distribution of electronic B/Ls. Furthermore, it is needed to introduce a system in which rights are stated on the electronic documents, and their uniqueness and reliability are given by the central registration authority. In addition, the rest procedures are governed by each party's internal rules by predicting technology development, instead of the current electronic registration method in which a central registration authority involves in all processes.

Considering a high level of informatization, large trade volume with South Korea and interest in e-trade, in addition, it is desirable to build electronic B/L environment with the U.S. Based on the U.S.-Korea FTA 'Customer Administration and Trade Facilitation,' it is also needed to promote cooperation in a private sector in utilizing electronic B/Ls. In particular, the U.S. has its own legal systems which can accept electronic B/Ls such as the UCC and UETA, and the Republic of Korea also stipulates the utilization of electronic B/Ls in the Commercial Act. Therefore, the conditions for legal realization are already available. There should be an attempt to utilize electronic B/Ls between Korea and the U.S.<sup>20)</sup>

Meanwhile, a burden of the development costs for an electronic B/L system should be offset with cost reduction through its utilization. However, it is hard for small and mid-sized enterprises to make this happen. Therefore, it would be a good idea to have this project promoted by conglomerates. In terms of usage, it would be helpful to use a straight B/L or non-negotiable sea waybill, not an order B/L, in terms of the accumulation of experiences.

### 3. Enhancement of an Interconnection System

A B/L is basically designed to be globally distributed, it requires specific systems. However, the Republic of Korea requires its own certified electronic signature only, seriously hindering a B/L's global negotiability. In fact, this kind of problem has been raised from the introduction of an electronic B/L, obstructing the promotion of the

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20) Ahn, Byung-Soo(2007), "A Study on the Ways of Realization of e-B/L in Korea", *International Commerce and Information Review*, Vol. 9, No. 4, pp. 192.

electronic B/L system.

Right now, Korean government is able to sign an agreement with foreign governments for the mutual recognition of electronic signature. In this case, the certificate issued by a foreign certification authority will have the same legal effect. If a certification issued by the authority which is not in an agreement is used, however, an electronic B/L cannot be utilized. To solve this kind of problem, it is needed to develop a plan which legally strengthens mutual recognition between certification authorities instead of focusing on mutual authentication based on an international treaty.<sup>21)</sup>

Even though public key-based inter-compatibility is enabled, each party requires legal binding and certainty in use. Therefore, a complete solution cannot be provided. For practical standardization, therefore, it is needed to set specific guidelines. In addition, an agreement which adopts a qualification accreditation system through which the certificate can be mutually operated should be signed in advance.

In terms of a global certification system, a mixed type in which a network structure is partially added to the hierarchical structure is being developed. Therefore, each country needs to improve reliability by establishing a global certification system through inter-working among Public Key Infrastructure(PKI) domains and suggesting standardized guidelines on certification among private systems designed for an e-trade party's efficient operation, which are applicable to domestic environment.

To make electronic B/Ls more commonly used than paper B/Ls, their process should not be more complicated than paper B/Ls. In this sense, making the consignees who get an electronic B/L list their information(ex: Firm name, business registration number, address, etc.) on the registration authority would be too much if the consignee is a foreigner, obstructing the global distribution of electronic B/Ls. Therefore, the provision that requires consignees to list their information on the registration authority in advance needs to be amended. In other words, it would be a good idea to make consignees go through the registration procedure if they hands over the B/L again. To have electronic B/Ls more negotiable globally, ultimately, there should be a way to exercise and transfer rights without listing information on the registration authority.

Further, in case of refusal or claim for the delivery of goods, it is just a simple notice without legal binding. Therefore, this kind of simple notice should be freely transmitted

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21) Jeong, Yoon-Say(2011), "A Study on e-B/L Korea Service and its Facilitation Strategies", *International Commerce and Information Review*, Vol. 13, No. 4, pp. 68~75.

between parties to make the delivery process simpler and more convenient. Therefore, it is desirable to remove the provision that requires the claim for delivery of goods by the electronic B/L right holder and refusal of delivery of the goods by the carrier to be done through the registration authority. If the delivery of goods is completed, then, a carrier's notice would be good enough.

## V. Conclusion

Electronic trade is completed when all processes from marketing to payment are done in an electronic manner without discontinuance. In addition, an electronic B/L is the last step to realize e-trade. In the Republic of Korea, an e-trade service program including the introduction of electronic B/Ls has been promoted. Even so, the electronic B/L system has had a little effect on e-trade. In addition, in terms of the roles and functions of B/Ls, the electronic documents are still within the scope of paper ones. Therefore, there is a sufficient necessity to implement electronic B/Ls, and the followings should be suggested for the success of the electronic B/L system.

First, to build a negotiation system for electronic B/Ls, active participation from related parties(ex: banks, shipping company, exporter and importer, etc.) in addition to the government support is essential. In particular, electronic documents should be convertible into paper ones until they are fully negotiable with foreign countries. Second, electronic B/Ls cannot be utilized within a short period of time in current commercial practices. Therefore, it is desirable to improve convenient trade methods first. Ultimately, a global uniform law should be enacted by countries around the world through international meetings. Third, there should be infrastructure which connects all parties of international commerce through an electronic system. For this, the independent operation and establishment of rules of a right registration system through a trusted third party are required. Fourth, instead of promoting mutual recognition through international treaty, there should be a plan which legally specifying mutual recognition between certification authorities. Since various projects relating to e-trade are being promoted around the world, the global linkage of electronic B/Ls through an international e-trade platform would be enabled. Fifth, it is needed to ease the strictness of electronic

signature to promote the global negotiation of electronic B/Ls. In addition, there should be clear responsibility criteria to make parties use electronic B/Ls with confidence. Sixth, Korean government need to realize that e-trade is an important advancement for continued growth and critical means for it to play a leading role in international trade, not just a target of short-term achievements. For this, the government has to provide support more aggressively with more interest and commitments. Inevitably, in prima facie weight of evidence, there was a significant difference with the Rotterdam Rules even in comparison with the Commercial Act which was amended with the significantly advanced rules on electronic B/L. He believed there should be a discreet consideration on these matters at the revision of the Commercial Act.

In sum, the study results should be further extended to develop an analysis framework with more diverse and practical environmental variables. This study has limitations in that it performed a literature view only in interpreting and utilizing the results. Due to a lack of the preliminary research on the target circumstances and conditions, subjective judgments have been made. Therefore, there should be further studies which overcome these limitations.

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## ABSTRACT

### The Genealogical Study on Electronic Bill of Lading

Bong-Soo LEE

This thesis examines the problems faced in the electronic bill of lading for which improvements are necessary, and suggests various ways of overcoming those problems.

First, to build a negotiation system for electronic B/Ls, active participation from related parties in addition to the government support is essential. Second, electronic B/Ls cannot be utilized within a short period of time in current commercial practices. Third, there should be infrastructure which connects all parties of international commerce through an electronic system. Fourth, instead of promoting mutual recognition through international treaty, there should be a plan which legally specifying mutual recognition between certification authorities. Fifth, it is needed to ease the strictness of electronic signature to promote the global negotiation of electronic B/Ls. Lastly, in prima facie weight of evidence, there was a significant difference with the Rotterdam Rules even in comparison with the Commercial Act which was amended with the significantly advanced rules on electronic B/L. He believed there should be a discreet consideration on these matters at the revision of the Commercial Act.

For this, the government has to provide support more aggressively with more interest and commitments.

Keywords : Electronic Bill of Lading, Formality, Negotiability, Evidentiality, Rotterdam Rules, Commercial Law