

A Study on the Adoption and Impediment about Electronic Bill of Lading of Major Shipping Companies

주요 선사의 전자선하증권 도입 현황 및 활성화 저해요인에 관한 연구

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ABSTRACT

The aim of this study is to thoroughly review prior literature related to electronic bill of lading and investigate the current state of electronification of operational processes of both major international and domestic shipping lines. In addition, this study examines the meaning of Electronic Bill of Lading; the perception on Electronic Bill of Lading; and the impediment to Electronic Bill of Lading in the perspective of shipping lines. As a result, following obstacles deter further development of e-B/L: negative attitude on the utilization of e-B/L; the matter of trust on the utilization of e-B/L; and technical issues in relation to the use of e-B/L.

Key Words : Electronic Bill of Lading, Impeding Factor, Shipping Company

I. Introduction

It is certain that there remain many aspects to be improved in electronic trade although its demand has been rapidly expanded to enhance the efficiency of trade process. There had been practical improvements in some elements, such as the commercial affairs, foreign exchange and customs clearance; but, the contextual constrains arising from obstacles like legal/institutional restraints, conventional trade custom and international implementation have deterred rapid and extensive adoption and expansion of electronic trade across countries. Recently, as the key for the electronic payment, the needs for and interests in the electrification of Bill of Lading (hereinafter, B/L) are augmented, which is because it is a critical factor for trading companies and trade-related organizations to perform the 'trading without discontinuity' in electronic ways. Therefore, the electrification of B/L is understood as a task to be completed in line with the expansion of electronic trade. In these circumstances, the commercial attempt, such as Bolero system, has appeared in spite that international agreements or settlement of new trading custom have not yet established. In Korea, the efforts to adopt electronic B/L (hereinafter, e-B/L) has been made in that commercial law approves the legal validity and entails the enforcement ordinance to operate e-B/L.

However, there are many restrictions in creating actual achievements through electronic trading because of non-existence of the e-B/L which is commonly used in the entire trading process. Although several shipping companies provide service via internet B/L system and Bolero commercialized a part of B/L-related solutions, there is no standardized or commonly used e-B/L system at present. As banks only approve the paper B/L, a type of marketable securities, as an original document, the trading organizations heavily rely on off-line work processing by visiting banks for trade settlement with bringing the paper B/L.

From the perspective of large shipping companies, in particular, B/L is understood as a transportation document, as originally intended, rather than a document for payment.¹⁾ The direct

1) The shipping company which is in charge of transporting the cargo does not provide the service for the e-B/L which substitutes the B/L without paper B/L such as the bank negotiation, cargo delivery. The biggest reason is because there is a realistic difficulty in performing with the same standard for the composition of the shipping company, bank, custom house and owner of cargo for sending/accepting in other countries which participate into the entire process of electronic trade transaction.

example is that Korean large shipping companies do not offer the service relating to e-B/L for the electronic trading. With regards to e-B/L service for cargo owners, in fact, the core of the service of e-B/L is to make them to print out the original B/L on the paper from a designated website by distributing the format in advance in order for cargo owners not to visit the office of shipping company.

Therefore, it is a time to make an effort to stimulate the age of full-scale electronic trading through adopting and expanding the e-B/L in transporting goods in the international trade. For this, it will be necessary to investigate the ways to utilize and improve e-B/L from the perspective of shipping companies which play the most pivotal role in the contemporary global trade.

This research will thoroughly review results from previous research and discussion topics with respect to e-B/L. Given these data, it will highlight the obstacles and points of improvement in materializing e-B/L in view of shipping companies. In addition, this study will not only identify the service provision of online transport documents, critical issues relating to e-B/L and the practical method for vitalizing e-B/L by using multiple case studies on global shipping companies.

II. Literature Review

1. Analysis on previous studies

1) Research on the necessity and the concept of e-B/L

The studies on the necessity of e-B/L start from seeking the solutions for the problems arising from the negotiation and use of the B/L, which corresponds to the cause and initiation of all studies related to e-B/L. Moreover, the number of research is increasing because e-B/L is becoming more important as the key process and tool for the electronic trading which has been recently expanded.

The documents that are used for cargo loading between cargo owners and shipping companies are diversified. Among them, the most representative one is the B/L, the marketable security with not just verifying the acceptance or loading of the cargo based on the agreement of carriage of

goods by sea but also displaying the delivery claiming right for the cargo to the transporter. The basic purpose of the B/L is to enable the cargo owner holding the B/L to sell the cargo under transportation as soon as possible. It becomes possible with making B/L, a kind of certificate right, to be negotiable.

Although the paper type maritime transportation documents have been generally used in international trade, they entail the costs in issuing and processing. Moreover, they are often obstacles hindering the swift negotiability of maritime-transported cargo due to the later arrival than the cargo owing to the appearance of high-speed vessels.²⁾ In other words, the innovation of sea transportation, caused by the development of high-speed vessels and containerization, creates so-called 'the bill of lading crisis' which refers to the situation that cargo arrives earlier than B/L does.³⁾

The previous research defined the concepts of e-B/L in variety. Sohn(2002)⁴⁾ simply defined e-B/L as a B/L issued as an electronic document. Yang (2002)⁵⁾ defined it as performing the cargo ownership, ownership transfer and ownership termination in an electronic way while storing the B/L details into a computer. Eum(2002)⁶⁾ defined it as the realization of the B/L functions by setting the contractual relationship about right and obligation via an electronic medium. Lee and Chung(2007)⁷⁾ defined e-B/L to decide a specific key as a password with using a protocol between computers and to consider holding the key as the equivalent to holding negotiable B/L.

In summarise, e-B/L can be defined, in general, as performing the functions approved on the traditional paper B/L with intangible electronic method through granting the legal effect on the change of right relation described on the electronic right registry book such as the constitution, transfer and security setting of the right instead of direct issuing of the actual B/L. <Table 1> shows the comparisons between e-B/L and conventional paper B/L.

2) Baek, T.S.. "The Bill of Lading Crisis Management on a Case-by-Case Basis", *Korea trade review*, Vol.27, No.1, 2001, p.6

3) Paul Todd, *Modern Bill of Lading*, Collins, London, 1986, pp.1-3

4) Sonn, J.C., "Materials to the Revision of the Korean Maritime Law", *The Journal of the Korean Maritime Law Association*, Vol.24, No.2, 2002, p.239

5) Yang, J.H. "A Study on Legal Issues of the Electronic Bill of Lading", *The Journal of the Korean Maritime Law Association*, Vol.24, No.2, 2002, p.102.

6) Um, Y.D. "Study on the Alternatives to Traditional Bills of Lading related to Problems with It's Legal Effects in International Trade and Transportation" Korea Maritime University doctorate thesis, Korea Maritime University, 2002, p.435.

7) Lee, C.B. and Jeong, Y.K. "e-trade : A New Approach for Global Operational Model Implementation of Electronic Bill of Lading" *International Commerce and Information Review*, Vol.9, No.3, 2007, p.163.

<Table 1> Differences between e-B/L and conventional paper B/L.

Classification	e-B/L	Paper B/L
Issue	The shipping company applies the issuance through prior obtaining from the sender and the registration organization describes and control the right relation.	Application and acceptance of actual document using internet and fax.
Keeping	Keeping the issued information for 10 years at the electronic archive	Permanent risk of losing by direct keeping by the holder.
Change	The corrections on the issued e-B/L is renewed by electronic change request.	New issue after collection of the original B/L(O. B/L) through change application (C/A)
Simple agreement/signature	The simple agreement, signature and signet are available to use prior registration electronically for document conversion.	Printing or handwriting for simple agreement and signature at the backside
Ownership	Controlling the lifecycle (right circulation) of the right based on the electronic registry (Title Registry)	Right execution by the holder with transferred ownership through endorsing on the paper B/L
Compensation	No necessity of submitting the (O. B/L) and (L/G) at the claiming of the compensation and available for direct link with electronic delivery order (e-D/O) for taking over the cargo.	Suggestion of the (O. B/L) or (L/G) after visiting to the transportation company at the claiming of the compensation and independent requesting for the delivery order (D/O) if necessary.

Source : Chung(2009), "A study on the task of activation on Korean type electronic B/L", Autumn collection of dissertation from Korea Trade Research Association, p.461.

2) Research on the introduction of e-B/L

The studies on the introduction of e-B/L mainly focused on the legal and institutional issues.

Firstly, Song (2006)⁸⁾ argued, in the study on the review of commercial code revision for e-B/L in 2006, that use of e-B/L can be generalized as paper B/L and that the harmonization of domestic and international laws is required so that the electronic technology is supported and the legal system is arranged in the entire process of the maritime transportation agreement.

Park(2007)⁹⁾ asserted in his consideration on the introduction of e-B/L that, as the main characteristics of paper B/L and e-B/L have few difference, the commercial code can delineate some basic elements while leaving other details to be regulated by the presidential decree.

Ahn (2007)¹⁰⁾ suggested a gradual expansion of e-B/L and development of a system specialized

8) Song, H.S.. "A Revised bill of Commercial Law 2006 on the Electronic Bill of Lading". *Hanyang Law Review*, Vol.23, No.3, 2007, p.380

9) Park, H.J.. "Study on Adopting Electronic Bill of Lading", *Law Review*, Vol.27, 2007, PP.161-162.

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

in the domestic electronic trade environment because e-B/L is dependent upon the trading trait which cannot be adopted in a short term.

Chung(2008)¹¹⁾ asserted in the consideration on the e-B/L in the revised commercial code that the details of procedural regulations shall be decided in the working regulations to be provided by the registration organization because the current legal system has a limitation to include all the regulations.

Choi analyzed the notice-confirm system of Reinskou, models of SeaDocs, CMI, NCITD and BIMCO in a series of studies¹²⁾ on the models introducing the activation of the e-B/L by using case studies. In addition, he emphasized the necessity for establishing Korea-driven initiatives and design strategies for e-B/L driven by introducing e-B/L in Korea while mentioning the introduction of e-B/L and commercial implementation in Korea.

3) A study on the commercialization and utilization strategy for e-B/L

The studies on the commercialization and utilization strategy for e-B/L are mainly classified into the derivation of implications through individual case analysis, the analysis on the antecedents for utilizing and fostering e-B/L, the suggestions of alternative and practical models for utilization strategy.

Oh(2001)¹³⁾ suggested, from Bolero e-B/L cases, cost reduction in trading, document security by preventing errors and omissions and minimization of document delay by real-time document transfer. He also claimed (1) making a precise rule books, (2) advertising the advantages to cargo owners, shipping companies and forwarders, and (3) slashing the expensive cost structure, such as membership fee and cost of usage.

Woo(2003)¹⁴⁾, in his study on revitalization of e-B/L, insisted (1) the establishment of special

11) Chung, W.Y.. "Electronic Bill of Lading Provisions of the Revised Maritime Law", *The journal of the Korean maritime law association*, Vol.30, No.1, 2008, pp.11-112.

12) Choi, S.B.. "A Study on the Operational Model of Electronic Bill of Lading", *Korea trade review*, Vol.24, No.1, 1997, pp.423-424, _____, "A Study on the Legal Preparation for the Introduction of Electronic Bill of Lading in the Days of Global Electronic Trading", *Korea trade review*, Vol.24, No.1, 1999, p.237 _____, "A Study on the Introduction of Electronic Bills of Lading in Korea", *The Journal of Korea Research Society for Customs*, Vol.7, No.2, 2006, pp.347-368, _____, "Short Study on the Problems of Introduction of the Law on Electronic Bill of lading in Korea", *E-Trade Review*, Vol.6, No.1, 2008, pp.209-226.

13) Oh, W.S.. "A Study on the Utilization of Bolero Bill of lading(BBL)", *The International Commerce & Law Review*, Vol.16, 2001, pp.184-185.

14) Woo, K.M.. "A Study on Devices for Activating the use of Electronic Bills of Lading", *International Trade Review*, Vol.9, NO.1, 2003, p.340.

laws or modification/amendment of current laws to manage new commercial practices of e-B/L, (2) the provision of one-stop service among domestic and international network systems by frequent mutual contacts, and (3) the enhancement of functions in the system for users' safe trading.

Kim and Baek(2003)¹⁵⁾ analyzed the models of e-B/L introduction in their research on issues arising from operating e-B/L and highlighted that technical and legal problems should be tackled by continuous research to enable involved entities to secure the safety by themselves.

Cho and Kang (2008)¹⁶⁾ presumed solving the issues relating to transfer and circulation of e-B/L as the critical precondition of proliferation. As a solution, they proposed (1) the acceptance of title transfer in an electronic method, (2) the acceptance of electronic methods to meet the requirements for conventional trade documents, (3) the technical establishment for electronic title transfer and circulation, and (4) the acceptance of e-B/L in the main contracts as well as sub-agreements.

Lee and Chung(2007)¹⁷⁾ insisted in the study on the agenda for the global operation model of e-B/L that it is important to diversify e-B/L operation models because the e-B/L system shall be regarded as an evolving concept depending on the technology development. Lee(2008)¹⁸⁾ asserted in the study on the strategy for adopting and operating the e-B/L for global electronic trade expansion that the electrification of the negotiating documents in e-Nego system should be prioritized and the conversion of the electronic document to the paper document should be enabled until the circulation of the electronic document with the foreign countries is allowed. In addition, he insisted that the guarantee on the originality of the electronic document and security system should be taken into account.

In a similar study, Kang et al(2011)¹⁹⁾ considered the commercialization of the domestic e-Nego system as the pre-requisite for the revitalization of e-B/L. They also demonstrated, in comparisons with current operations of e-B/L, factors to foster e-B/L, such as acquiring the

15) Kim, J.R.. and Bea J.H.. "A study on the Problems in Utilization of Electronic Bills of Lading", *Soonchunhyang Social Science Review*, Vol.9, NO.2, 2003, p.397.

16) Jo, S.H.. and Kang, W.J.. "Transfer of Right and Negotiability of the Electronic Bill of Lading in Electronic Trade Transactions", *International Commerce and Information Review*, Vol.10, No.2, 2008, pp.22-43.

17) Lee, C.B.. and Jeong, Y.K. 2007, Op, cit, p.179.

18) Lee, S.J.. "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, 2008, pp.212-213.

19) Kang, D.Y.. and Ham, Y.J.. and Park, C.D.. "A Study on the Reinvigoration of Electronic Bill of Lading by the Construction of e-Nego System", *E-Trade Review*, Vol.9, No3, 2011, pp.25-42

negotiability, expanding domestic/foreign infrastructure, strengthening the promotion for e-B/L, and rationalizing service charges for e-B/L.

Chung(2011)²⁰⁾ analyzed the process of implementing Korean e-B/L by highlighting differences with other e-B/L models and then proposed a strategy for successful settlement and activation of Korean style e-B/L as well as an analysis on the tasks to be overcome.

Finally, Chae et al(2012)²¹⁾ analyzed international rules, model laws, laws and regulations in the main countries related to the e-B/L as well as the existing e-B/L models in order to derive the practical strategies for e-B/L. In this analysis, they illuminated the lack of compatibility, the lack of legal/systematic measures to tackle disruptions, the excessive costs and incurrence of dual cost, the negative perceptions by users and the passive participation by banks as the constraints on use of e-B/L in practice.

2. Implications and research gap

The studies relating to the e-B/L in Korea have been increased since the beginning of 2000. It can be evaluated that a vast number of studies have been conducted given a short period of time. This is correlated to the circumstances in Korea where investment in the electronic trading and development of system were made very promptly because of its heavy dependence on international trade and of the its fast adoption and development of IT technology.²²⁾

Nevertheless, the extant studies on existing e-B/L mainly focused on reviews on the legal and functional nature of the e-B/L, analysis on the issues arising from the expansion and utilization and research on strategic realization methods for the e-B/L. However, it appeared that there is few study with respect to shipping companies as a pivotal entity in the negotiability of e-B/L; the exception is a comparative study on the legal and conceptual aspects between seaway bill and e-B/L.²³⁾ Therefore, it is necessary to summarise the concept of e-B/L, obstacles in utilization of

20) Jeong, Y.S.. "A study on e-B/L Korea Service and its Facilitation Strategies", *International Commerce and Information Review*, Vol.13, No.4, 2011, pp. 51-79.

21) Chae, H. and Lee D.H. and Choi, K.H.. "A study on the impeding factors for the practical use of electronic bill of lading", *The e-business studies*, Vol.13, No.4, 2012, pp.221-244.

22) Korea has been evaluated as a 5-step company which is the most advanced in paperless trade realization (electronic trade) in the report of "A Roadmap Towards Paperless Trade" surveyed by UNECE(United National Economic Commission For Europe) in 2006.

23) Kim, E.J.. "A Comparative Study of Sea Waybill and Electronic B/L in the International Contract of Carriage", *The International Commerce & Law Review*, Vol.51, 2011, pp.317-358.

e-B/L, case studies on usage of e-B/L and the status quo of shipping companies' electronic utilization of seaway bill by reviewing extant research. At the same time, it is also required to explain the perceptions on and utilization measures for e-B/L by interviewing representatives shipping companies and conducting case studies. <Table 2> demonstrates the comprehensive analysis on the precedent studies and the derived factors to be measured in this study.

<Table 2> Summary and derivation of factors from precedent studies related to the e-B/L

Part	Researcher	Summary of research details
Necessity and concept	Sohn (2002)	• The issue of B/L in simple electronic document type is the e-B/L.
	Yang (2003), Kang and Cho(2005),	• Setting the relation with electronic media between the right and obligation according to the agreed trading for the function of actual B/L
	Lee and Chung(2007)	• Granting the legal effect on the change of right relation on the description on the electronic right registry such as the constitution, transfer and security setting through intangible electronic method instead of direct issuance of the actual B/L
	Kim(2011)	• Comparison of legal.institutional focus on the concept of the seaway bill and (electronic) B/L for international transportation agreement
Introduction	Song(2006)	• The amending in the electronic technology and legal system (Harmonization of national laws and international laws) in the entire process of sea way transportation agreement through reviewing the draft for commercial code modification in 2006
	Park(2007)	• Defining the basic points on the commercial code and the other points are defined as a presidential decree because the paper B/L and e-B/L are same in their legal nature • The introduction of e-B/L can promote the strengthening and safety of the negotiability. But the legally systemized amending for the trust on the falsification. counterfeit is necessary.
	Ahn(2008)	• Emphasizing the necessity of gradual realizing on the introduction of e-B/L and developing into the optimized type to the domestic trade environment by the leading of the government
	Chung(2008)	• The regulation on the details of procedure shall be appointed by the registration organization and the work regulation of the registration organization accordingly shall be handled in the work regulation of the registry organization.
	Choi (1997, 2006, 2008)	• Emphasizing the necessity of Korean style e-B/L through diverse analysis on actual cases
Commercialization and utilization strategy	Oh(2001)	• Suggestion of the trading cost saving, acquiring the safety of document and preventing the document delay by the reason of using e-B/L oriented to the Bolero e-B/L and emphasized the making precise regulation book, user oriented promotion and improving the structure of expensive user cost.

Part	Researcher	Summary of research details
	Woo(2003)	<ul style="list-style-type: none"> Emphasized the necessity of establishing special law or rearranging the current laws, improving and enhancing the user structure of domestic and international network systems.
	Kim and Baek(2003)	<ul style="list-style-type: none"> Emphasized the security for the legal and technical problems focused on the safety through case analysis on Bolero e-B/L.
	Cho and Kang (2008)	<ul style="list-style-type: none"> Emphasized the right transfer function and negotiability of the e-B/L and suggested the important solution of electronic solution type and technical base acquiring
	Lee and Chung (2007)	<ul style="list-style-type: none"> Emphasized the diversification of e-B/L operation model and right registration and operation through trusted operation organization. Emphasized the provision of the international regulation system and implementation under upper class concept among the country unit electronic trading platform through the national cooperation
	Kang et al(2011)	<ul style="list-style-type: none"> Emphasized the practicalization of e-B/L in entire electronic trading process and the main solution for improving the acquiring the negotiability, expansion of domestic and foreign infrastructure, strengthening the promotion to the electronic commercial trading and realization of the service cost.
	Chung(2011)	<ul style="list-style-type: none"> Emphasized the meaning of Korean style e-B/L in national class electronic trading network Emphasized the conflict resolution on the amending and correction on the electronic document for the activation of Korean style e-B/L, system improvement such as the data management and improving the service fee
	Chae et al(2012)	<ul style="list-style-type: none"> Emphasized the necessity of improving on the lack of compatibility, lack of the legal.systematic provision for accident, problem of cost, passive participation of the bank

III. The current state of electrification of operational processes in shipping companies.

According to the studies reviewed in the previous section, the expected effects by using e-B/L are augment of safety and efficiency in international trade, saving the B/L negotiation costs and the innovation on trade processes. In spite of such advantages of e-B/L and the expected effects, it is considered that the usage of e-B/L in practice is at the low level. This section will investigate the state of electrification of operational processes in prominent shipping companies and also explore the perceptions of shipping companies on e-B/L by interviewing them.

1. The state of electronification of operational processes in prominent shipping companies

It is seaway bill (hereinafter, SWB) with which replaces paper documents related to transportation by using EDI in Europe. The SWB, issued in a registering type, usually does not prove the title but simply deliver information as SWB is not a title document. In this vein, it is very easy for SWB to be replaced by EDI. The reason why SWB became the first electronic document is that SWB separates the title with the document with annotating no significant meanings on the holding the document. As SWB will not be regarded in principle as B/L, a document of title with reliability and negotiability, however, SWB cannot be deemed as electronification of B/L.

From a different angle, it can be regarded as a kind of electronification for the Letter of Guarantee: L/G provided by a shipping company to a specific cargo owner. This looks to be a type of transformation in customer service that allows important customers, whose credit is reliable and who has maintained a long-term business relationship, to take delivery of cargo only with letter of guarantee signed by the customer rather than asking the joint surety to the bank. In practice, some shipping companies are passive to offer this service because they take an excessive responsibility when they deliver cargo without collecting B/L. In comparison with e-B/L, there exists a limitation in the various alternative documents that shipping companies are using to overcome the paper B/L crisis.

When it comes to transportation securities, a considerable portion of trading process in Korea is being performed in an electronic method, but there is a debate in the electronic issuance of original B/L and its negotiation. In addition, many differences appear in the pattern of transporting cargo depending on the exporting goods and importing goods. The following <Table 4> is a summary of the electronic operations on the transportation securities and the state of on-line service for each stage of transportation procedure.

<Table 4> The electronic operation on the transportation securities for each stage of transportation procedure²⁴⁾

	Procedure (Description)	Electronic operation
1	Reservation of ship by the sender (Booking)	In service
2	Submission of shipping request including the packing list of the sender	In service
3	Provision of transportation securities by the transporter and transmitting to the sender	In service
4	Acceptance and confirmation (Consent) on the transportation securities by the sender.	In service
5	Correction on the details of B/L at the acceptance and confirmation on the transportation securities by the sender	In service
6	The electronic transfer of the description and title on the B/L by the B/L title holder	In service
7	The electronic acceptance/confirmation on the description and title by the assignee of title	In service
8	A few times of transfer for the description and title of the B/L in the electronic acceptance/confirmation by the assignee of the title	Not service
9	Tracking the location of cargo	In service
10	Notification of the cargo arrival	In service
11	The issuance of the deliver order by the transporter	In service

Most large shipping companies are processing the transportation documents in an electronic way by establishing an independent document center, but it is identified that the service for the issuance of B/L and negotiation is not provided. It is also found that most shipping companies process document electronically only for important customers in a closed network which utilizes their own standard and system (Refer to <Table 5>).

Almost all large shipping companies establish and operate the electronic platform for the systematic working for the electronic document with placing independent document centers abroad. However, such electronic operations are performed as customer service for important customers. Also, it is investigated that the electronic operations only focus on the electrification of alternative documents to B/L, which depicts the service relating to the issuance and negotiation of e-B/L are not provided.

24) Refer to the e-Service website of Hyundai Merchant Marine and Hanjin Shipping and interview

<Table 4> The state of electronic operation in transportation securities for each
transportation work procedure²⁵⁾

	Stage (Description)	HMM	Hanjin Shipping	Maersk	APL	OOCL	NYK	MOL	Hapag Lloyd	CMA CGM
1	Shipping schedule	○	○	○	○	○	○	○	○	○
2	Freight search	○	○	○	○	○	○	○	×	×
3	Ship booking	○	○	○	○	○	○	○	○	○
4	Submission of shipping request	○	○	○	○	○	○	○	×	○
5	Provision of B/L	○	○	○	○	○	○	○	○	○
6	Transmitting of Dangerous cargo	○	○	○	○	○	○	○	○	○
7	Provision of seaway bill	○	○	○	○	○	○	○	○	○
8	Transmitting of B/L copy	○	○	○	○	○	○	○	○	○
9	Transmitting of seaway bill copy	○	○	○	○	○	○	○	○	○
10	Provision of Letter of Guarantee (L/G)	×	×	×	×	×	×	×	×	×
11	Transmitting the copy of Letter of Guarantee	×	×	×	×	×	×	×	×	×
12	Issue of delivery order	○	○	○	○	○	○	○	○	○
13	Transmitting the copy of delivery order	○	○	○	○	○	○	○	○	○
14	Confirmation on the description	○	○	○	○	○	○	○	○	○
15	Issue and negotiation of e-B/L original	×	×	×	×	×	×	×	×	×
16	Cargo tracking	○	○	○	○	○	○	○	○	○
17	Notification of cargo arrival	○	○	○	×	×	×	○	×	×
18	Report to the custom house	○	○	○	○	○	○	○	○	○

Logistics companies (International freight forwarders) has tackled this issue by directly accessing to the on-line platform provided by shipping companies to create and confirm the documents. As for export, in particular, a majority of functions that original B/L (Master B/L) can perform is replaced by SWB which can be processed in an electronic way. On the other hand, the survey shows that the request for original B/L is common in most import cases.

25) Refer to the e-Service website of major shipping companies and interview

IV. The impediments to utilization of e-B/L in shipping companies

EUKOR Car Carriers and Hyundai Glovis which carry automobiles manufactured by Hyundai Motors use Korean E-B/L Service of uTradehub operated by Korea Trade Network. However, this is considered as a special case which operates for the benefit²⁶⁾ of the particularly large cargo owner owing to the special relations with Hyundai Motors.

Contrarily, even large transport companies do not use at all or do not actively utilize the e-B/L. This study aims to suggest implications to foster e-B/L in practice by looking into the perceptions of large shipping companies on e-B/L. The cases collected from large shipping companies in Korea and interviews with them revealed main impediments to e-B/L utilization: (1) the negative perception on e-B/L utilization, (2) reliability issues in using e-B/L, and (3) technical issues in using e-B/L.

1. Negative perception on the utilization of e-B/L

Among the participating companies, Korean shipping companies considered the original function and meaning of the B/L as a document for transportation very seriously. It can be understood that they prioritize the risk and responsibility in the entire process of transportation and delivery of cargo. Most shipping companies interviewed preferred the use of B/L by far and they tended to solve many problems arising from the use of conventional B/L by substitution with seaway bill (SWB) rather than by introducing e-B/L. This is because, if shipping companies replaces B/L with SWB, they can allow the consignee on SWB as the recipient on transportation contract, to claim the cargo without presenting B/L.

As can be seen in the case of Bolero, the negative perception can be created by cost issues, such as excessive membership and maintenance fees for issuance and negotiation of e-B/L. From shipping companies' perspective, it can be an extra burden in addition to the costs involved in

26) EUKOR Car Carriers possessed 20% share of Hyundai and KIA Motors and it is greatly dependent on the 'Europe-Asia' route for exporting the cars from Hyundai and KIA in Korea to Europe and importing the cars from European factories to Asia including China.

transportation activities because e-B/L is a contractual issue only between shippers and consignees.

In practical operations, the workload can be doubled without process innovation because additional system operations to use e-B/L needs to be performed. In Korea, they have to use the additional system of e-B/L Korea from Korea Trade Network (KNET) to issue and negotiate the e-B/L. In this case, it appeared that the negative perception was very strong due to disclosure of confidential marketing information as well as concerns on the compatibility with individual company's e-service platform.

2. Reliability issues in the utilization of e-B/L

The current e-B/L in Korea is reputed to be reliable and safe by the users because the government established the project and appointed an organization to handle e-B/L by laws in Korea.²⁷⁾

However, failures are always probable due to the unexpectedly instable internet line and errors in accessing to the server when beneficiary cargo owner tries to download the e-B/L from the server to confirm the changes regarding the transfer of e-B/L. At this time, it can be recognized as confirmed by the beneficiary because the access by the beneficiary and the moment of downloading e-B/L are recorded although beneficiary, in fact, cannot confirm the changes due to system failures. The shipping companies are well aware of this limitation because the laws does not state any electronic monitoring system and post-hoc measures to tackle these problems.

Moreover, the current system imposes too many responsibilities on shipping companies in the negotiation and management of e-B/L. This issue leads shipping companies to the issue of securing reliability and taking management responsibility. Consequently it can be interpreted by shipping companies that they become responsible for management from trading of goods by taking the responsibility of negotiation and management of e-B/L. It is unreasonable for shipping companies because they take additional obligations and responsibilities which have no relationships with their transportation contract.

When it comes to legal issues on reliability, the definition on the electronic signature is the certified public electronic signature related to the implementation of regulation for e-B/L in the

27) Lee, S.C., and Kim, H.S. 2011, Op, cit, p.422.

commercial code of Korea, so the certified public electronic signature is requested in the negotiation process of e-B/L. The certified public electronic signature is specified as the electronic signature based on the public certificate²⁸⁾. The issue of the public certificate, however, is difficult for foreigners and the actual issuance is almost impossible for foreign companies and corporations because they are not specified in the code. Therefore, shipping companies involved mainly on the transportation of importing and exporting cargo in trading can hardly rely on the use of e-B/L.

3. Technical issues in the utilization of e-B/L

The large shipping companies emphasized the lack of the compatibility among the systems or configuration elements of system in terms of the current e-B/L. They also insisted the difficulty in an active usage of e-B/L due to no link between trading companies and banks in the system of shipping companies even though the system to use the e-B/L may be provided. The domestic and international e-B/L system cannot provide the links with banks, which limits the banks to playing a small part of functional roles.²⁹⁾ Such factor becomes a big obstacle to motivate and suggest the necessity for shipping companies to introduce or use the e-B/L actively.³⁰⁾

The demand and utilization nature of e-B/L can be categorized given the scale and characteristics of the individual shipping company, such as the cargo handling, main navigational routes and quantity of handled cargo. It is suggested that the re-constitution and links of the optimized e-B/L operation system given such categorization is required. At the same time, issues caused by the lack of the compatibility between the countries and foreign companies are critical because the majority of customers of shipping companies are actually foreign companies. In case of foreign shipping companies, this is a critical issue between the headquarter and Korean branch.

In case of Korean e-B/L, it is managed and operated by Korea Trade Network(National Single Window, NSW), appointed as a trusted third party. Such operation oriented in the single window system has many advantages, but it has a limitation to provide the tailored service with reflecting

28) Paragraph 3 Article 2 (Definition) of electronic signature method, Clause 6 Article 15 (Issue of public certificate), Article 13-2 (Standard and method of authentication) of electronic signature method (Decree from Ministry of Security and Public Administration

29) Jeong, Y.S.. 2011, Op, cit, p.74.

30) The fact that the transporter substituting the bank or newly established company handle the payment for the own trading degrades the trust of the participants extremely. In case of e-B/L, Foreign Exchange Bank participates at present.

the characteristics of shipping companies as an individual user. Therefore, it will be necessary to modify some technical aspects and to improve the customized service by providing the securement of stability on message to be arisen from the actual operation of e-B/L, network safety and co-operated actions against system failures.

V. Conclusion

The business environment has been rapidly electronified owing to the technological development of computer, internet and information & communication. International trade has developed to the era of paperless trade which transforms the traditional transaction methods in trade into the electronic processes. Moreover, carriage of cargo becomes speedier and the multimodal transportation expands owing to the development of transport technology, which well advance the responses of legal system in the international trade. The introduction of e-B/L is being accomplished as a specific mean to overcome the 'crisis of B/L' and 'realization of electronic trade' resulted from such environmental changes.

It can be evaluated that a lot of studies were conducted with respect to e-B/L within a short period of time. But the previous studies mainly focused on the analysis and cases for the problems related to the review on the legal or functional features, expansion and utilization.

This study was conducted in view of shipping companies as a key entity in the concept of the B/L and use of e-B/L. By means of this, this study highlighted many factors (Restrictions and obstacles) related to the concept and utilization of e-B/L, cases of e-B/L and the stage of electronic utilization of seaway bill by shipping companies.

First of all, this study identified the concept and necessity of e-B/L. It showed that shipping companies understand e-B/L as an electronification of B/L itself and prefer using seaway bill (SWB) rather than taking the concept of the e-B/L as a replacement and complement of the B/L. In addition, it illustrated that e-B/L widely used in the shipping company at present is not the actual e-B/L but the modification to the electronic document by a simple scanning of the current paper B/L.

Analysis of previous studies on the introduction and use of e-B/L derived several implications

as follows. First, conversion to the paper B/L was considered in the system operation of e-B/L. Second, the title registration system was adopted as a complementary method for the flexibility which is the most important in most cases of e-B/L. Third, intervention of shipping companies as a transporter and financial institutions was allowed.

Secondly, the understanding and opinion on the state of on-line service and utilization of e-B/L related to the transportation of shipping company were surveyed.

In case of major shipping companies, online service was provided to support customers. But e-B/L was not issued and negotiated by all shipping companies. The e-B/L was issued and operated partially between the cargo owner and the special shipping company not in the special relation. But it is considered as the support to the on-line negotiation resulting from the entire electronic trade transaction of the cargo owner.

From shipping company's perspectives, following obstacles deter further development of e-B/L: negative attitude on the utilization of e-B/L; the matter of trust on the utilization of e-B/L; and technical issues in relation to the use of e-B/L.

In this era of computer and mobile technology, it can no longer be postponed to introduce e-B/L and realize the electronic trade. If plans to encourage e-B/L are made in detail, reviewed and adopted to establish a system to play a dominant role in the age of electronic trade, the system itself would create considerable added value in addition to the profit resulting from better efficiency in trade transaction.

Therefore, a systematic survey on more samples of the representative shipping companies is necessary in future studies. Moreover, additional studies are required to have empirical analysis on the multiple shipping companies apart from the analyses of the interview and survey conducted on a few shipping companies.

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국문초록

주요 선사의 전자선하증권 도입 현황 및 활성화 저해요인에 관한 연구

이 희 용*

최근에는 전자결제의 핵심요소인 선하증권(이하 B/L: Bill of Lading)의 전자화에 대한 관심과 요구가 증대되고 있는 실정인데, 이는 무역업체 및 무역유관기관이 전자적인 ‘단절 없는 무역’을 수행하기 위해서는 필수 요소이기 때문이다. 그러나 원래 선적 및 운송 관련 서류인 선하증권의 전자화에 대하여 정작 주요 선사에서는 전혀 활성화 되지 않고 있다. 이러한 배경 및 원인에 출발하여 본 연구는 첫째, 기존 전자선하증권 관련 문헌 및 연구 논문들에 대하여 분석하였으며, 둘째, 국내외 대표 선사의 운송단계에 따른 전자화 현황에 대하여 조사하고, 셋째, 이와 더불어 국내 주요 선사의 입장에서 전자선하증권의 의미와 이에 대한 인식 실태 그리고 활성화 되지 못하고 있는 저해요인에 대하여 분석하였다. 전자선하증권 및 전자무역의 전체 단계를 구성하는 핵심 참여자인 선사의 의견 및 인식에 대한 분석을 통하여 향후 국가적인 역량을 집중시켜 추진하고 있는 전자선하증권 시스템의 활성화 및 발전에 대한 제언을 하고자 하였다.

먼저, 전자선하증권에 대한 개념과 필요성에 대한 연구를 수행하였다. 이를 통해 선사에서는 전자선하증권을 선하증권 자체의 전자화로 이해하고 있으며, 선하증권의 대체 및 보완으로 전자선하증권의 개념보다는 화물운송장(SWB) 등을 더 선호하고 있는 것으로 파악되었다. 다음으로는 선사의 운송 업무 관련 온라인 서비스 현황과 전자선하증권에 활용에 대한 인식 및 의견을 조사하였다. 주요 선사의 경우 거래 고객을 위하여 대부분의 업무를 온라인 서비스하여 지원하고 있었다, 그러나 전자선하증권의 발행 및 유통은 모든 선사에서 이루어지고 있지 않았다.

선사의 입장에서 살펴 본 전자선하증권의 활성화 저해요인으로는 첫째, 전자선하증권에 활용에 대한 부정적 인식과 둘째, 전자선하증권 활용에 대한 신뢰성 문제 그리고 셋째, 전자선하증권 활용에 대한 기술적 문제를 대표적으로 말할 수 있다.

향후 연구에서는 보다 다수의 대표성이 있는 선사 표본에 대한 체계적인 조사가 필요할 것이다. 이와 더불어 소수의 선사에 대한 인터뷰 및 실태 조사 분석방법에서 벗어나 다수의 선상에 대한 실증 분석을 통한 추가 연구가 반드시 이루어져야 할 필요가 있을 것이다.

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