Switching paper to electronic bills of lading: legal perspective and reform options for Vietnam

Thi Mai Anh Doan

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SWITCHING PAPER TO ELECTRONIC
BILLS OF LADING – LEGAL PERSPECTIVE
AND REFORM OPTIONS FOR VIETNAM

By

DOAN THI MAI ANH

Vietnam

A dissertation submitted to the World Maritime University in partial
fulfillment of the requirements for the award of the degree of

MASTER OF SCIENCE

In

MARITIME AFFAIRS
(MARITIME LAW AND POLICY)

2018

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DECLARATION

I certify that all the material in this dissertation that is not my own work has been identified and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views and are not necessarily endorsed by the University.

(Signature):

(Date): September 18, 2018

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Assoc. Professor

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Title of Dissertation: **Switching paper to electronic Bills of lading – Legal perspective and reform options for Vietnam**

Degree: Master of Science

The dissertation is a study on the legal aspects of electronic Bills of lading with the objective of identifying the obstacles and difficulties that will need to be addressed before such a system can be adopted in Vietnam in order to promote the paperless era in the maritime shipping in this country.

E-commerce is growing rapidly, traditional transactions and documentation are gradually being replaced by electronics. With the advantage is fast, low cost, many current paper documents in the maritime industry, including Bills of lading has been replaced by electronics. The attributes of traditions functions of paper Bills of lading being recognized as receipt of goods, as a contractual document and as document of title, the questions have arisen that can the electronic Bill replicate these functions, whether the negotiability is achieved when using electronic systems and how the transferability will be made. In addition, the issues of legality and confidentiality related to electronic bills of lading should be examined.

From that point of view, some of the legislative forums, such as UNCITRAL Model law on electronic commerce and the CMI Rules for Electronic Bills of lading shall be investigated. Taking into account with analysis of three official electronic bills of lading platforms, namely Bolero, essDocs, E-titleTM, the problems of negotiability and transferring process have been a major source of concern of merchants in trading over the world.

Various arguments and defects of the Vietnamese legal framework will be critically examined with the objective of finding practical and viable option for legislation system in addressing challenges of electronic Bills of lading in Vietnam.

**Keywords:** Electronic Bills of lading, Bills of lading, Contract of carriage, Transport document
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<td>Bill of lading</td>
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<td>BIMCO</td>
<td>The Baltic and International Maritime Council</td>
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<td>COGSA</td>
<td>UK’s Carriage of Goods by Sea Act 1992</td>
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<td>CMI</td>
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<td>E-bills</td>
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<td>EDI</td>
<td>Electronic Database Interchange</td>
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<td>ICT</td>
<td>Information and Communications Technology</td>
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<td>ICC</td>
<td>International Chamber of Commerce</td>
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<td>IGP&amp;I</td>
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<td>KTNET</td>
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<td>P&amp;I</td>
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<td>SDR</td>
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<td>SWIFT</td>
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<td>TT Club</td>
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<td>UN</td>
<td>United Nations</td>
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<td>UNCITRAL</td>
<td>United Nations Commission on International Trade Law</td>
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<tr>
<td>UNCTAD</td>
<td>United Nations Conference on Trade and Development</td>
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CHAPTER I
INTRODUCTION

1.1. Background

The maritime shipping, since its inception, plays an essential and crucial role in global trade. If transport is generally the lifeblood of the national economy, shipping, in particular, can be considered as the lifeblood of the foreign trade activities.

The global trade in goods involves many parties including carriers, distributors, cargo interests, banks, insurers, government agencies, terminals, and customs authorities. Traditionally, many paper documents need to be generated, copied and sent all over the world. With advancement in Information and Communications Technology (ICT), some of the above parties were quick to take advantage of Electronic Database Interchange (EDI) systems capable of transferring data from computer to computer to speed up transactions in their trades. Transport documents such as invoices, booking notes, booking confirmation slips and even sea waybills became routinely generated and transmitted electronically (Richard, 1992). Among them, it is impossible not to mention a document that is assumed "soul" of the global trade documents, which is the bill of lading (B/L). B/L has been around for hundreds of years, with the initial role of just a receipt of goods between the shipper and the carrier. Along with the development of international trade exchanges, the B/L also gradually formed functions to meet the requirements of the parties involved in the field of import and export of goods, international payments as well as cargo insurance (Vo et al., 2010). The paper form of B/L, with three functions (i) as cargo receipts for shipment, (ii) as evidence by the contract of carriage by sea, and (iii) as document of title, becomes the leading form in maritime shipping.

The concept of e-Bills has been around for almost thirty years, but until now they have not widely accepted. One of the key obstacles the e-Bills “has faced is the shear success of the traditional paper B/L” (Deering, 2014). Finding an electronic solution acceptable to all parties in trade, that fulfills all of the functions of paper bills
has proven to be a difficult task. However, with the development of e-commerce, e-Bills must be an indispensable trend which surely one day will replace old paper (Baltic briefing, 2015). Recognizing the importance of this fashion, on December 2008, UN General Assembly was adopted Rotterdam Rules\(^1\), in which offering paperless documents is a major selling point. In October 2015, the International Group of P&I Clubs\(^2\) (IGP&I) approved three electronic systems including BOLERO\(^3\), essDOCS\(^4\), and E-title\(^5\). It means that a P&I Clubs will provide cover for third-party liabilities arising under carriage covered by these three electronic trading systems, as a paper B/L (Marsh, 2016). Moreover, in November 2014, BIMCO, in response to growing interest from the dry cargo bulk carrier in use of electronic documentation, have developed a specific clause for Charter parties (the BIMCO e-Bill Clause\(^6\)). Together with the proliferation of the use of electronic trading systems throughout the wider shipping industry, it should be clear that now is the new era of the use of e-Bills (Sally-Ann & William, 2016). The key advantage of using e-Bills compared to traditional paper B/Ls is threefold; it saves time, reduces administrative burdens and, in many cases, does away with the need for an owner to have to decide whether to

---

\(^1\) UN Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea

\(^2\) IGP&I comprise 13 principal underwriting associations between them provide liability cover (protection and indemnity) for approximately 90% of the world's ocean-going tonnage.

\(^3\) Bolero is an e-Bills system established in 1998 by Swift and the global logistics and insurance industry. [http://www.bolero.net/](http://www.bolero.net/)

\(^4\) essDocs is e-Bills system was established in 2005 with a mission is to enable paperless trade. [https://www.essdocs.com/](https://www.essdocs.com/)

\(^5\) E-Title Authority was established in 2004. [http://www.e-title.net/](http://www.e-title.net/)

\(^6\) The BIMCO Electronic Bills of Lading Clause:

(a) At the Charterers’ option, bills of lading, waybills and delivery orders referred to in this Charter Party shall be issued, signed and transmitted in electronic form with the same effect as their paper equivalent.

(b) For the purpose of Sub-clause (a) the Owners shall subscribe to and use Electronic (Paperless) Trading Systems as directed by the Charterers, provided such systems are approved by the International Group of P&I Clubs. Any fees incurred in subscribing to or for using such systems shall be for the Charterers’ account.

(c) The Charterers agree to hold the Owners harmless in respect of any additional liability arising from the use of the systems referred to in Sub-clause (b), to the extent that such liability does not arise from Owners’ negligence.

Under sub-clause (a) of the BIMCO clause, owners and charterers agree that the e-Bills issued will have the same effect as a paper BL.
deliver a cargo without the original B/L against a letter of indemnity (LOI). Instead of requiring numerous originals and copies that take several days to process, only one electronic document is securely produced and processed through the system, eliminating document delays as well as the potential for fraud.

As a maritime nation, Vietnam, located on the East-West sea route through the South China Sea, has a coastline of 3,260 km with many deepwater ports. There are now over 100 large ports with total length of about 30,000m (Nguyen, 2015). Obviously, with the rapid growth of international trade, Vietnam's shipping industry has tremendous opportunities. Statistically, the volume of international cargo transported by sea accounted for 80% total import and export volume of Vietnam (Bui Ba Khiem, 2017). Vietnam, as an importer and exporter, therefore has an important interest in ensuring efficient shipping using transport documents, particularly in the electronic commerce regimes both at the national and international levels. Vietnam also cannot stand out of the growing trend of global shipping, with the widespread popularity of e-Bills. However, Vietnam’s legal framework and electronic infrastructure recently are not adequate for responding to the challenges of the e-Bills (Nguyen, 2015).

This research intends to analyze the present situation of using e-Bills, compare and contrast the paper B/L and e-Bills in the legal perspective, discuss possible solutions for a successful substitution of paper B/L with e-Bills and focus on challenges and applicability of the e-Bills for Vietnam. Through the study, the effectiveness of the e-Bills in Vietnam can be achieved and the policy-maker can make better use of data, thereby contributing to implementation e-Bills with the prevention of the claims or passive in dealing with international possible disputes of Vietnamese enterprises.

1.2. Aims and Objectives

The aims of this research are to:

(a) determine the extent to which e-Bills have become an alternative to the paper B/L.
(b) account for the legal and practical reasons for the failure of e-Bills to successfully substitute their electronic counterparts;

(c) discuss the legal and policy implications of the use of e-Bills for maritime transport of goods to and from Vietnam.

The objective of this dissertation is to help Vietnamese governance, shipping company, import-export businesses, bank, insurance enterprises recognize the necessity of understanding e-Bills in order to catch up the developing trend of global trade if they wish to avoid going into unwanted disputes and claims.

Thus, several questions will be examined and answered in this research. First, what is B/L and e-Bills? Why should we use the paperless form in this era? Second, how to switch B/L and e-Bills? What is the technology platform to do this? How to e-Bills digitize the core functions of paper B/L? How do these electronic trading systems work? Third, what is the legal framework of e-Bills? Do international cargo conventions apply to e-Bills? Fourth, what is the current status of using e-Bills in Vietnam? How to apply and use e-Bills in Vietnam?

After having studied thoroughly, all the above questions will be expected to have the suitable answers with the legal perspective of e-Bills are clearly identified and analyzed.

Furthermore, it is expected that this study will be a reference source for policy-makers in Vietnam in process of improving legal frameworks for e-Bills, help provide and utilize the lessons from other countries for applying e-Bills.

1.3. Literature review

Many scholars have studied on the reasons for the failure of e-Bills to achieve functional equivalence with their paper over the past.

For example, the question “Can the functions of a paper bill of lading be replicated by electronic Bill of lading?” had been arisen by (Stephen C Chukwuma, 2013) in the journal of isste.org. He concluded that paperless B/Ls is realistic and
necessary. The e-Bills have fully functioned as paper B/Ls, though, with different characteristics and nature.

Another important research on e-Bills is “Ocean Bills of Lading: Traditional Forms, Substitutes, and EDI Systems”, edited by (A.N. Yiannopoulos, 1996). The book focuses on EDI communications that may function as transferable B/L. One of the main themes resolved in this book is the ability to change the B/L without changing its substance. Modern computer technology makes it possible to connect all parties involved in global trade with the computer system that simulates all the features of the paper B/L. Shipper, receivers, consignees and financial banks will participate in this technical framework. Each party shall have the appropriate authority to publish, modify, view or change e-Bills. Encode the technology will ensure the authenticity of the electronic signature, etc. So, technically, an e-Bills can be imitated all features of a regular bill.

Additional findings by (Jafari, 2015) in the work on “The concerns of the shipping industry regarding the application of electronic bills of lading in practice amid technological change” examined the legal aspects of adopting e-Bills as a paper document. The author also discussed the present situation of the acceptability of e-Bills with reference to some national jurisdictions such as Australia, China, India, and South Korea. It will be a reputable source to compare and analyze the current situation of Vietnam with other countries, in order to find the possible solutions for the implementation of e-Bills in Vietnam.

However, none of those research can provide the necessary answers to the issues raised in this study, especially for the implications of e-Bills in Vietnam, within the context of relevant international regimes and frameworks. Moreover, this research will analyze three electronic systems BOLERO, essDOCS, and E-title, which are approved by IGP&I to find the reasons why e-Bills can replicate the legal characteristics of a paper one.
1.4. Methodology

As expressed above, the main objective of this research is to suggest some useful recommendation for the adoption of the new issue in context of e-bills in the Vietnamese law system.

This thesis begins with the introduction the basic information of B/L, which will refer the literature review base on examining English laws and existing regulations of international conventions in this field. In the next part of e-Bills, the comparative and critical methods will be applied in order to examine the pros and cons of them. In the Vietnamese part, criticism and analysis methods is used to assess the current Vietnamese legislation and to offer the recommendations.

In this study, the regulations and laws, both from national and international levels are the main sources. From the national law perspective, English laws and Vietnamese laws will be mentioned and analyzed. In English laws, the Carriage of Goods by Sea Act 1992 (COGSA), Sale of Goods Act 1979 (SGA) and will be the main regulations. In Vietnamese laws, Maritime Code 2015 and Law on e-transactions 2005 are the primary rules. Besides these two Civil Code 2005, Cybersecurity Law 2018 and some other laws will be involved. In the international level, several conventions, such as the Hague Rules\(^7\), the Hague-Visby Rules\(^8\), the Hamburg Rules\(^9\), and the Rotterdam Rules will be referred. Other sources in relation with electronic commerce as CMI Rules, UNCITRAL Model Law will be examined.

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\(^7\) The Hague Rules: International Convention for the Unification of Certain Rules of Law relating to Bills of Lading 1924


1.5. **Dissertation structures**

Chapter 1 provides a general background of the chosen topic. It sets out the research questions and literature review and describes the adopted methodology to achieve the objectives of the dissertation.

Chapter 2 examines the definitions of the B/L, and its functions in global trade. The disadvantages of the paper B/L and the emergence of e-Bills are also analyzed. Also covered under in this Chapter are the criteria of the B/L to be an electronic document.

Chapter 3 discusses the legal framework of the e-bills, in particular, the international legal instruments views against the criteria for e-Bills, then the e-Bills systems are also covered in this chapter.

Chapter 4 analysis in particular Vietnamese legislation and looks at the options open to Vietnam in order to promotion of the paperless era in the maritime shipping in this country.

Chapter 5 concludes the paper with the position that, though much attempts has been accomplished to replicate the traditional functions of the e-Bills, greater tasks lie ahead, especially in developing countries such as Vietnam.
CHAPTER II
THE BILL OF LADING IN THE PAPERLESS ERA

The objective of this Chapter is to provide a brief introduction to help give readers an overview of uses of the paper B/L and the problems created by the transition to its new form as an electronic document. Before considering electronic developments, the chapter begins with very briefly some features of the traditional paper B/L, followed by an analysis of the reasons for the switch from a paper to an electronic document. Some of the strengths and weaknesses of the paper B/L will be addressed, as well as the reasons why it is necessary to study the use of e-Bills. Finally, the issues surrounding e-bills, their transmission by EDI, and the necessary criteria for E-bills based on a functional equivalence approach.

2.1. The Bill of lading as a paper document

2.1.1. The definition

In maritime shipping, the bill of lading, in the simplest way, can be described as a receipt of the loading (lading) (Georgios, 1999). Article 1 of Hamburg Rules, 1978 states that "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”.

The Court in B.M. Ltd. v. Woermann-line, 2009\textsuperscript{10} defined a B/L as “A written document signed on behalf of the owner of the ship, in which goods are embarked, acknowledging the receipt of the goods and undertaking to deliver them at the end of the voyage, subject to such conditions as may be mentioned in the bill of lading. The

\textsuperscript{10} B.M. Ltd. v. Woermann-Line (2009) 13 NWLR (Pt.1157) 149 S.C
bill of lading is, therefore, a written contract between those who are expressed to be parties to it”.

Mustill LJ in The Delfini\textsuperscript{11} case pointed up a legal definition of a B/L as follows (Kamal, 2017):

“1- It’s a symbol of constructive possession of the goods which (unlike many such symbols) can transfer constructive possession by endorsement and transfer.

2- It’s a document which, although not itself capable of directly transferring the property in the goods which it represents, merely by endorsement and delivery, nevertheless is capable of being part of the mechanism by which property is passed”.

Therefore, a B/L is a transport document, which is issued by or on behalf of carrier (Guenter & Reynolds, 2012). It certifies that the carrier has received this shipment for carriage on a vessel named thereon or that cargo has fallen under the responsibility of the carrier to load the cargo on board. And the carrier shall deliver the goods to the designated delivery point and the goods will be delivered as “what he received as he received it”, unless the ship encounters another unexpected incident (Gaskell et al., 2003).

\textbf{2.1.2. The functions of Bill of lading}

The B/L, since its inception, has continued to be an indispensable document in the shipping industry. Although its face and function have changed over time, it has been recognized as a vital document by practitioners and legislators (Ibrahim Sy, 1999). Because the B/L enjoys such widespread use, it has been necessary to strive for its standardization in form and function to effectively serve the international shipping industry. Though shipping parties may treat the B/L differently, according to which international convention governs the transaction, it usually serves one of three functions which will be discussed in details below (Williams, 1991).

\textsuperscript{11} THE DELFINI [1990] 1 L1 Rep 252
2.1.2.1. As a receipt of the cargo for shipment

This function is the original function of the B/L. Historically, this function was formed from the "Ship's register", which was based on the actual need that merchants no longer traveled with their cargo, but rather would send this form to their correspondent at the destination port (Aikens, Lord, & Bools, 2015). B/L normally is issued based on the information on the “mate’s receipts”, which are the ship’s records of the goods loaded (Gaskell et al., 2003).

It, usually acknowledges that the goods have been shipped on board and may put a figure on the goods according to quantity, descriptions, shipping marks, the loading and discharge ports, the identity of the vessel, the date of loading/receiving, etc., (Gaskell et al., 2003). Most B/L printed forms contain the phrase “in apparent good order and condition” or “said to contain”. The B/L is referred to as being a clean B/L, except it is marked with comments about the status of the cargo, then it is referred to as being “claused” (ICS, 2014).

A B/L is prima facie or, in the certain case, conclusive evidence of the facts stated therein – for instance, the leading marks or quantity, quality and the condition of the goods (Wakim, 2017). According to Hamburg Rules, the statements in the B/L represent “prima facie evidence against the carrier of the taking over or,..., the loading by the carrier of the goods”\textsuperscript{12}, while the Hague-Visby Rules state that B/L is “prima facie evidence of the receipt by the carrier of the goods as described therein”\textsuperscript{13}. The shipper can use this evidence to show that the carrier breached his obligation to look after the goods under the agreement or international rules (Wakim, 2017). From the other side, international conventions applied the principle that the B/L is conclusive evidence where it has been transferred to a lawful holder of the bill - “the third party acting in good faith”\textsuperscript{14} (Senekal, 2010).

\textsuperscript{12} Article 16 rule 3 of Hamburg Rules

\textsuperscript{13} Article III rule 4 of The Hague-Visby Rules

\textsuperscript{14} Ibid
2.1.2.2. As evidence of a contract with the Carrier

The second function of a B/L is formed in the 16th century when, due to the increasing large number of cargo carried per vessel (Murray, 1983).

The B/L, in itself, is not the contract of carriage of cargo but merely evidences of it (Euarjai, 1999). From a commercial point of view, the B/L is signed after a contract of carriage between the shipper and the carrier is concluded, resulting in the fact that the date on the B/L cannot be the same as the date of the contract and so it is the only evidence of the contract (ICS, 2014). The Ardennes (1950)\(^\text{15}\) is a good case to demonstrate the status of the B/L as evidence only. In this case, the shipper needed his cargo of Spanish oranges to reach London before the date when an increase in import duty was due to take effect. He was told by the owner that the ship would proceed directly to London. However, the owners decided to make Antwerp the ships first port of discharge so that the oranges did not reach London until after the crucial date. The owners argued that they had the right to call at Antwerp first under the liberties clause in the printed wording of the B/L but Lord Goddard, in confirming the shippers right to recover damages for breach of contract, stressed that the contract came into existence before the B/L was signed. So, it can be stressed that a B/L is evidence of a contract and indeed, as Lord Goddard said, it may be the best evidence of the contract (ICS, 2014).

On the other hand, when the B/L is transferred to a third party, it becomes a conclusive evidence of the contract between the carrier and lawful holders or subsequent endorsees of B/L (Kenneth, 2016). Under COGSA\(^\text{16}\), the B/L, in this case, constitutes the contract of carriage between the carrier and the subsequent transferees. In case Leduc v Ward\(^\text{17}\), it was held that: “Where the B/L is indorsed over, as between

\(^{15}\) The Ardennes (1950) 84 Lloyd’s Rep 340

\(^{16}\) UK’s Carriage of Goods by Sea Act 1992

\(^{17}\) Leduc v Ward (1888) 20 QBD 475
the shipowner and the endorsee the B/L must be considered to contain the contract, because the former has given it for the purpose of enabling the charterer to pass it on as the contract of carriage in respect of the goods”.

2.1.2.3. As a document of title

The “mystique surrounding the B/L flows largely from its third, and main, function, namely the ability to serve as a means of passing title to the cargo which it describes” (Ibrahim Sy, 1999). The B/L evolved from a record of goods into a document of title probably sometime in the 18th century with the recognition by the courts (Mitchelhill, 1982).

Indeed, through the transfer of documents, the B/L allows merchants to effect delivery of the goods. The holder of the B/L shall have not only the right of ownership over the good but also the constructive or possession of the cargo. Because the B/L can be sent to whoever will have right to claim them from the carrier at the port of discharge, and since the B/L can represent the goods, it can be traded several times while the cargo is still in transit. Furthermore, it is this feature which makes the B/L acceptable for a bank as security or collateral for L/C advances to the importer and exporter (Euarjai, 1999).

As a result, a B/L as document of title can be used (i) “key to the warehouse/goods”\(^\text{18}\), (ii) during the transfer of ownership of the goods; (iii) as security for bank (ICS, 2014).

On the other hand, (Andreia Costa, 1999) points out three fundamental characteristics that should be considered essential for a negotiable document. These are: firstly, any bearer or holder must be able to enforce it; secondly, such a document must be transferable (through endorsement or blank document); and lastly, a \textit{bona fide}

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\(^{18}\) Key of the goods” can be explained as: First it enables the consignee/receiver (B/L holder) to claim his goods. The Master or carrier should only deliver the goods if the original negotiable B/L is presented to him. The goods must be delivered to the consignee. The carrier is not justified in delivering to anyone other than the consignee or his agents unless there is a special custom of the port or an express agreement to the contrary in the contract for carriage (ICS, 2014).
transferee who is transferred or endorsed on the bill will be the lawful "holder in due course".

However, although this use of the B/L as a document of title is a key aspect, it is now proving to be a weak point for the introduction of the electronic B/L. In the Expert Meeting on Electronic Commerce and International Transport Services, it was stated that this nature of the B/L is the biggest challenges in the implementation of the e-Bills (UNCTAD, 2001). This point will be covered in details in the next Chapter of this research.

2.2. The emergence of e-Bills

Having been used for several centuries, the B/L has become familiar as a piece of A size format paper (Gaskell & Nicholas, 2010). As mentioned above, the three functions of B/L, especially the “document of title” feature, “have made it very attractive to traders and remains the most prominent factor for its indispensability in international trade” (Victor Emerson, 2001).

The motivations, however, to finding an alternative to the traditional B/L may be defined as follows:

- Shipping and paper costs: Paper documents are costly in printing as well as courier fee. To receive of the cargo, an original paper B/L have to be couriered around the world. UNCITRAL estimated in an official report that the cost of the shipping document is about $ 420 billion per year (Kamal, 2017). One of the reasons is due to the number of transactions. In particular, in 2014, the Maersk shipping company estimated that a shipment from East Africa to Europe could be involved nearly 30 people and organizations and generate about 200 communications and transactions (Charlotte & Matthew, 2018).

- Slowness: The carrier is obliged to deliver the goods to the holder of the B/L on surrendering one of the original B/L. Practically, in global trade, goods are sold many times and B/L goes through many hands. On failure to produce the
B/L, the carrier will normally deliver the goods against a LOI\(^\text{19}\), which is intended to compensate them against the consequences of shipment without producing B/L. (UNCTAD, 2001) provided that, when e-Bills are used, the requirement for LOIs is reduced by some 90%.

- Fraud: Paper B/L can be faked. Another serious cause of fraud is “An entire B/L may be counterfeited, the signature may be forged, the quantity of the goods may be altered, and the consignor may fraudulently sell the same goods two or three times to different buyers.” (UNCTAD, 2001).

Meanwhile, the e-Bills has been created to eliminate the disadvantages that the traditional B/L was suffering from. After decades of slow development, e-bills systems have seen significant development in the use in recent years. Many key players have signed up and encouraged partners to do so. For example, 61% of the world's tanker ships are using CargoDocs system (Charlotte & Matthew, 2018). This will also encourage others sectors.

There are many reasons for this increase. First of all, it is the recognition of businesses in the transportation area that the adoption of commerce technology is essential to maintain competitiveness in the future. Secondly, the acceptance of e-Bills by IGP&I and BIMCO, has added momentum to the spread acceptance of e-Bills. In the claim guide of WOE P&I Club\(^\text{20}\) states that “any liability arising under an electronic bill issued under one of these systems (Bolero, EssDocs, E-title) is treated for Club cover purposes in exactly the same way as if it was a paper bill” (WOE, 2018).

A new technological solution that can promote the application of e-Bills recently is the invention of e-Bills using blockchain, the distributed ledger technology

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20 WOE P&I Club is a member of IGP&I. It is a leading mutual marine insurer providing its worldwide membership of shipowners, charterers, and operators with liability insurance and related services. https://www.westpandi.com
(platform of Bitcoin cryptocurrency) and smart contract (David & Craig, 2015). Whilst deploying these potential these solutions may still take some time, B/L is the area of growing interest for technology experts (Koji, 2016). Some existing e-Bills systems are already paid attention to develop systems which use blockchain\textsuperscript{21}.

According to the research of (Koji, 2016), a blockchain-based B/L not only inherits advantages over existing e-Bills but also overcomes most of its disadvantages. Unlike these existing systems based on the central registry model, blockchain technology has made the guarantee of uniqueness possible in a decentralized system. Transactions can take place peer-to-peer on an open platform where no prior subscription to membership is required. This will be a significant advantage as trading often involves a wide range of persons – both large and small enterprises – derived from a diverse range of industry sectors such as trading, banking, and transport. This openness also ensures the worldwide reach of the participants. Decentralization comes with further advantages. It eliminates human errors that might otherwise be made by the registry administrator (Koji, 2016). It also renders the system less vulnerable to accidents or hacking attacks since there are no single points of failure. Furthermore, it reduces concerns about censorship by the registry administrator or governments. Therefore, blockchain technology will turn out to be the stepping stone for the further development and realization of widely accepted systems for e-Bills (Van Traa Advocaten, 2018).

2.3. The electronic Bills of lading

2.3.1. Definition

In the digital age, it should not be too surprising that many projects in progress to replace traditional paper B/L (and many other paper commercial documents) with a more “ethereal B/L”, that will, henceforward, appear on the computer screen for electronic transmission. To a limited extent, this is already being done by a number of

\textsuperscript{21} essDocs have announced that it will be launching its blockchain technology version of e-Bills before the end of 2017 (UK P&I, 2016)
liner services for non-negotiable or straight bills of lading (also known as seaway bills) (Marsh, 2016). The real target, however, is the electronic negotiation and transmission of negotiable B/L in a system that can replace all of the trading document, without generating paper documents (Senekal, 2010).

Some people think that e-Bills are just another form of paper B/L, that B/Ls are generated by a computer and that means, instead of paper displays, B/L will be displayed in the monitor. The Cambridge Business Dictionary and Longman Business Dictionary defines an e-Bills is “a B/L that is sent and stored by a computer rather than on paper”\textsuperscript{22}.

Obviously, (CASLAV, 2004) proposed that e-Bills include “data that inserted in a computer is transmitted electronically, using electronic messages, so that an e-Bill consists of the series of electronic messages sent and received among a carrier, shipper, and consignee”. Consequently, “e-Bills cannot be issued in several originals, nor can it be signed in the same sense as a paper B/L”.

However, a question arises whether or not it can replicate the functions of a paper B/L. An electronic message, certainly, is supposed to having same functions as its paper counterpart. The difference, if any, should be only in the manner of format (Panagiota Kalofolia, 2004).

Having the same point, (Florian Kuester, 2017) describes an e-Bill as “is the legal and functional equivalent of a paper B/L. The e-Bills must digitize the core functions of a paper B/L, namely its legal acceptance as a receipt, as evidence of or containing the contract of carriage and as a document of title”.

All in all, an e-Bill is a B/L that can replicate all the functions of a paper B/L. The problem that needs to be addressed is what changes are required to the law and

\textsuperscript{22}\url{https://dictionary.cambridge.org/dictionary/english/electronic-bill-of-lading}

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regulations to approve a B/L in electronic form as well as to give the e-Bills functional equivalence.

### 2.3.2. Electronic Data Interchange (EDI)

In order to understand the process working of an e-bills, it is important to explore what is EDI. The major objective of EDI is the creation of a platform of transmission whereby connect multi-user, including shippers, carriers, forwarders, banks, etc., in a safe network and the accomplishment of a fully interpreted electronic process to forward a paperless international trading.

(Sieg Eiselen, 1995) defines EDI as:

"The electronic interchange of machine process able, structured data, which has been formatted according to agreed standards and which can be transmitted directly between different computer systems with the aid of telecommunication interfaces."

Therefore, in order for EDI to perform a combination of management resources and technology, is compulsory to build up a system that the data can be transmitted accurately and correctly between computers. This will include using similar software to transmit data between the parties in a mutually acceptable format. It also requires that the computer systems of both parties use the same standard, thus the “message” is able to be transmitted and received without corruption and in the same unaltered condition. Otherwise, a third party as service provider plays a translator role to ensure smoothly transferred (Ibrahim Sy, 1999).

Applying in the shipping industry, a B/L can be electronically produced and transferred by means of EDI as described above. An e-Bill is issued by a carrier and is transmitted to the shipper which contains the same information as is traditionally contained in B/L. Accordingly, the shipper is provided a “private key” which can be used in subsequent transmissions and which is an agreed code to ensure the integrity and authenticity of the transmission (Senekal, 2016).
In conclusion, the EDI can be used effectively as the method by which data can be electronically transferred. Nevertheless, in order to operate effectively in an international trading area, EDI must be regulated by effective international and national legal framework. With reference to the above system, the criteria for a e-Bills are discussed below, following by description of how they are provided by the e-Bills system in the next chapter.

2.3.3. **Legal issues: Authenticity and signature**

The legal issues arising in the context of electronic format of B/L, like other transport documents, are the determination of the authenticity of the document, the validity of electronic signatures and whether the regulations of the electronic carriage contract by reference are approved by law (UNCTAD, 2001). A message, when using EDI, usually contains a name, an access code or other ways of unique identification to record the intent of the source to authenticate the transmission.

It cannot be denied that electronic verification systems, for example, digital signatures can accomplish greater legitimacy due to the uniqueness of the calculation technique utilized. Digital signatures and encryption methods are utilized to guarantee the respectability, genuineness, and privacy of electronic messages. Though the undoubted benefits of digital signatures, the struggle is the lawful legitimacy of such signatures.

The Hamburg rules made a move towards putting electronic signature in a legal framework with the Article 14.3 "Signature on the B/L may be in handwriting, printed in facsimile, perforated, stamped, in symbols, or made by any other mechanical or electronic means, if not inconsistent with the law of the country where the B/L is issued”.

Digital signatures using cryptography is defined by (Holtzhausen, 2006) as: "The science of converting data into apparent nonsense and later translating it back again into its original form, all in a controlled way”. Using cryptography, a digital
signature enables the authenticity of the unique of the electronic document and the identity of the sender.

In conclusion, digital signatures and authenticity are very important in using Bills of lading in electronic environment. However, this research will not examine in details into this issue as only the focus on the possible functions duplication in electronic formats.

2.3.4. The criteria for an e-Bills - function equivalence approach

Practically, “EDI itself cannot be regarded as an equivalent of a paper document, either in nature or in legal aspects” (Abdul, 2004). Therefore, UNCITRAL\textsuperscript{23} adopted Model Law on Electronic commerce\textsuperscript{24} (MLEC) in 1996 with the objective of recognizing the validity of electronic transaction using EDI. Accordingly, the MLEC established a new approach called as “functional equivalence” which based on the requirements of paper B/L and determines how those functions can be performed via EDI (Abdul, 2004).

In order to determine whether an e-Bill can satisfy the traditional functions of paper B/L and thus whether it can be used broadly in transportation industry, some criteria for e-Bills must be met. Based on these criteria, legal frameworks such as MLEC, CMI Rules could then be used to measure how the legislation can approve the using of electronic form in order to ensure the effective and usable of B/L. These different requirements are discussed below.

2.3.4.1. Receipt of goods for shipment

As explained, a B/L is an acknowledgment document, in which states that the cargos have been received by the carrier for shipment and further indicates external conditions of the goods. The purpose of this receipt is to allow the consignee to receive

\footnotesize{\textsuperscript{23} UNCITRAL is the United Nations Commission on International Trade Law established as the legal body of UN system to promote and harmonize international business (UNCITRAL, 2018)}

\footnotesize{\textsuperscript{24} UNCITRAL Model Law on Electronic Commerce with Guide to Enactment 1996 with additional article 5 bis as adopted in 1998}
their cargo same quantity and quality of goods as was delivered by the shipper from the cargo, thereby serving as proof of the shipments.

As a result, in order to perform this function, a B/L, whether electronic or other form, must be:

1. A receipt or document, in any kind of form, provided by the carrier to the shipper;

2. With the receipt, the consignee/receiver must be able to determine that the quantity and conditions of the cargos and to exercise their possession of the cargos.

**2.3.4.2. As evidence of carriage of goods by sea**

The function of B/L is only the evidence of the contract of carriage between the shipper and the carrier as analyzed in previous part. The one thing should be noted that the receipt is issued by carrier to the person (shipper) with whom he has contracted for the carriage, therefore, in that receipt must reflects the terms and condition of carriage contract (Guenter & Reynolds, 2012; Senekal, 2016). The traditional B/L contains the contract regulations set out on the reverse, or a reference. Thus, no matter how in paper form or electronic form, such terms and conditions, or reference thereto, must be visible on the actual receipt.

The criteria for the e-bills should meet the following conditions:

1. It is provided by the carrier to the shipper;

2. It must consist of visible evidence of the contract of carriage, or a reference thereto.

**2.3.4.3. As a document of title**

As described in details above, the principal purpose of B/L lies in that B/L allows the holder to transfer the possession of cargo to third parties by endorsement, then the right to the goods shall transfer to the endorsee.
With respect to transferability, the House of Lords in the Lickbarrow case\textsuperscript{25} reasoned that the B/L is indeed a document of title. The transfer of right was emphasized that the B/L was afforded its status as a document of title due to the fact that B/L is a negotiable document which was established and accepted in the commercial custom and practice, it is however actually not a negotiable instrument (Senekal, 2010).

The e-Bills therefore will need to meet the following requirements:

1. It is provided by the carrier to the shipper;
2. The possibility to endorse/transfer to the third party in a “safe” environment;
3. The transfer process must be established and accepted as a mercantile usage of trader.

2.3.4.4. Conclusion

The criteria that any e-Bills shall need to comply with can be described as follows:

1. It is provided by the carrier to the shipper;
2. With the receipt, the consignee/receiver must be able to determine that the quantity and conditions of the cargos and to exercise their possession of the cargos.
3. It must consist of visible evidence of the contract of carriage, or a reference thereto.
4. The possibility to endorse/transfer to the third party in a “safe” environment;
5. The transfer process must be established and accepted as a mercantile usage of trader.

The attempts to establish for e-Bills will be review hereafter against above criteria to determine whether such rules or system can fully accommodate the features of B/L in theory as well as in practice.

\textsuperscript{25}
CHAPTER 3
THE LEGAL FRAMEWORK OF ELECTRONIC BILLS OF LADING

3.1. Trends in legislation on electronic contracts

The law and IT have many interactions. It is argued that one of the reasons for legal reforms is the introduction of new technologies that are currently inadequately covered by existing laws (Van Bien, 2015).

An electronic contract is a contract concluded through the use of electronic means. Therefore, the term referring to an electronic contract is to refer to a contract setting method rather than a contract type based on a particular object. Practically, IT does not change the nature of the contract. Previously, in order to establish a contract, one can only express his or her willing and intent in the form of oral or written engagement, nowadays through the advancement of science and technology, we are able to express willing, intent by using electronic communication. So, no matter by what means the contract is signed, the most common and basic principles of the contract are automatically applied. Thus, it can be said that the core principles and regulations in traditional contract law still play an important role in regulating e-contractual relations.

However, the practice of electronic contracting has shown the complexity that electronic contracts bring within existing contract law and the problems that may arise when applying the current regulations. Examples of such problem include: determining the subjectivity of the parties; the protection of consumer interests; the time and place of entering into the contract, the issue of the original; the notarization of electronic contracts, etc. The law on traditional contracts does not deal with issues such as data messages, legal values of data messages, EDI, digital signatures, e-signature authentication, and so on. Therefore, within existing contract legislation, it is not possible to solve very specific issues arising from the signing and performance of electronic contracts. To regulate transactions conducted by electronic means, many
countries around the world have had to amend traditional contracting law or supplement them with additional legal documents.

When the mode of contract signing changes, the contract law also needs to change accordingly. However, these changes are only formal, technical, and the nature and purpose of these transactions are still unchanged. Therefore, developing a separate law on electronic contracts is not necessary. In the world, we have not seen any country develop a separate law regulating the entry and execution of electronic contracts (Van Bien, 2015). Instead, it is usual to enact laws that regulate the electronic form of all legal transactions. An electronic contract is a transaction and the provisions on entering into an electronic contract are only part of the law on electronic transactions or e-commerce in general.

In the world, the international trend in the development of laws on electronic transactions usually stipulates three basic categories:

1) Recognition of electronic transactions (by acknowledging the legal validity of data messages)

2) Recognition of digital signatures to ensure the safety and security of information systems;

3) Regulations on aspects related to e-transactions that include: rights and obligations of network service providers; online payment, online intellectual property protection, online consumer protection, online privacy, online crime and online dispute resolution.

Depending on their actual development, each country will establish legal regulations on electronic transactions in the following directions:

a. Create a stand-alone law that covers all three categories of issues. This avoids the amendment and supplementation of existing legal documents and promptly regulates e-transactions. However, such a law relates to many areas, the construction is not simple, thus it requires a high legislative level. Korea has developed a basic law
on e-commerce covering all three groups of issues, however, the subject of regulation is only commercial transactions, it is not extended to all electronic transactions.

b. Build many independent laws that address specific issues in the three groups. For example, Malaysia has Digital Signature Laws, Remote Therapy Laws, Communications and Multimedia Law. This does not require the creation of a specialized over-arching law, and it is possible to quickly build the documents. However, to creat the independent laws it is probably necessary to form a research and policy-making body in relation to information technology (Malaysia has established MSC - Multimedia Super Corridor - responsible for proposing and developing legal issues related to information technology.

c. Create a separate law recognizing the legal validity of data messages and/or electronic signatures (digital signatures). Other issues related to electronic transactions would then be regulated by the amendment of the specialized law. The UNCITRAL recommends that countries follow this direction with the promulgation of the MLEC (the scope of regulation can be extended for all electronic transactions) and MLES. The Philippines has also moved in this direction with the incorporation both of above Model laws.

d. Do not enact a new law, but only amend and supplement laws and regulations. France (and Germany) has amended the Civil Code to recognize the legal validity of data messages and electronic signatures. Based on Articles 1316-4 of Civil Code, and EU Electronic Signatures Directive26, France have also developed a Decree on electronic signatures, providing services, and having new social activities (such as shops, online businesses ...)

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26 The Electronic Signatures Directive 1999/93/EC
3.2. Legal framework of e-Bills

3.2.1. The UNCITRAL Model Law on Electronic Commerce

After several years of drafting research, UNCITRAL adopted the MLEC on June 12, 1996, offering a “model for harmonized legal regimes that will facilitate communication and storage of digital information by ensuring functional equivalence, media neutrality and legal recognition and enforceability for electronic documentations and communications” (UNCITRAL, 1996).

Recognizing that international trade transactions are increasingly engaged in the EDI, the UN asserted that this MLEC and the official guidance on how to apply it to the national legislation, will facilitate e-commerce, and contribute significantly to harmonious development of economic relations (Van Bien, 2015). The MLEC is no force of law, thus parties can incorporate its provisions into their contracts. The MLEC is divided into two parts, in which part one relates to general electronic commerce, while part two deals with specific areas, including carriage of goods by sea (UNCITRAL, 1996).

3.2.1.1. Receipt of cargo for shipment

The MLEC provides the definition of data message in Article 2: "Data message" means information generated, sent, received or stored by electronic, optical or similar means including, but no limited to, electronic data interchange (EDI), electronic mail, telegram, telex or telecopy”.

And Article 5 does afford full the legal effect of data message, as follows:

"Information shall not be denied legal effect, validity or enforceability solely on the grounds that it is in the form of a data message."

Therefore, a B/L issued electronically, within la legislative framework of MLEC have full recognition and legal effect. Similarly, an electronic receipt should enjoy the same validity as a paper receipt, being prima facie evidence that the carrier has received the goods with quantity and quality thereof.
Article 16 of the MLEC dealing with the carriage contracts and the issuing of a receipt for goods, in particular, in paragraph 3 and, together with Article 17(1), as follows:

"...where the law requires that any action referred to in Article 16 be carried out in writing or by using paper document, that requirement is met if the action is carried out by using one or more data message."

It means that the using of data message has the same validity as using paper document, therefore, the holder of an e-Bills can claim delivery of the goods against e-Bills using data message.

To sum up, the MLEC recognized the function of a receipt in the sense of the using of e-Bills.

3.2.1.2 Evidence of the contract of carriage

The report of UNCITRAL in 2001 stated that EDI documents have the same legal validity as documents in writing. As analyzed above, Article 17 of the MLEC determines the use of data messages as meeting the requirements of writing.

A written document, accurately reflecting the terms and conditions of the contract of carriage, is accepted as proof of such contract. By reference to Articles 5, 16 and 17 of the MLEC, the same would apply to data messages.

3.2.1.3 Document of title

The negotiability and the transferability of an e-Bills is regulated in Article 17(3) of the MLEC as follows:

"If a right is to be granted to, or an obligation is to be acquired by, one person and no other person, and if the law requires that, in order to effect this, the right or obligation must be conveyed to that person by the transfer, or use of, a paper document, that requirement is met if the right or obligation is conveyed by using one
or more data messages, provided that a reliable method is used to render such data message or messages unique."

From this it can be seen that, in order to transfer the right and obligation, this Article requires, first, the transfer must be made by means of data messages, and that in doing so a “reliable method is used to render the messages unique”. No further information is provided on what is a “reliable method” but it can be supposed that this method should be verified and proved to be reliable (Senekal, 2010).

The right or obligation can transfer by means of a data message, thus satisfies the negotiable requirements of B/L. It is also important to note that negotiability of an instrument needs to be established by statute or mercantile usage (Senekal, 2010).

3.2.1.4. Conclusion:

The MLEC, as mentioned above, is not a mandatory instrument but a model set of provisions dealing with electronic documents, including e-Bills.

With respect to “the issuing of a receipt or document and obtaining the goods” and the criteria relate to evidence of the contract of carriage, the MLEC provides full legal validity according to Article 5, Article 16 and Article 17.

The forth and fifth requirement is transferable of a document and the establishment of statute or mercantile usage through the transferring process. As discussed above, a reliable method has to be used to effect the transfer by data message in accordance with Article 17(3). The MLEC however does not explicitly specify a process to transmit. In other words, the MLEC failed to meet the fourth and final criteria.

3.2.2. The CMI Rules for Electronic Bills of Lading 1990

In 1990 the CMI Rules for e-Bills, hereafter called CMI Rules, were published by the Committee Maritime International (CMI, 1990) with the aim of governing transactions involving e-Bills by imitating the functions of the B/L in an electronic environment (Andreia Costa, 1999). The CMI Rules are not enforceable and work only
whenever the parties incorporated them into the contract. They also do not require registration and payment fee to “be a member of a club” but only require the essential technology to send and receive data to each other (Senekal, 2010).

3.2.2.1 Receipt of cargo for the shipment

Article 4 of the CMI Rules stipulates that the carrier is obliged to send a message as the receipt of the cargo to the shipper’s electronic address. In that notice the descriptions of the goods should be contained "in the same tenor as would be required if a paper B/L were issued". In particular, such notice must include the name of the shipper, the description of the goods, the date and place of receipt of the goods, a reference to the carrier's terms and conditions of carriage, and the private key (Amedeo Delmedico, 2003). Article 4 (d) further stipulates that the above information will have the same effect as paper receipts. In this way, CMI Rules provides for e-Bills to satisfy the “receipt” function.

3.2.2.2 Evidence of the carriage contract

In relation to this function, the reference should be again made to Articles 4 (a), 4 (b), 4 (d) of the Rules. In particular, Article 4(a) of the Rules requires that the carrier shall notify the consignor of the receipt of the cargo for carriage. Article 4(b) further specifies that the notice must contain a "reference to the carrier's terms and conditions of carriage" which, by its nature, is a reference to the carriage contract. Along with the provisions of Article 4(d), it is clear that e-Bills can indeed provide the proof of this contract.

(Dubovec, 2006) says that the CMI Rules do not regulate contractual rights and obligations that are to be transferred in company with the document. However, it can be assumed that such contract rights are transferred by agreement between the shipper and the new owner of the Private Key.

According to the common law, the B/L would be the prima facie evidence as the receipt of cargo indicating the quality and quantity of the goods when it is given to the shipper. An electronic version would be interpreted that one the shipper receives
the data message and the private key, it would be the prima facie evidence burdening the liability of the carrier (Andreia Costa, 1999).

3.2.2.3 Document of title

In order to explain whether the CMI Rules provide the document of title, the working of Rules is described below.

The system provides a direct communication mechanism between shipper and carrier through a private registry system. Any negotiation/endorsement of the B/L occur through the use of a unique and non-transferable “private key” which replaces the paper B/L (Rule 8). Accordingly, in order to transfer the possession to other interests, the shipper need to notify who can then the carrier cancel the original “private key” and issues a new key to the new person who would then be considered as the lawful holder of the B/L. The holder of the private key is the only party that has the right to claim against the carrier, nominate the consignee or substitute a nominated consignee for any other party, or transfer the right of control and transfer to another party.

In conclusion, it can be said that the CMI Rules provide an effective transformative method for the right of cargos by electronic messages. However, whether or not this method can be considered as a commercial custom remains to be seen.

3.2.2.4 Conclusion:

From the above analysis, it is obvious that three first criteria for e-Bills are regulated and satisfied under the provisions of CMI Rules, but it seems very difficult for CMI Rules to fulfill the fourth and final criteria with a requirement that commercial custom must be established (Andreia Costa, 1999). This is caused by several defects in the CMI system. First, the “Private Key” is the not equivalent of the paper B/L under the different laws of many jurisdictions (Andreia Costa, 1999). Another distinguishing feature of the CMI system from the traditional B/L is the fact that the B/L is normally transferred from a trader to a trader, and not returned to the carrier until the cargo is
delivered. In contrast, a CMI e-Bills is returned to the carrier each time it is negotiated, and each next trader receives a new document transmitted from the ship (UNCTAD, 2001).

3.3. Electronic Bills of lading Systems

In practice, there are several e-Bills system have been developed, however at the time of writing, only three systems were approved by IGP&I. There are the Bolero and the essDOCS (in 2010), and the e-titleTM (in 2015) with the latest version as follows (UK P&I CLUB, 2017):

- Bolero International Ltd Rulebook/Operating Procedures September 1999 (“Bolero”);
- essDOCS Exchange Ltd DSUA 2009.3 and 2013.1 (“essDOCS”); and
- E-Title Authority Pte Ltd (“E-titleTM”) – The Electronic Title User Agreement version 1.2

The next paragraph will provide some brief information about these systems.

3.3.1. Bolero

By way of background, Bolero 27 (Bill of lading Electronic Registry Organization) was the initiative of the International Chamber of Commerce (ICC) jointly with the Through Transport Club (TTC) 28 and the Society for Worldwide InterBank Financial Telecommunications (SWIFT). It aimed to replicate the process and roles of the paper B/L by using registry system (Chukwuma, 2013).

The parties wishing to use the system must accept their entering into the contract regulated by the Bolero “Rulebook”. Only through this multilateral agreement, as the legal framework, the function equivalence with a paper B/L can be

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27 Bolero Operations Ltd. The Bolero project was officially launched on September 1999. More information is available on the internet at http://www.bolero.net
28 TT Club is a sister club of UK P&I Club. TT stands for ‘Through Transport’. TT Club is the leading provider of insurance and related risk management services to the international transport and logistics industry. http://ttclub.com
guaranteed. The system is applied via English law and gives the United Kingdom court’s jurisdiction in the case of disputes.

The Bolero set up an electronic central registry for B/L, which will record any change of interest in the cargo. Bolero B/L (BBL) are created, exchanged and delivered through “title registry” instructions. Accordingly, the carrier who issues a BBL, sends the instructions to the “title registry” where the shipper is logged as holder of the BBL. If the holder wishes to transfer the right of control of the goods to a subsequent holder, he can carry out this transfer by attornment\(^{29}\) by sending instructions to the registry and receiving a confirmation of the new holder from the system\(^{30}\) (Pejovic, 2014). The central registry controls security process to ensure that there can be only one e-bill in circulation and one holder of BBL.

The essential feature of Bolero is that it is a restricted and close system, which can be assessed by members only. And therefore, Bolero members and external third parties seem impossible of making transactions involving transfer of B/L. In law, the legal title to the goods has effect against the whole world (erga omnes), however, it seems not applied to be the case with BBL. Therefore, the system allows users to “switch to paper”. Consequently, while the carrier completes his responsibility after the release of the goods to a subsequent consignee/endorsee in a paper B/L, a BBL requires a holder of a paper to obtain the bill independently in the bolero system. The possibility of fraud may be high due to allowing a dishonest party to transfer the rights to two parties using parallel transfer of a paper and e-bills (Pejovic, 2014).

### 3.3.2. essDOCS

The founders of essDOCS were two master students who noticed the outdated system for commercial papers and were eager to design a modern system for the

\(^{29}\) Attornment has its basis in medieval land law and consists of an undertaking by the bailee of the goods (the Carrier) to the new “holder” the he will deliver the goods to him, thus giving the latter constructive possession of the goods (Miriam Goldby, 2011)

\(^{30}\) Section 3.4 of Bolero Rulebook.
transportation industry. In practice, Bolero and essDOCS actually work in very similar ways even if they look different and have different roots (UK P&I Club, 2017).

Similar to Bolero, signing an essDOCS’s agreement called the ess-DatabridgeTM Services & Users Agreement (DSUA), users agree and recognize the legal equivalent function of electronic documents and undertake not to challenge the validity of any communication or transaction created by system.

The essDOCS’ system also has central registries for the logging and storing of the holder of the e-Bills. However, while Bolero does this through its “title registry”, essDOCS does this via a centralised database. Each party in a cargo transaction (shipper, carrier, bank, receiver) needs to be registered to use the same system in order to determine the status of the e-Bills and identify the party “holding” the e-Bills. The system applies principle of novation\(^{31}\) to transfer rights and obligations.

An e-Bill is firstly created on the system, uploaded and sent in draft form for approval between carrier and shipper. It can contain a charter party or other external terms. The e-Bill is then sent by the system to the next party in the chain (e.g. shipper). Like a paper BL however, there can only be one holder of an eBL at any time. Users are issued with their own private keys which serve to identify the users. In system, all messages are authenticated and secure by digital signatures. The creators of this system paid a lot of attention to viruses, hacking and cyber-attacks and even offer insurance against cyber risks for losses caused by their systems\(^{32}\).

\(^{31}\) The principle of novation: Instead of the assignee standing in the shoes of the assignor and suing under the original B/L, the parties contractually agree that there is an express novation of the contract of carriage each time the e-B/L is transferred from one holder to the next. On a transfer, the rights held by the transferor are extinguished. The transferee takes those rights instead and becomes a party to the contract of carriage, allowing him to sue the carrier under the same terms originally agreed between the carrier and the shipper.

\(^{32}\) essDOCS provides a standard $20m cover per e-Bills free of charge against cyber risks
3.3.3. **E-title™**

E-title™ is the third e-bills system approved by the IGP&I. This is the product of three ex-member of Bolero who recognised the necessity to have a mechanism to assist carriers and logistics operators to release a B/L in electric form without any changes from the B/L that they were using before. E-title™ is a patented software solution, that secure the negotiable function and transfer of title of the document among the trading parties. Like the previous two systems, E-title™ also established a multilateral agreement called ElectronicTitle User Agreement, whereby all parties agree to treat e-documents as fully functional and legally equivalent to paper documents and to agree the validity of all transactions generated by the system.

There are two major differences between E-title™ and Bolero/essDocs. Firstly, E-title™ incorporates COGSA 1992 into its the user agreement. Secondly, it operates on a non-centralized system. Accordingly, the carrier may choose to deploy the system via SingaporeTradeXchange or in a secure device called a “black box”\(^{33}\). This black box will be located at the carrier’s own in-house system for generating B/L.

Carrier's customers will access the system through the carrier's portal on the internet. The holder can transfer by signing the endorsement record, ensuring non-repudiation, authentication, and data integrity, similar to physical endorsement on the back of the paper B/L. Therefore, as with a paper B/L, e-Bills can at any time, be owned by only one party. E-title™'s B/L can also be converted into a paper B/L paper at any stage of the transaction and e-Bills’ state can always be tracked to prevent double transactions or illegal transfers. This system maintains the secure log of each e-Bills transmission in order to provide status information to users, to resolve disputes between users and to provide backups in case of system failure.

\(^{33}\) “Black box” can refer to the black box used by airlines (UK P&I CLUB, 2017).
CHAPTER IV
CURRENT SITUATION AND SOLUTIONS TO IMPROVE THE LEGAL SYSTEM ON ELECTRONIC BILLS OF LADING IN VIETNAM

4.1. The necessity of applying e-Bills in international trade and transport activities in Vietnam

"Vietnam is a typical model for international trade with the starting point of mostly no trade in 1990. It now becomes one of the world's leading exporters of textiles and footwear and manufactured goods, together with key agricultural products such as rice, coffee, spices, up to furniture, and most recently electronics and software" - Fred Burke, Director of law firm Baker & McKenzie (Vietnam) positive comments on the integration process of Vietnam (Thao Nguyen, 2017).

Vietnam's export growth during the period 2000-2016 is 17.5% per year. Data from the General Statistics Office shows that the export value accounts for an even larger share of GDP, reaching 50.0% of GDP in 2000, 70.5% of GDP in 2007 and 89.8% of GDP in 2016.
With over 3,260 km of coastline and about 198,000 km of rivers along the
country, shipping is one of the most dynamic sectors of transport in Vietnam,
accounting for more than 80% of cargoes transported by sea locally and
internationally. Since 1995, shipping has developed together with the growth of trade
in goods with the average annual growth rate at 15%. In Vietnam, about 90% of import
and export goods are transported by sea while road transport "load" contributed about
75% of domestic transport (Vinamarine, 2014). With thanks to world integrated trade,
the import-export turnover has grown at a rate of nearly 20% per year, Vietnam's
maritime transport plays a vital role and is the backbone of the development of national
economy. Vietnam currently has a total of 44 seaports including 166 terminals through
which over 120,000 ships operating and a total volume of cargo that increases annually
(Thanh Van, Sung-june, & Jung-sik, 2015). Figures from the Ports Association showed
that throughput of containerized cargo through the port system in 2015 reached
11,222,000 TEUs, an increase of 12.2% over the previous year and a compound annual
growth rate (CAGR) of 17.3% per year for the period 2000-2015.

Despite receiving substantial government support and investment in
infrastructure, Vietnamese port system and fleet still show a lag behind the growth rate
of the trade. Congestion at the central ports has been frequent occurrence in the last
few years. Domestic transport companies only meet about 10-15% of cargo volume
shipped each year and the foreign companies hold the remaining of market share.
Generally speaking, containerisation develops with its diffusion within global
transport system, however, our port system is not fully equipped for container ships.
This reduces the efficiency of the movement of goods as well as leading to less
competitiveness compared to other countries in the region in the context of strong
import-export activities.

In this circumstance, the research and application of electronic documents,
such as e-Bills in Vietnam are very necessary. First of all, this would help Vietnamese
maritime industry to keep up to date with the world's new trends by the application of
IT, especially EDI to the shipping of goods by sea. As new technology develops,
national regulations should be updated in line with the latest international standards to ensure that the legal framework is adapted to the developing technology. Secondly, the application of e-Bills will facilitate the administrative procedures for the import and export activities, such as supervision, and inspection by the authorities and reduce the time of stagnation. This will help improve the quality of public administration and increase the competitiveness of the shipping industry. Finally, the use of e-Bills will save time and cost for businesses in particular and thereby create economic efficiency for society.

4.2. Assessing the legal possibility of applying e-Bills in Vietnam

4.2.1. Vietnamese law on the contract of carriage of goods by sea in connection to the provisions of international conventions.

Vietnam is a member of the International Maritime Organization (IMO) and has ratified many international conventions in the maritime field. Vietnam, however, has ratified neither The Hague Rules, The Hague-Visby Rules nor the Hamburg Rules with regard of carriage of goods by sea. Also, despite participating in the negotiation process for drafting the Rotterdam Rules, Vietnam has not yet signed up to this Code.

Compared with other areas, the field of maritime law of Vietnam was codified relatively early. Although the Vietnam Maritime Code was first promulgated in 1990, the regulations for contract of carriage of good by sea is relatively sketchy. An updated Maritime Code was enacted in 2005, when Vietnam's regional and world economic integration was strengthened and considerable growth had been achieved. However, 10 years after implementation, the Vietnam Maritime Code 2005 continues to cause many problems, while the maritime industry has committed to opening up comprehensive integration into the global maritime economy. In order to overcome the current shortcomings, and to help improve the Vietnamese maritime economy amendment of the Maritime Code is very important and necessary. Therefore, on November, 2015, new maritime legislation, the Vietnam Maritime Code 2015 was passed by the National Assembly. This was signed by the President on 8/12/2015 and became effective from 1/7/2017. This update Code includes 20 chapters with 341
articles, in which the issue of contracts for the carriage of goods by sea is provided for in Chapter VII, from Article 145 to Article 199.

In addition, the carriage of goods by sea is also regulated by other Vietnamese legal normative documents. For example, the provisions of Chapter XVI, Section 8, Sub-section II relating to contracts for transport of property of the Civil Code 2015\(^{34}\), from Articles 530 to 541; or the provisions of Section 4 of Chapter VI of Commercial Law 2005\(^{35}\), from Article 233 to Article 240 relating to the Regulation on Logistics Services. In this regard, Article 1.2 of the 2015 Maritime Code of Vietnam stipulates the principle of “lex specialis derogant lex generalis”, in order to give priority to the application of the provisions of the Maritime Code: "The provisions of this Code shall prevail where there exist stipulations of the same substance in other legislation of Vietnam relating to the maritime activities which are different from this Code" (Nguyen, 2011).

During the drafting of the 2015 Maritime Code, Vietnamese lawmakers consulted the provisions of The Hague-Visby Rules and the Hamburg Rules, even the new developments in the Rotterdam Rules.

The first point can be noted as the approach of the 2015 Maritime Code of Vietnam on the contract of carriage of goods by sea. Unlike the Hague Rules and Hague-Visby Rules, the 2015 Maritime Code uses the approach of the Hamburg Rules and the Rotterdam Rules to define a contract of carriage of goods by sea. Specifically, the Maritime Code defines this contract by expressing the rights and obligations of the parties as carriers and charterers (Article 145).

In terms of the period carrier’s responsibility, the 2015 Maritime Code approved the approach of the Hamburg Rules when defining the "Port-To-Port" principle whereby the liability of the carrier continues from the time of delivery at the port, during the transportation and terminate upon delivery of the cargo at the port of

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\(^{34}\) Law No. 91/2015/QH13 of November 24, 2015

\(^{35}\) Law No. 36/2005/QH11 of June 14, 2005
discharge (Article 170). This provision of the Vietnam Maritime Code differs from the "door-to-door" principle applied in the Rotterdam Rules. In fact, the 2015 Maritime Code laid down separate provisions on multimodal transport contracts, one of which must be sea carriage (Article 196-199). Article 197.1 of the Code stipulates: "The multimodal transport operator shall be responsible for the goods under the multimodal transport contract covering the period from the time he has taken the goods in his charge to the time of their delivery". According to Article 198 of the Maritime Code, the liability and limitation of liability of the multimodal transport operator for loss of or damage to the goods shall be determined in accordance with the applicable law and regulations governing that specific section of the multimodal transports when such losses occur. This approach of the Maritime Code is not a "maritime plus" approach used by the Rotterdam Rules, which does not create a uniform regime of liability for the carrier in multimodal transport contracts, including sea carriage contracts (Nguyen, 2011).

In terms of the obligations of the carrier, the 2015 Maritime Code still uses the provisions of The Hague-Visby Rules when the carrier is only obliged to exercise due diligence "before and at the beginning of the voyage to make the ship seaworthy" (Article 150). This obligation shall not be extended in the course of navigation as provided for in the Hamburg Rules (Article 4.1) and the Rotterdam Rules (Article 12). Article 151 of the 2015 Maritime Code on the exemption of liability for carriers is almost copying the 17 grounds for exoneration referred to in Article 4.2 of The Hague-Visby Rules. On the other hand, the 2015 Maritime Code also accepts the provisions of the Hamburg Rules and the Rotterdam Rules when defining the liability of carriers in the event of delay of delivery (Article 151.3).

On the limitation of compensation, the 2015 Maritime Code states that the carrier is liable for maximum compensation equivalent to 666.67 SDR per package or per unit of cargo, or a maximum of 2 SDR per kilogram of gross weight of the goods loss, damaged (Article 152.1). This limit is set out in The Hague-Visby Rule, as seen above, which has been raised both in the Hamburg Rules and the Rotterdam Rules.
Also related to the issue of liability and limitation of liability, the 2015 Maritime Code contained provisions on the combination of live animals’ transport, dangerous goods transport and container shipping.

The time bar for action in respect of damage to and loss of goods in 2015 Maritime Code is one year, the same as the provisions of The Hague-Visby Rules and shorter than the two-year time limit prescribed in the Hamburg Rules and the Rotterdam Rules.

Thus, in conclusion, the provisions of the 2015 Maritime Code almost universally accept the provisions of The Hague-Visby Rules. Some of the provisions of the Hamburg Rules, even of the Rotterdam Rules, have also been adopted to update the Vietnamese Maritime Code in line with the development of maritime transport technology (Duong, 2011).

**4.2.2. Vietnamese law on e-Bills**

The modification of documents covering the liability of carriers and transport in Vietnam is now made in compliance with the Maritime Code 2015, as examined above. The issuance of transport documents in general and B/L in particular still uses traditional paper.

Article 148 (2) of the 2015 Vietnam Maritime Code stated “*B/L means a document of transport which evidences that the carrier has received the goods with quantity, kinds, and in conditions as specified therein for carriage to the place of discharge; is a document of title for disposing of the goods and for taking delivery thereof; and which evidences a contract of carriage of goods by sea*”. Although it is not clear whether it is mandatory to have the B/L in writing, it is clear that the way in which "document" is defined as the current law will make it difficult to conduct commercial transactions electronically. This means that if the enterprise wants to participate in such electronic transactions, it must be specified in the contract or related agreements in the spirit of the 2005 Civil Code (Nguyen, 2015).
Along with international economic integration, Vietnam has developed and promulgated a system of laws and sub-laws to create legal bases for e-commerce, such as the Law Commerce 2005, the Law on e-transactions 2005, Law on Information Technology 2006, Cybersecurity Law 2018, etc., and other decrees and circulars guiding the implementation. The Law on e-transactions 2005 is considered as the foundation and the most important milestone in this field. However, none of them deal with the issuance and transfer of transport documents. The provisions of the Law on e-transactions 2005 are initially legal recognition of data messages, EDI, electronic contracts and the concept of digital signatures and digital signature authentication. In accordance with Article 1 of Law on e-transactions 2005, “the provision of this Law shall not apply to the grant of..., bills of exchange and other valuable papers”. It means this law is not applying for a B/L as document of title.

4.2.3. **Conclusions**

Although the application of e-Bills in transactions and transportation of import and export goods in Vietnam appears to be quite necessary to support continuous growth of international trade, there are still too many barriers and obstacles which prevent them being used.

Technically, only businesses that have computers and internet connections can connect and use the e-Bills system. However, the infrastructure and information technology of most businesses are now capable of meeting this basic requirement. But the problems of network security and information security have also weakened the sentiment and appetite of the business community for using electronic transactions in general and transactions related to e-Bills, in particular.

In terms of legal aspects, Vietnam is initially interested in e-commerce in the country, but there is no strategy to develop e-commerce associated with foreign trade. There are no regulations governing electronic transport documents in general or specifically e-Bills.
4.3. Recommendations

This study has shown that the recognition of e-Bills in commercial transactions in Vietnam has failed due to lack of specific and sound legal framework. There are, however, other hindering factors for e-Bills. Therefore, in the light of the findings discussed above, here are the recommendations arising from this research.

4.3.1. Legal Recommendations

4.3.1.1. Develop legal provisions governing the production and transfer of e-Bills

As discussed above, Vietnam's commercial and maritime legal systems are not well designed to accommodate electronic transport documents in general. The definition of a B/L as a document as the 2015 Vietnam Maritime Code will hinder the use of e-Bills in commercial practice in Vietnam.

To overcome this problem, Vietnam can consider the following suggestion:

* To ratify an international convention on the carriage of goods by sea with electronic transport documentation (Rotterdam Rules)

At present, academics, researcher and authorities are actively discussing whether Vietnam should ratify an international convention on the carriage of goods by sea and if so, which convention it should choose to adopt. In the "report assessing the impact of Vietnam's accession to international conventions on carriage of goods by sea" of (MUTRAP\textsuperscript{36}, 2011), it stated that Vietnam has no urgent need to participate in an any international convention on the carriage of goods by sea at this moment.

(Nguyen, 2015) suggested that if Vietnam opted for an international convention, the Rotterdam Rules should be chosen, because of the balance of interests between the parties involved (carrier vs shippers) and many modern, progressive rules such as

\textsuperscript{36} EU – Vietnam Multilateral Trade Project III
multimodal transport and electronic transport records promise a new era of e-commerce in the transport of goods by sea.

However, it will be interesting to see how many countries will sign the Rotterdam Rules in the future. Therefore, whether or not Vietnam will ratify the Rotterdam Convention in the future, Vietnam now can refer to the provisions of this convention to open the way for e-Bills in Vietnam. Specifically, the recognition of e-signatures or digital certificates, the admissibility of electronic transactions in courts as evidence etc., needs to be written into law in Vietnam. This will perhaps lead the e-Bills to be recognized as a transport document equivalent to paper B/L in commercial transactions in Vietnam.

* To refer to the MLEC, MLES and the current international conventions on e-commerce to amend and supplement the provisions on electronic transport documents in the legal system.

Understanding the experience of developing legislation on e-contracting in the world shows that in line with UNCITRAL approach, most countries do not develop a separate law for electronic contracts as analyzed in Chapter 3.1. The legal provisions on e-contracts and e-contracting are often incorporated into a common law called E-transaction Law or e-commerce Law that stipulate the conditions and ways in which transactions (including contracts) conducted by electronic means can be of equivalent validity to transactions carried out by traditional methods. The development of legislation regulating e-contracts, in fact, is based on three main principles: (i) Functional equivalence principle, (ii) Non-discrimination principle and (iii) Neutral principle on technology.

As discussed above, Vietnam's commercial and maritime legal systems are not well-designed to accommodate electronic transport documents in general. In this regards, it is an undisputed fact that, the legal regime does not recognize e-Bills as a document equivalent to a traditional B/L. Therefore, the law on e-transactions needs immediate amendments or enactment of new legal regimes which will be compatible with
requirements of electronic documents. The contents of the MLEC and MLES provides a valuable reference for Vietnamese lawmakers to consider codifying and incorporating into the national legal framework.

4.3.1.2. Development of e-commerce development strategy in foreign trade

On February 9, 2007, the Political Bureau issued Resolution No. 09/2007/NQ-TW on Vietnam’s sea strategy toward 2020, which stressed: “The 21st century is viewed by the world as the “the century of the ocean”. All coastal states pay great attention to the sea and attach importance to the formulation of sea strategies. The East Sea, embracing Vietnam’s sea areas, holds a very important geo-economic and geopolitical position.” Vietnam’s sea strategy toward 2020 sets out basic directions and tasks and provides major solutions for exploiting the sea. It states that by 2020, Vietnam will successfully develop its marine and coastal economy, including oil and gas exploitation and processing; maritime economy; marine resource exploitation and processing; development of sea tourism and island economy; and building of coastal economic zones, industrial parks and export processing zones in association with development of coastal cities. The strategy urges building on the potential of marine science and technology to meet the requirements of the doi moi (renewal) cause and effectively serve the process of national industrialization and modernization (Ba Dien, 2012).

In order to achieve the above objective, Vietnam needs to learn and update the development trends of the world, one of the most prominent trends is the application of information technology and e-commerce to foreign trade. Lessons from Korea show that, it will be a long journey from setting up the strategies and plan of modernization through to its implementation and also that this costs huge amount of money. The Korean government has developed a comprehensive commercial automation strategy since 1989 and need 20 years to complete the new national e-Bills system (KTNET). However, this is a very worthwhile effort because, according to calculations, Korea's paperless trade system saves the economy around $5.57 billion every year while expenditures on it are only $0.15 billion (Sung, 2010).
As shown above, Vietnam have an economy is heavily dependent on import-export activities (the share of exports accounts for 90% of GDP), therefore, a coherent strategy for development and application modernization and e-commerce needs to be formulated. In general, the strategy should include the following:

- Political commitment of the government
- Availability of technology platform
- The protection of the law and security system
- Streamlined, simplified and standardized data and processes
- An effective management system that connects all stakeholders.

In particular, in the application of e-Bills in Vietnam, Government may refer to two development strategies (1) to provide a legal and technical basis for encouraging businesses to use existing international e-Bills systems (Bolero, essDocs, E-title) and (2) building Vietnam's national e-bill system like Korea.

With current technical infrastructure, Vietnam should combine both strategies (1) in the short-term and (2) in the long-term. If build up a national e-bill system we have the possibility to integrate with other electronic management system such as e-customs, e-tax, e-government, etc. However, it requires a well-developed legal and technical platform and takes time thus strategy (1) as a necessary step can be consider in short-term.

4.3.2. Other Recommendations

4.3.2.1. Create Conducive Technological Infrastructure for EDI

The use of e-BL requires basic technological advancement for its implementation. Thus the government should consider creating a reliable technological environment for entities involved in the shipping industry. The entities may use of computers in their office, but a fully integrated electronic system that
connects users domestically and internationally is mandatory for operation of paperless transactions. For example, internationally, there must be a system that directly or indirectly connects importers to exporters, carriers, banks and insurers; whilst, domestically, there must be a system that links importers and exporters to their brokers, freight forwarders, banks, and government agencies such as port authorities, customs.

4.3.2.2 For shipping Communities

In the age of globalization and digitalization, import-export, logistics and transport enterprises, must be aware of the importance of information technology in business. Therefore, enterprises should have proper investment in the development of information technology infrastructure to improve their business efficiency as well as to improve the security and confidentiality of business operations, such as:

- The investment in information security technology must be synchronized: online backup systems; includes antivirus products, malicious code, access monitoring system and detection of attacks, unauthorized access.

- Application of digital signature system to perform electronic authentication, data encryption is stored, exchanged over the network.
CHAPTER V
CONCLUSIONS

The paperless era is getting closer and closer to becoming a reality within the business world every day. As early as the 1980s, it was recognized that international trade would benefit from the implementation of paperless transactions and in the shipping industry the interest in modernizing the most important document in shipping, the bills of lading, has grown significantly. Before the current electronic phase, the B/L has undergone a gradual development process in order to meet the requirements of merchants and other stakeholders in the maritime field.

The traditional B/L is widely accepted to have three key features (i) it acts as receipt of the carried goods, (ii) it evidences or contains the contract of carriage of goods and (iii) it is the document of title. Among, the most important functions of the B/L related to the document of title function, are transferability and the exclusive control over the goods.

Thanks to these well-developed functions, the paper B/L has been used for many years despite the fact that communications within the shipping industry have become increasingly digital and electronic. However, for some time there has been a lot of research into replacing the traditional paper with an electronic form and into whether the e-Bills can totally supersede the paper B/L. In practice, while the use of e-Bills in international trade over the world has grown, it is still incomplete story, and the picture is even less bright in developing countries such as Vietnam.

It is difficult to argue against the advantages of e-Bills in the international trade and shipping industry concerning the reduction in administrative cost, the time saved, and security, which all may translate into considerable cost savings. The development of e-Bills can only continue, however, if it is widely accepted that they can successfully replicate the essential functions of paper B/L, as mentioned above, when they are transferred electronically.
The various e-Bills systems that are in use today have some downsides, but they have also shown that the functions of a B/L have been successfully provided, albeit, with a different nature and procedural characteristics to traditional paper B/L. It does therefore seem that more extensive use of e-Bills can certainly become reality. Further development in the near future will lead to E-Bills acquiring the same status of negotiability as paper B/L and they will eventually become the mercantile custom by acceptance, duration and intensity of usage.

This research also found that while the first two attributes of a B/L (as a receipt for the goods and as evidence of the contract of carriage) may not be difficult to repeat electronically and may not present specific legal problems, the same cannot be said of the feature of acting as a document of title. In order to achieve the desired replication of these features, especially the third one, the legal frameworks, as well as commercial practices, need to recognized e-Bills as of equal value as their conventional counterparts. Apart from the specific challenge of negotiability, the effective utilization of the e-Bills also faces the same difficulties as all other electronic transactions, namely the authentication and signature requirements, and the evidential value and admissibility of electronic documents.

At the international level, there have been attempts to address these problems resulting international instruments such as the MLEC, CMI Rules, and the relevant e-Bills provisions of the Rotterdam Rules. In fact, these instruments, to some extent, recognized electronic transactions as being of equivalent legal validity as a paper document. However, they are mere model rules which are not source of law, unless they are adopted into national legislation. Also, The Rotterdam Rules are not yet in force because they have not been ratified by nations. Even if they were to enter into force, they contain no provision that prevents a party from insisting on the use of a paper B/L. Even if these model rules are accepted by relevant party by incorporation into their contracts, they will have no validity where there is a local law that contains a contrary or prohibitive provision.
Nevertheless, paperless B/L are realizable if vigorously pursued either by policy initiatives or legislative measures or States, including computerization of port facilities by customs and government authorities and amending domestic laws to embrace the e-Bills. Similarly, carriers, shippers and international organisations can adopt BBL or other similar electronic means of facilitating the e-Bills.

The main objective of this research is consider the particular case of Vietnam. It is clear that in order to apply e-Bills, it requires the careful preparation by the Vietnamese Government and enterprises. There is, no binding electronic documents legislation in Vietnam, apart from the general provisions of the Vietnamese Law on E-transactions, 2005, that has taken cognizance of data messages generally. But, B/L is not within the scope of this law. There are a number of options to consider in addressing the challenges of e-Bills including judicial and legislative interventions, the registry platforms as well as incorporation of model international legal instruments such as MLEC or any relevant clauses therein, into private contracts.

Below are some detailed recommendations:

For the Vietnamese Government

(i) a strategy for developing e-commerce in foreign trade should be developed

(ii) develop legal regulations governing the issuance and transfer of e-Bills;

- Amend the Law on E-Commerce 2005 to codify MLEC and MLES for shipping documents, especially transferable documents such as B/L.

- If the Rotterdam Convention takes effect internationally, consider joining.

(iii) a strategy for ensuring the security of information and network security should be developed.

For Vietnamese enterprises:
- Be aware of the role of information technology, EDI and e-Bills in import-export business activities, international freight forwarding and transportation;

- Understand and opt for existing and approved by IG systems including Bolero, essDocs and E-title;

- Invest in the development of information technology infrastructure in order to raise the business efficiency of enterprises;

- Enhance the security of information systems of enterprises.

Last but not least, innovative and revolutionary products are constantly being launched by the e-Bill providers, taking business ever nearer to a completely paperless global trading system. The advent of the term "blockchain" and associated new technological platform will be the latest breakthrough in paperless transport documents. It is now becoming reality with the first Blockchain-based Bills of Lading CargoX37 (Smart Bills).

Overall therefore, it can be concluded that the strategic preparation of a technical and legal basis that can support increased use of e-Bills is urgently needed and should be developed immediately, especially for countries such as Vietnam where continuing growth is increasingly reliant on efficient international shipping trade. /.

37 https://cargox.io/
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