

UNIVERSITY OF ESSEX

DISSERTATION

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LLM/MA IN: International Trade & Maritime Law

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DISSERTATION TITLE

- Why functional equivalence between electronic and paper Bill of Lading is not yet possible and why International Projects and business initiatives have failed to successfully deal with this issue?

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1. INTRODUCTION

Since the 1980's it has become evident that establishing a network of paperless transactions would dramatically increase the flow of revenue and discussions as to whether the traditional paper bill of lading should be replaced by an Electronic bill of lading has noticeably grown. Recent technological developments such as the Electronic Data Interchange (EDI) and the blockchain technology are aiming in setting the roots for a universally accepted electronic bill of lading. However, the traditional paper bill of lading still remains the most popular document in international shipping. The highly notable international project and initiatives (Bolero, Reinskou's Method, SeaDocs, CMI¹ etc.) have not been successful in replacing the paper bill with the electronic one.

There is not any standard definition of an E-bill but in general terms, an E-bill is an electronic record which aims to have the functional equivalence of the traditional paper bill of lading. The E-bill should also be compatible with the numerous and various contracts that form a single international trade transaction. Namely, these are the sale and purchase contract, the contract of carriage, the insurance contract and letters of credit.²

The bill of lading has three main functions, it is a contract of carriage, a receipt of goods, and a document of title. In order for the E-bill to be an acceptable legal document it must satisfy all three functions of the paper bill. The National Law of the country where the bill of lading was issued determines to a great extent whether these functions can be replicated in an electronic version as long as the country's law governs the transaction. For example, electronic shipping documents are not within the scope of the Carriage of Goods by Sea Act 1924 recognised forms of sea-carriage in the United States.³

The receipt and evidence functions of the traditional paper bill can easily be replicated by digital means because they are only correlated with the transfer of information. COGSA⁴ requires the carrier to provide a bill of lading in which it is stated " either the number of packages or pieces, or the quantity or weight,

¹ Comite Maritime International

² Paul Todd, Bills of Lading and Bankers' Documentary Credits (4th edn, Informa Law 2007) p22

³ Carriage of Goods by Sea Act 1924, art 46, U.S.C app. para 1300-1315 (2000)

⁴ Ibid 3

as the case may be, as furnished in writing by the shipper.”⁵ All of these ought to be included in the electronic bill in order to successfully fulfil the receipt function of the traditional paper bill of lading.

The document of title function of a bill of lading is the last function that must be recreated in electronic structure and signifies three uses of the bill of lading. In the first place, possession of the bill of lading establishes constructive possession and control over the goods it refers to. Secondly, the bill of lading might be utilized to give title to the goods. Lastly, the bill of lading is utilized to offer security in the goods it represents.⁶ Little consideration has been given to the last component of the bill of lading, despite the fact that one of the most troublesome problem for the electronic bill of lading to defeat is to give acceptable security over the products it refers to.

The focus of the paper will be on the function of document of title/Negotiability rather than the function of receipt and evidence of contract. The scope of the essay is to discuss why functional equivalence is not yet possible and this is due to the inability of the electronic bill of lading to be a negotiable instrument and therefore be a document of title. The other two functions will not be debated to a long extent as they both can be replicated in electronic form.⁷ Negotiability will be analysed firstly, in accordance with its correlation with the paper bill of lading, then how English Law treated it in court at the early stages and then, in accordance with its correlation with the electronic bill of lading. Furthermore, it should also be enlisted as a legal impediment for the recognition of the electronic bill of lading as the analysis will demonstrate. The second part of the essay will demonstrate how International Projects and business initiatives tried to resolve the problems of functional equivalence. Then the reasons for which they failed will be analysed. As a conclusive note, the gaps and findings that were found to have a direct impact on the progress of the projects and initiatives will also be demonstrated along with suggestions as to how the legal impediments blocking the recognition of the electronic bill of lading could be solved.

⁵ 46 U.S.C. app. § 1303(3) (b) (2000)

⁶ Micheal Bridge, *Benjamin's Sale of Goods* (8th edn, Sweet & Maxwell Limited 2013) p 1469

⁷ Amedeo Delmedico 'EDI Bills of Lading: Beyond Negotiability' (2003) 1(1) *Hertfordshire Law Journal* 95-100

2. The Traditional (paper) Bill of Lading

In this part an examination of the main three functions of the paper bill of lading will take place in order to provide a better overview on whether the electronic bill of lading could substitute these three functions.

2.1 The Bill of Lading as a receipt

Bills of lading usually refer to the quantity, condition and quality of the goods. Statements in regard to the goods are important as long as the carrier has a duty to transfer these items in the same condition as the bill of lading states. The statement in regard to the quantity of the goods is *prima facie* evidence at common law that the quantity initially claimed to have been shipped have been in fact shipped.⁸ Therefore, in the event where a third party was transferred a bill of lading with such statements in good faith and the position of that person was changed according to the statement in the bill of lading, the carrier was estopped from denying the statement.⁹ However, the principle which states that a third party indorsee had no remedy against a carrier who could prove that no goods have been shipped, as long as the master of a ship had no right to make these statements when the cargo had not been actually loaded on board.¹⁰ This principle, established in *Grant v Norway*¹¹ has been abolished by the Hague Visby Rules. Article 3(4) of the Hague Visby Rules states that a bill of lading is prima facie evidence of the receipt of the goods and any other evidence suggesting otherwise shall be deemed inadmissible at the time when a bill of lading has been transferred to a third party acting in good faith. This notion comes in contrast and overrides the common law rule stemming from the case of *Grant v Norway*.¹²

As long as it is the carrier's responsibility to transfer the goods in the same condition as they were accepted, it is also the carrier's interest to mention in the bill any defects during the load of the goods on board. If defects are included by the carrier the bill is called a 'claused' bill of lading. A

⁸ Zekos Georgios, 'Judicial Analysis of The Contractual Role of Bills of Lading As It Stands in Greek United States And English Law' (PhD Thesis University of Hull, 1998) p 63

⁹ Rouhshi Low, 'Replacing the Paper Bill of Lading with an Electronic Bill of Lading: Problems and Possible Solutions' (2000) 5 International Trade & Business Law Annual 159-215

¹⁰ *Grant v Norway* (1851) 10 CB 665

¹¹ *ibid*

¹² *Ibid* 12

non – ‘claused’ bill of lading is a ‘clean’ bill of lading.¹³ When the bill of lading is held by a bona fide transferee for value, it is considered to be conclusive evidence. Article 3(3)(c) of the Hague Visby Rules required the carrier on the shipper’s request, a bill of lading stating the current order and condition of the goods. Thus, that is considered to be prima facie evidence of the receipt of the goods mentioned in the bill and any kind of proof evidencing the opposite is not admissible in court at a time when the bill of lading has been transferred to a third party acting in good faith.¹⁴

2.2 The Bill of Lading as evidence of the contract of carriage

It is worth mentioning that the bill of lading does not by itself constitute the contract of carriage but is solely evidence of the contract.¹⁵ It provides evidence of the terms and condition of the agreement reflecting the agreement on which the goods have been shipped and received by the carrier.¹⁶ However, there is room the carrier to adduce evidence mentioning terms of the contract not enlisted in the bill of lading. Therefore, an oral agreement which come (partially) in contrast with the terms enlisted in the bill is considered evidence eligible for admissibility. This is clearly demonstrated in the case of *Ardennes SS*¹⁷ where it was held that as long as the bill of lading was only evidence of the contract of carriage, the shipper is eligible to provide evidence that a contract was made prior to the signing of the bill of lading and the terms between these two contracts could differ from each other. Thus the shipper was able to rely on the oral agreement’s terms and sue for breach of contract.¹⁸

2.3 The Bill of Lading as a document of title

Although it may perceived as straightforward, the function of the bill of lading to be a document of title is much more complicated in the legal sense. An important reason for this is considered to be the lack of a universal definition of the document of title in the common law from since its

¹³ Carver, T, *Carriage of Goods by Sea*, (13th edn, Stevens & Sons Ltd, 1982) p 1012

¹⁴ *Ibid* 12 Art 3(4)

¹⁵ *Sewell v Burdick* [1884] 10 App Cas 74 para 105

¹⁶ *ibid*

¹⁷ *SS Ardennes (Cargo Owners) v SS Ardennes (Owners) (The Ardennes)* [1951] 1 KB 55.

¹⁸ *ibid*

emergence.¹⁹ The bill of lading is regarded as a document of title and its indication is embedded in the case of *Lickbarrow v Mason*²⁰ and is considered to be the leading case of the modern paper bill of lading where the proprietary rights of the holder in due course were put in question. Although it was decided that the bill of lading transfers the property in the goods, the decision seemed to be silent in regard to the negotiability of the bill of lading²¹. It was decided in the case that the holder of the bill has the right to claim possession of the goods, whereas the initial decision had its roots on the principle of negotiability and it had provoked a debate on the status of the bill of lading.²² According to some academics, the triumph of the paper bill of lading over all the other shipping documents lies within its function to be a document of title and the negotiability element connected with it.²³ Noticeable is the fact that the function to be a document of title is the only difference between a sea waybill and a bill of lading as sea waybills can satisfy the other two functions.²⁴ In the last decades, there have been serious efforts to introduce the electronic bill of lading but the function of being a document of title is the most difficult to substitute in electronic format and has resulted in a severe impediment.²⁵ Although bills of lading as a document of title provide security for credit, like letter of credit transactions,²⁶ banking instruments had reservations in regard to the role of bill of lading to be a negotiable document of title.²⁷ It has been mentioned that only the documents which are ordered or carry instructions on the face are negotiable.²⁸ Moreover, negotiability of a bill of lading is not equivalent to that of banking instruments and the holder of a bill of lading at the appointed time does not hold the title any more securely than the issuer and his title is subservient to the issuer's one.²⁹

¹⁹ Torsten Schmitz, 'The bill of lading as a document of title' [2011] 10(3) Journal of International Trade Law and Policy 255-280

²⁰ *Lickbarrow v Mason* [1782] 35 ER 100 (KB)

²¹ Bools MD, *The Bill of Lading as a Document of Title to Goods: An Anglo-American Comparison* (1st edn, LLP 1997)

²² *Ibid* 23 para 71

²³ C O'Hare, 'Shipping Documentation for the Carriage of Goods and Hamburg Rules' (1978) 52 Australian Law Journal 34-62

²⁴ Gi Zekos, 'Negotiable Bill of lading and their Contractual Role under Greek, United States and English Law' (1998) 40 (2) Managerial Law 5-24

²⁵ Todd P, 'Dematerialisation of Shipping Documents' (1994) 9 (10) Journal of International Banking Law p 410-418

²⁶ Williams SM, 'Something Old, Something New: The Bill of Lading in the days of EDI' (1991) 1(2) Transnational Law & Contemporary Problems 555

²⁷ Tettenborn, A. Transferable and negotiable documents of title – a redefinition? (1991) , Lloyd's MCLQ, 538

²⁸ *Henderson & Co v Comptoir d'Escompte de Paris* (1878) LR 5 PC 253

²⁹ *Kum and Another V Wah Tat Bank LTD* [1971] 1 AC 439 (HL)

2.3.1 What Constitutes a Document of Title?

As mentioned earlier the case of *Lickbarrow v Mason*³⁰ the bill of lading was officially a document of title. However, in the totality of the judgement it is not defined what is qualified as a document of title. In broad terms, title is a definition identifying the right of ownership of property of goods but this notion of the word is much more correlated in land records or documents linked with ownership of land.³¹ Thus, this sense of the definition of the word 'title' is highly correlated to a permanent or semi-permanent record in which the bill of lading is not and any oversimplification can be deemed as useless³². A more solid definition of title and document of title is needed and for that reason jurists and judges are free to intellect and adjudicate.³³ It is recognised that the essential features of a document of title are operative on the endorsement that transfers the title in property.³⁴ This endorsement passes only that property which the parties intend for the purposes of a mortgage, or absolute transfer regardless of whether they have the right to the stoppage of goods in transit³⁵. In the more recent judgements, similar observations have occurred making it capable for the constructive possession of the goods. Moreover in the case of *Delfini*³⁶ it was stated that "*although not itself capable of directly transferring the property in the goods to which it represents, merely by endorsement and delivery, nevertheless is capable of being part of the mechanism by which property is passed.*"³⁷ Moreover, in the case of *Barclays*³⁸ it was indicated that the contract of carriage of goods by sea serves two functions. Firstly, the carrier receives the goods as the bailee of the goods and the second function is to deliver the goods the legal recipients of the goods in order to transfer ownership if the goods under bailment³⁹. Therefore, the bill of lading containing the contract of carriage is the 'guarantor' of the functions which were mentioned and the carrier or

³⁰ Ibid 23

³¹ RM Goode, *Proprietary Rights and Insolvency in Sales Transactions* (2nd edn Sweet & Maxwell 1989) p143

³² Dromgoole, S. and Baatz, Y. (1998), "The bill of lading as a document of title", Palmer, N. and McKendrick, E. (Eds), *Interests in Goods*, (2nd ed, LLP, London) p 146

³³ Ibid 34

³⁴ Ibid 23

³⁵ Ibid 18

³⁶ *The Delfini* [1988] 2 Lloyd's Rep 599

³⁷ Ibid (Mr Justice Phillips)

³⁸ *Barclays Bank Ltd v Commissioners of the Customs and Excise* [1963] 1 Lloyd's Rep 81

³⁹ Ibid para 88

the ship-owner is legally bound by the orders of the original shipper of the goods where the bill of lading is a negotiable one.⁴⁰ Opinions of other academics should also be noted. Benjamin, in his work stated that a document of title should be capable of transferring constructive possession of the goods and that it might serve as a transfer of the ownership of the goods.⁴¹ Moreover, it is said one of the functions of the bill of lading is to be a document capable of transferring contractual rights and also to serve the transfer of the property of goods.⁴² Other academics are mentioning that constructive possession and transferability elements of the bill of lading are essential features in its function as a document of title.⁴³ To the contrary, possession of the bill has also been correlated with the possession of the goods.⁴⁴ Ultimately, the bill of lading is the document attached with the ability to control receipt of the goods at the destined port. It can serve as security for the credit given by the banks or other financial institutions, therefore making it a document of title in this manner. Before the case of *lickbarrow*⁴⁵ the bill of lading was not correlated with possession of the goods, but more and more recent judgements have demonstrated that actual possession of the bill of lading represents the possession of the goods and is the symbol of property.⁴⁶

2.4 Negotiability

Negotiability is a concept established in law and is often used in commercial practise. Through negotiability the transfer of property rights or title enlisted in the appropriate document is legally available from a person to another.⁴⁷ Apart from the bill of lading, other financial institutions correlated documents like bonds and warehouse receipts have the function of transferring property embodied are considered negotiable documents.⁴⁸ In broad terms, the rights enlisted in a negotiable instrument/document are transferable by delivery whenever drawn by the carrier and by endorsement, if transferable by endorsement, and, simultaneously, if the holder of a negotiable

⁴⁰ *ibid*

⁴¹ AG Guest, *Benjamin's Sale of Goods* (5th edn Sweet & Maxwell 1997) p18

⁴² R de Wit, *Multimodal Transport, Carrier Liability and Documentation* (1st edn, LLP 1995) p 413.

⁴³ C Debattista, *Sale of Goods by Sea* (1st edn, Butterworth & Co Ltd 1990) p92

⁴⁴ JF Wilson, *Carriage of Goods by Sea* (4th edn Longman 2001) p140-145

⁴⁵ *Ibid* 23

⁴⁶ *Sargent v Morris* (1820) 2 B. & Ald. 277

⁴⁷ Jane Kaufman Winn, 'Electronic Chattel Paper under Revised Article 9: Updating the Concept of Embodied Rights for Electronic Commerce'[1999] 74(3) *Chicago-Kent Law Review* p1055-1075

⁴⁸ *ibid*

document is acting in good faith and is a bona fide purchaser, the bearer holds the right to the title of the goods, even in cases where the title of the endorser is deemed to be deficient⁴⁹ and the holder of the bill can sue against any party imposing up on this right in his own name.⁵⁰

2.4.1 Paper Bill of Lading & Negotiability

It is evident that a bill of lading might or might not be a negotiable document. However, only the negotiable bill of lading can change constructive possession and force the carrier to transfer title to someone other than the initial recipient which was stated in the bill of lading. In a sense, this scenario provides the essential elements for a bill of lading to be a document of title. A non-negotiable bill of lading serves for the delivery to the named consignee, without the need of production of a bill when identifying the legal recipient at the destined port.⁵¹ Through a negotiable bill of lading the carrier ought to deliver to the consignee or to a person on his order. There are numerous ways for this to happen. In case where the carrier is consignee, an order can be placed in the face of the bill. Secondly, the specific wording “*to the order of*” to provide a room for endorsement on the bill of lading. Thirdly, an open bill of lading with the directions as to the bearer of the document with the provision of blank endorsement for any third party.⁵²

2.4.2 Negotiability & English Law

Many and different opinions exist in regard to the negotiability of a bill of lading. The case of *Dixon*⁵³, it was clear that there were certain requirements for a document to be a negotiable instrument. A document is considered to be a negotiable instrument if the appropriate traders and their business market have regarded this instrument to be a negotiable instrument by tradition.⁵⁴ Similarly, unless the traders or traditions regard the bill of lading as negotiable document then it can

⁴⁹ CM Schmitthoff, *Schmitthoff's Export Trade: The Law and Practice of International Trade* (11th edn Thomson/Sweet & Maxwell 2007) p 196

⁵⁰ *Crouch v The Credit Foncier of England Ltd* [1873] 8 LR 374 (QB)

⁵¹ JL Chapman, IV and SA Voyles, ‘Cargo Litigation: A Primer on Cargo Claims and Review of Recent Developments’ (2004) 1(16) *University of San Francisco Maritime Law Journal*, 1–60

⁵² JW Richardson (ed), *The Merchants Guide* (P & O Nedlloyd, 2003) p48

⁵³ *Dixon v Bovill* [1856] 19(9) D (HL)

⁵⁴ *ibid*

be deemed enforceable, otherwise it is not. According to Negus “*in attempting to arrive at the truth concerning the negotiability of the bill of lading, the very first thing to bear in mind is that if to be today or tomorrow the general customs of merchants to treat bills of lading as negotiable instruments, courts of law will very readily sanction that custom.*”⁵⁵ According to that logic the bill of lading is not a traditional negotiable document. On the other hand, Carriage of Goods by Sea Act (1992), a bill of lading appears to be a negotiable instrument, similar to the negotiable instruments of the financial institutions sector. In light of these facts it was clear that right before the 20th century, the bill of lading was considered to transfer the rights enlisted in it but was not sufficient to constitute a negotiable document similar to the instruments in the banking sector.⁵⁶ It was held in the case of *Fuentes v Montis* that the bill of lading is a negotiable instrument only to the extent of the stoppage while in transit.⁵⁷ In this sense however it cannot be deemed as strictly negotiable as it is confined to the stoppage right and not the transfer of title.⁵⁸

On the other hand, since the judgement of the case of *Lickbarrow*⁵⁹ Jurists and law courts have treated the bill of lading as a negotiable document of title as long as the endorsee has trust in the document endorsed to him as far as the transferability of the goods in transit is in his favour. This notion is boosted by the carrier who respects the endorsement on the bill of lading and transfers the goods to the expected endorsee of the bill.⁶⁰

The main focus in English Law is the feature of transferability rather than the feature of negotiability as it is perceived in contract law for the banking sector’s bill of exchange. In this sense, the crucial difference was the express indication of transferability in the case of bill of lading, which is not a prerequisite in cases of other negotiable instruments. However, in the case of *Aramis*⁶¹, it was stated that the holder of a bill of lading was entitled to accept possession of the goods and this notion is impossible without him filling the position of the endorser. Thus, it is straightforward that transferability is highly correlated with negotiability or it is the same. Accordingly, Tettenborn in his work stated that *‘this is simply to say that the two documents [bills of lading and bills of exchange]*

⁵⁵ R Negus, ‘The Evolution of Bills of Lading’ (1921) 37 LQR 304, p444.

⁵⁶ *Gurney v Behrend* [1854] 3 EL & BL 622 para 633

⁵⁷ *Fuentes v Montis* [1886] LR 3 CP 268 para 276

⁵⁸ JM Holden, *the History of Negotiable Instruments in English Law* (2nd edn, Sweet & Maxwell 1955) p212

⁵⁹ *Ibid* 23

⁶⁰ *Ibid* para 3

⁶¹ *The Aramis* [1989] 1 Lloyd’s Rep 213

are negotiable in different, if sometimes overlapping, circumstances: not that one is negotiable while the other is not.⁶² Moreover, in cases where a carrier could not have knowledge in regard to the endorsement of the bill, the bill of lading as a negotiable instrument in the commercial meaning of the term.⁶³ This notion was subsequently supported in the case of *Merak*⁶⁴. Nowadays, this legal position of the bill of lading is being maintained and supported by the Sale of Goods Act 1979⁶⁵ and Factors Act 1889⁶⁶

Conclusively, in the earlier years the bill of lading was considered to be a negotiable instrument but was not considered negotiable in the strictest sense in the commercial era. However, especially through the enactment of the Sale of Goods Act 1979, the courts regard the bill of lading as negotiable instrument as it strengthened its position towards that notion.

2.5 Bill of Lading as Collateral Security

Regardless of the traditional functions of the bill of lading, nowadays requirements have evolved. Many occurrences of the use of bill of lading as collateral in the commercial business exist, promoting its acceptance as a document of title and its immanent nature of financing the carriage of goods by sea in international and domestic transactions.⁶⁷ All banking systems encourage the issue of credit against a valid bill of lading. Banks accept drafts issued against shipments in cases where the bill of lading governs the transaction in the first place. On the other hand, drafts can be drawn on the purchaser of the goods and be accepted where the bill of lading governs the transaction and it is attached along with the draft for security means to the note or credit of the bill.⁶⁸ It has been held that it is the right of the owner of the bill of lading to pledge his contractual right written in the bill as collateral security of the debts.⁶⁹ Moreover, it was held that the pledging of the bill of lading is proportionate to the pledging of the goods, even though a title over the goods is not awarded to the pledgee. The status of the pledgee will remain more powerful in comparison with

⁶² Ibid 30 p 546

⁶³ The Federal Bulker [1989] 1 Lloyd's Rep 103 para 105

⁶⁴ The Merak [1964] 2 Lloyd's Rep 527 para 530

⁶⁵ Sales of Goods Act 1989 S.47(2)

⁶⁶ Factors Act 1989 S.10

⁶⁷ F Thulin, 'The Bill of Lading as Collateral Security under Federal Laws' (1918) 16(6) Mich Law Review, 445

⁶⁸ *ibid*

⁶⁹ Douglas, Receiver v People's Bank of Kentucky [1887] 86 Ky 176

other equities to which the bank has no notice of.⁷⁰ Although the banks have a constructive possession of the goods under pledge, in most cases however there is a tendency in which buyers pledge property under the bill and it seems as an inconsistency as long as the purchaser has imperfect rights over the property. To provide balance on this manner it was perceived that the purchaser's pledge is formed by the seller on behalf of the purchasers.⁷¹ The International Chamber of Commerce in an attempt to achieve uniformity of these kind of practises has broadly suggested the acceptability of the bill of lading as a documentary credit.⁷² These kind of transactions have generated a rather complicated case law. In cases where goods were sold under a bill of lading based on the acceptance of the goods by the purchaser, it was held that the title is not vested in the purchaser but in the seller and in case where a credit is raised against this bill of lading, the title would eventually be vested in the bank to secure the loan and the goods would end up under mortgage with the bank through constructive possession. The bank can take advantage of the title over the goods and exploit it until payment is made in case of an unfinished transaction (contract of sale) due to the buyer's refusal to accept the goods.⁷³

3. Electronic Bill of Lading

3.1 Electronic Commerce & Statutory Provisions

At this point the provisions that facilitate the use of an electronic bill of lading will be discussed. The most relevant statutory provision is Rotterdam Rules and that is where this chapter will be focused on. Moreover a partial note will be made to the UK Electronic Communications Act 2000.⁷⁴

⁷⁰ Zhao L, 'Legislative Comment Control of goods carried by sea and practice in e-commerce' (2013) 6(1) JBL 592

⁷¹ The Future Express [1993] 2 Lloyd's Rep 542 para 547

⁷² International Chamber Of Commerce (ICC) Uniform Customs and Practice for Documentary Credits Act (1993)

⁷³ Ibid 73

⁷⁴ UK Electronic Communications Act 2000

Electronic Transport Record Provisions

Rotterdam Rules promote the use of paper and electronic bill of lading with the same force.⁷⁵ This inclusion of the electronic data and electronic commerce is the outcome of trends within the international trade business and the ambition of the community to accelerate global trade by sea,⁷⁶ especially because the Electronic Communications Convention of 2005 has already addressed the simple delivery of the documents.⁷⁷

Technological Neutrality & Functional Equivalence

The substitution of the functions of the paper bill into the electronic bill of lading is required in order for it to be a legally valid document. Therefore, functional equivalence and technological neutrality issues were raised during the meetings of the Rotterdam Rules Committee. The Rules are framed with the premise of clarifying the legal positions of the contracting parties without searching for a unified code approach. This created the basis of the function approach that provides for the condition and provisions of the documents and attempts to promote equivalence without changing the very same nature of the specific trade document.⁷⁸

The functional equivalence entails there shall be no difference in paper communication and electronic form communication and both types shall enjoy the same treatment under the law in regard to its enforceability. This neutrality notion was subject to criticism because of the overstretching of the paper communication rules and established notion of a document created outside the premises of the trade community, especially in jurisdictions which had already adopted electronic communication as admissible and legal evidence. In an attempt to overcome this issue, in Rotterdam Rules defined 'electronic communication' as "*information generated, sent, received or stored by electronic, optical, digital, or similar means with the result that the information*

⁷⁵ Rotterdam Rules Article 38-40

⁷⁶ The American Bar Association, 'The Commercial Use of Electronic Data Interchange – A Report and Model Trading Partner Agreement' (1990) 45 the Business Lawyer 1645

⁷⁷ United Nations Convention on the Use of Electronic Communication in International Contracts (2005), Chapter 3 Article 8

⁷⁸ E Faria and J Angelo, 'Uniform Law and Functional Equivalence: Diverting Paths or Stops along the Same Road? Thoughts on a New International Regime for Transport Documents' (2011) 2(1) *Elon Law Review*, 1–38 p18

*communicated is accessible so as to be usable for subsequent reference*⁷⁹ This definition can be characterised as condensed and provides for the information, which when it is sent, it is required for certain purposes to be saved and presented as evidence of the transaction to validate its lawful essence.⁸⁰ These characteristics provide functional equivalence of electronic communication similar to paper-based communication.⁸¹ Parties are able to communicate with each other making statements and negotiate the terms through the use of *"electronic, optical, digital or similar means"*.⁸² They provide that the electronic transportation record is the information included in one or more messages generated under the scope of contract of carriage by a carrier. This information linked with the electronic transport record constitutes the evidence of the contract of carriage and the receipt of the goods.⁸³ This rule again is based on the functional equivalence approach. In the case of the traditional paper bill of lading any change in quantity, value, change of port of destination, receivers, etc., thus, is its electronic counterpart such changes are to be recorded except from messages issued by an electronic communication method under the scope of the contract of carriage.⁸⁴ Media neutrality and functional compatibility were introduced to ensure certainty and the Rotterdam Rules refer to paper documents and electronic ones without impeding media neutrality and without imposing any disadvantage to the follower of any form of transport record.

Rotterdam Rules & Electronic Signatures

The important relation between documents and signature has been developed through case law and the intentions of the legislation.⁸⁵ According to Rotterdam Rules signature includes the electronic signature of the carrier or a person on his behalf and is a proof of the authorisation of the electronic transport record.⁸⁶ The signature provision, however, requires a standard of compliance

⁷⁹ Rotterdam Rules, Article 1 para 17

⁸⁰ Ibid 77

⁸¹ JD Gregory, 'The UETA and the UECA: Canadian Reflections' (2001) 37 Idaho Law Review 441

⁸² Ibid 80

⁸³ Ibid Article 1, para 18

⁸⁴ Ibid Article 1, para 14

⁸⁵ C Proctor, *The Legal Role of the Bill of Lading, Sea Waybill and Multimodal Transport Document* (ML dissertation, University of South Africa, Pretoria 1996) p 11

⁸⁶ Rotterdam Rules, Article 38(2)

when it comes to electronic signatures and to keep at level with the paper documents.⁸⁷ The need for the legal recognition of the electronic signature has been a long time issue and article 40 of the Rotterdam Rules is considered to have a correlation with Article 9 of the United Nations Economic Commission for Europe (UNECE) with the only difference lying in the scope of it. Article 38 is the mirror of the functions of electronic signatures, but signatures have the function of identification and authentication on the paper counterpart and thus, for electronic equivalence to be promoted, this provision is introduced.⁸⁸

It must also be noted that the Rules never made a reference to the agency issue problem which is found in the majority of electronic transactions. The Rules permit the issuance of electronic documents by the carrier or any other party acting on his behalf, however, most of the available services in regard to the electronic document transfer are being carried out by a third party and these services are linked with the agency relationship with most of the parties. Private attempts to introduce electronic registries and databases have dealt with this agency issue problem and has been recognised by States and stakeholders in the maritime environment.⁸⁹

Rotterdam Rules and Transfer of Negotiable Rights

For the first time, legislation accepts the transfer of negotiable rights through electronic records in order to provide functional equivalence. Article 49 of the Rules permits the transfer of negotiable rights through electronic mode and chapter 10 of the Rules contain all the relevant information linked with the holding and transfer of negotiable rights.⁹⁰ According to the Rules, the negotiable electronic transport record is similar to any transport record "*that indicates, by statements such as 'to order', or 'negotiable', or other appropriate statements recognized as having the same effect by the law applicable to the record, that the goods have been consigned to the order of the shipper or to the order of the consignee, and is not explicitly stated as being 'non-negotiable' or 'not negotiable'*"⁹¹

⁸⁷ Ibid Article 40

⁸⁸ The United Nations Economic Commission for Europe (UNECE), Article 9

⁸⁹ AH Boss and JK Winn, 'The Emerging Law of Electronic Commerce' (1997) 52 The Business Lawyer 1469

⁹⁰ Rotterdam Rules, Article 9 & Chapter 10

⁹¹ Ibid, Article 1(19)

The intention of such a negotiable document is mentioned as the transfer record and rights that infers that this information has its recipients along with some evidentiary value in the formation of rights and liabilities and is coming in contrast with the purpose its paper substitute.⁹²

It seems that the provisions linked with electronic commerce in Rotterdam Rules did not provide any technical solution for the problem and it limits itself to the general assumptions that may be able to accommodate business and promote the essence that the registry systems prevail over their own circle of interests. Moreover, these provisions introduced the conditions which were minimally required to satisfy in the attempt to replicate the negotiability function in any electronic mode for a traditional paper bill of lading. Exclusive control over the negotiable document is not available to more than one person at any given time period.⁹³ Thus, control over the information is required for a bill of lading holder or any negotiable document along with the availability to transfer the control to the endorsee attached with all the privileges.⁹⁴

UK Electronic Communications Act 2000

The UK introduced electronic communication through the adoption of the EU Directive on electronic communication via Electronic Communications Act 2000, recognising the electronic signature as a lawful source of authentication, as mentioned earlier. Noticeable is also the fact that the EU Directive allows the use of electronic contracts between the contracting parties if they have initially agreed so.⁹⁵ The main goal of the Act was mentioned in the preamble of the Act and that is to facilitate electronic communication along with electronic data storage. As far as admissibility of electronic data is concerned the Act allows admissibility of "*electronic signatures incorporated into or logically associated with the particular electronic communication and electronic data.*"⁹⁶ These signatures might also be admissible as long as they are certified by author, therefore authenticating the data and communication enlisted in the document.⁹⁷

⁹² JK Winn, 'What is a Transferable Record and Who Cares?' (2001) 7(2) Boston University Journal of Science & Technology Law, 205

⁹³ Rotterdam Rules, Article 1(21) & 8(b)

⁹⁴ Ibid Article 1(11) & 10(1)(a)

⁹⁵ EU Directive on Electronic Commerce No. 2000/ 31/ EC. S.9(1)

⁹⁶ UK Electronic Communication Act 2000, S.7

⁹⁷ ibid

A major disadvantage of the Act lies in the role of effectiveness in regard to the electronic signature. In the event of a dispute or denial of signature, the electronic signature's effectiveness is limited as it only stands for mere admissibility of the electronic data as evidence and it is up to the court to judge whether the electronic signature is lawful or if any weight should be placed in the electronic signatures or not.⁹⁸ Courts even have the power not to allow for electronic signatures as admissible evidence under certain circumstances.⁹⁹ This generates the idea that this Act does not fully govern the use of electronic signatures in commercial practise and could not bring any major change of the status existed prior to the introduction of the Act. Additionally, the simple and advanced definitions of signatures are too broad to be applicable for any type of signature.¹⁰⁰

3.2 Electronic Bill of Lading & Negotiability

The paper bill of lading is a negotiable instrument which regulates the change of ownership and in this context the electronic bill of lading should similarly step to the same path. Thus, the electronic bill of lading must identify the carrier, shipper and the final receiver at the destined port. However, in order to avoid any possibilities for fraud or misrepresentation when delivering the goods the identification should be accurate and verifiable. Finally, this identification must not be linked with any paper or presentation for the purpose of the delivery of goods shipped on board against that specific document.¹⁰¹ Ultimately speaking identification of the final parties is a condition needed to exist in the electronic bill of lading to be a legally valid document.¹⁰²

Furthermore, a traditional bill of lading refers to the rights and liabilities of the parties according to the terms and conditions which were negotiated. Therefore, the electronic bill of lading should operate in the same way making clear the liabilities of the parties and all the terms and conditions agreed prior to the formation of the contract. This function clearly reflects the contractual essence of the paper bill which need to be replicated in electronic format. In general terms, identification of

⁹⁸ Ibid S.2

⁹⁹ SE Blythe, 'Digital Signature Law of the United Nations, European Union, United Kingdom and United States' (2005) 11(2) Richmond Journal of Law & Technology 1-20, p14

¹⁰⁰ Ibid 7

¹⁰¹ Kelly T McGowan, 'The Dematerialisation of the Bill of Lading' (2007) 7(1) Hibernian Law Journal 68

¹⁰² ibid

the rights and liabilities of the parties is another element needed for replication. This might not be a difficult task as long as the details enlisted in the electronic bill are correct and secure.¹⁰³

Furthermore, the fast pace of the today's business world requests a universal online availability for all traders using electronic bills of lading given that this network is highly secured. Financial institutions should also gain access in this network given that they have provided financial support apart from the endorser, endorsees and carrier.¹⁰⁴ Finally, the online transactions are considered unsecure to a great extent, therefore in order to overcome this issue and promote confidence in this type of transactions it must be proven that this network is adequate to protect parties from innocent mistakes in regard to online fraud.¹⁰⁵ Thus, in broad terms, openness and availability along with security against fraud are essential characteristics required in electronic bill of lading transactions.

3.3 Electronic Bill of Lading – Receipt and Contractual function

As far as the receipt function is concerned there is no need for much debate. This function is also performed by several negotiable and non-negotiable documents. Therefore, the electronic bill of lading is available to adopt the function linked with the receipt of the goods and operate legally in order to qualify as a bill of lading in this essence.¹⁰⁶ Secondly, as mentioned earlier the bill of lading operated as either evidence of the contract or the contract itself and therefore, the electronic bill of lading must reflect all of the evidentiary roles like proof of shipment, evidence for the shipped goods' condition at that time and more. Despite the difference in opinions existed, an electronic bill of lading should be accepted as evidence in court trials regardless of the jurisdiction.¹⁰⁷

¹⁰³ Ibid 28 p37

¹⁰⁴ Ibid 77

¹⁰⁵ Georgios Zekos, 'EDI and the contractual Role of Computerised (Electronic) Bills of Lading' [1999] 41(6) Managerial Law 1-34 p 14

¹⁰⁶ Ibid 77 p 75

¹⁰⁷ Ramberg, J, 'The implications of new transport technologies' (1980) 15 European Transport Law 119

4. Electronic bill of lading and its impediments for its legal recognition

Legal complications in regard to the adoption of an electronic bill of lading stem from the different legal principles vested in the bill of lading such as negotiability, contract, bailment, assignment and tort.¹⁰⁸ It is essential to discuss about electronic bill of lading and its nature as a document in electronic format and to explore equivalences between the paper bill of lading and the electronic one.¹⁰⁹ Moreover, the applications of a bill of lading are numerous. It is a contract document, a document of title, a document of evidence of affreightment and finally a document of record of rights. This complex nature is a reason which impedes the replication of the paper bill of lading into an electronic one.¹¹⁰ This scenario can also be reflected in the Hamburg Rules 1978 as to what a traditional paper bill is along with its characteristics.¹¹¹

4.1 Negotiability

The negotiability of a bill of lading can be carried out by mere endorsement to a third person, both in full and in blank¹¹². It is a function of the physical possession of the bill of lading where the goods in transit are inaccessible and physical possession is described as *“the cornerstone to transmissibility of rights and compelling delivery by the carrier of the named goods”*.¹¹³ There are two important characteristics lying in negotiable instruments. Firstly, all the rights and liabilities enlisted in a negotiable document remain intact until delivery of the goods takes place. However these rights might be transferred to a third party by mere endorsement in ink or by in blank through delivery to the third party.¹¹⁴ Secondly, the holder of a negotiable instrument for value in good faith is entitled to full title as opposed to all other members involved in the transaction even in cases

¹⁰⁸ C Sun and M Roark, 'Summary of Electronic Bill of Lading Legal Issues in Trucking' (2010) 3 ASCE Journal of Legal Affairs and Dispute Resolution in Engineering & Construction 1-22 p 19

¹⁰⁹ C. Pejovic, Documents of Title in Carriage of Goods by Sea under English Law: Legal Nature and Possible Future Directions, (2004) PPP god. 158(43) ,43-83 p55

¹¹⁰ Ibid 84

¹¹¹ JY Gliniecki and CG Ogada, 'The legal acceptance of electronic documents, writing, signatures, and notices in international transportation convention: a challenge in the age of global electronic commerce, (1992) 13(1) Nw J Int'l L & Bus, 140

¹¹² UNCTAD, Bill of Lading: Report by Secretariat of UNCTAD (United Nations Publication 1971)

¹¹³ Ibid 22 p264

¹¹⁴ DV Cowen, Cowen on the Law of Negotiable Instruments in South Africa (5th edn Juta and Co 1985) p245

where the transferee showed defect in his title or had no title at all.¹¹⁵ In this sense, bill of lading's negotiability function promotes the marketability of goods in transit while they are still en route.¹¹⁶ This type of elasticity assists the documentary sale of goods in transit.¹¹⁷

To the contrary, in the case of electronic bill of lading, the bill is intangible and the lack of physical existence secure those rights only in electronic form. This form of the bill impedes the negotiability function adaptability due to the fact that it cannot be presented at the time of delivery in paperless format, which is detached from the originality of the document and its authentication through the signature.¹¹⁸ Thus, there are inconsistencies in the attempt to accept the electronic bill of lading as a replacement of a paper bill of lading. Nonetheless, it is argued that is the details of information and not the document itself which is crucial for the functioning of the electronic bill of lading and can be communicated even in digital form subject to its security.¹¹⁹ However, it is evident that the negotiability function of the electronic bill of lading cannot be secured until the point is reached where confidence in the medium is accomplished.¹²⁰ The framework of this type of confidence does not probably lie in the legal solution scheme but in the financial business and it is the banks' choice to define acceptable security in the medium of electronic document as collateral.¹²¹ From the lender's point of view, the main problem is the ability to control the goods vested in the document of title, dispose of them upon default and then repay the loan. However, non-negotiable transport receipts like sea waybills do not entitle the holder the ability to dispose of the goods and may not be regarded as collateral due to the fact that they do not represent the goods. Physical transfer of the document of title produces a direct link within the creditor's rights and his collateral. Therefore, it is a serious question of how this link is preserved in an electronic transaction environment.¹²²

¹¹⁵ Ibid 52 p277

¹¹⁶ Richard Schaffer, Beverly Earle and Filiberto Agusti, *International Business Law and its Environment* (5th edn International Thomson Publishing 2002) p 151-153

¹¹⁷ Ibid 30

¹¹⁸ GF Chandler III, 'Maritime Electronic Commerce for the 21st Century'. Paper presented to the CMI panel on EDI, Antwerp, Belgium, 10 June 1997

¹¹⁹ E T Laryea, 'Paperless Shipping Documents: An Australian Perspective' (2000) 25 *Tulane Maritime Law Journal* 1, 255-265

¹²⁰ Miran Murucus, 'A Gateway to Electronic Transport Documentation in International Trade: The Rotterdam Rules in Perspective' (ML Dissertation, Lund University 2012) p 40

¹²¹ Marek Dubovec, 'The problems and possibilities for using electronic bills of lading as collateral' [2006] 23(2) *Arizona Journal of International & Comparative Law* 437-466

¹²² Ibid p459-460

4.2 The evidentiary role of the Bill of Lading

The requirement of the traditional paper bill of lading is highly correlated with its evidentiary value.¹²³ The rapid technological advancements have motivated the law in different jurisdictions to recognise the notion of electronic documents as evidence.¹²⁴ In the UK, UK Companies Act 2006¹²⁵ was introduced and the Registrar is entitled to frame rules for admissibility of evidence along with electronic evidence and the Secretary of State is entitled to frame the rules for admissibility of evidence along with admissibility of electronic communication.¹²⁶

As far as common law jurisdictions are concerned, they seem to have adopted a similar approach and documents along with computer records fall under the scope of hearsay¹²⁷. There are exceptions lying in the principle of *lex fori* (i.e. hearsay) and similar treatment is available in electronic records to decide upon their evidentiary value on the determination of its status as a document.¹²⁸ In UK law the admissibility of electronic documents as evidence is legally governed by Civil Evidence Act (1995)¹²⁹. This section is broadly related with the use of computer records including the information and it is not quite straightforward in regard to the security of the data existing in the computers and the definition of the word document in the ordinary course of business.¹³⁰

In the Australian jurisdiction, Evidence Act 1955¹³¹, entitles the litigants to show evidence supporting their case in electronic format. According to Queensland's Evidence Act 1977, admissibility of electronic records is permitted subject to the requirements enlisted in the Act.¹³² As far as the US jurisdiction is concerned, according to the Federal Rules of Evidence (2011) an exclusion is applied, in the scope of the rules linked to the Electronic record information.¹³³

¹²³ HA Giermann, *The Evidentiary Value of Bill of Lading and Estoppel* (1st edition, Lit Verlag Münster 2004) p101

¹²⁴ *Derby & Co Ltd & Ors v Weldon & Ors* (No. 9) (1991) 2 All E.R. 901

¹²⁵ UK Companies Act 2006

¹²⁶ *Ibid* Section 71

¹²⁷ JA Riordan (ed), *'Evidence', The Laws of Australia*, (1st edn, Butterworths 1999) p 77

¹²⁸ *Ibid* 81 p18

¹²⁹ Civil Evidence Act (UK) [1995] S.13

¹³⁰ Adrian Keane, *The Modern Law of Evidence* (1st edn, Oxford University Press 2008) p 253

¹³¹ Evidence Act 1955 S.48

¹³² Queensland Evidence Act 1977, S.95

¹³³ Federal Rules of Evidence (2011) Rules 101 & 1001

Evidently, the US jurisdiction is supporting to a greater extent than any other judicial system in Common Law States the admissibility of electronic and computer based evidence.

4.3 The signature issue and document authentication

Another requirement for the lawful admissibility of a document between the contracting parties is that it must be authenticated by the parties through signing it. Signatures reflect the acceptance of the contractual terms of the parties, and for any disagreement between the parties, the proper document provides the roots for adjudication in a court of law.¹³⁴ Signature is a significant mark of a person or even his name, "*written by his hand put at the end of a letter, a contract or any document whatever in order to certify it, to confirm it, to make it valid*".¹³⁵ In a similar manner, the UN convention for International bills of exchange and international Promissory notes, signature is defined as '*means hand written signatures, its fax or an equivalent authentication affected by other means*'.¹³⁶ Moreover, signatures are required to be made in ink.¹³⁷ Moreover, authentication of a document through an inked signature of a faxed document also raises serious question in courts of law. It is considered that a fax cannot satisfy the requirements of both signature and writing.¹³⁸ In the case of *NM Superannuation Pty Ltd v Baker and Others*¹³⁹ faxed signatures deemed to be insufficient and were disregarded as representation of the original document. In this case the court held that in cases where a signature is sent by fax machine is not equivalent to the original signature and in cases where signatures are required it may be proven to be insufficient. However, the discussion and controversies in regard to the acceptability of electronic signature is still pending.

In contrast with the traditional documents, these kind of transactions require the transfer of documents with the shipment in the form of a commercial invoice or proof of the quality and quantity of the cargo and therefore authentication is often highlighted.¹⁴⁰ In negotiating the terms of the

¹³⁴ Zheng Qin, Introduction to E-commerce (1st edn, Springer 2009) p 174.

¹³⁵ Authentication of Trade Documents by means other than Signature, Recommendation adopted by the Working Party on Facilitation of International Trade Procedures, Geneva, March 1979

¹³⁶ United Nations Convention on International Bill of Exchange and International Promissory Notes 1988, article 5

¹³⁷ *Electronic Rentals Pty Ltd v Anderson* (1971) 124 CLR 27

¹³⁸ *Brinkibon Ltd v Stahag Stahl und Stahlwarenhanelgesellschaft* [1982] 2 WLR 264

¹³⁹ *NM Superannuation Pty Ltd v Baker and Others* [1992] 7 ACSR 105

¹⁴⁰ *ibid*

carriage of goods by sea the bill of lading is a documents that enlists the rights and liabilities of the contracting parties. Furthermore, this requirement is still needed. Hamburg Rules addressed the signature issue requirement as it is stated that *'in writing, 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 bill of lading is issued'*¹⁴¹. However, this set of laws are not globally accepted. Nonetheless, this signifies that the goods described in the related document have been boarded on ship and the condition to which they were loaded are enlisted and it is now up to the carrier's responsibility to deliver the goods in the condition that was included in the bill of lading.¹⁴²

The international community tried to replace the status of inked signature with electronic signatures according to the requirements of the commercial world. The definition of electronic signature is still an ongoing debate as it may be concluded in the form of signs, digital images, biometric scans or even finger prints.¹⁴³ UNCITRAL Model Law in regard to Electronic Commerce can be referenced when it comes to the definition of electronic signatures but it is still not an internationally accepted law. In this effort it was attempted to provide a set of rules governing electronic commerce but more specifically it attempted to reach consensus on the legitimacy of electronic documents and the authentication through electronic signature subject to a technology-neutral approach focusing on functional equivalency.¹⁴⁴ Therefore the main focus of the project was to equate the legal functions of ink signatures in electronic record. According to UNCITRAL Model Law, an electronic signature is *"data in electronic form in, affixed to or logically associated with, a data message, which may be used to identify the signatory in relation to the data message and to indicate the signatory's approval of the information contained in the data message"*¹⁴⁵. Moreover, any essential requirement to make the electronic signature acceptable is stated in Articles 6 & 7 where the attempt to provide security of the records is verified.¹⁴⁶

¹⁴¹ Hamburg Rules Article 14(3)

¹⁴² *ibid*

¹⁴³ I Carr, 'UNCITRAL and Electronic Signatures: A Light Touch at Harmonisation' (2003) 1(1) *Hertfordshire Law Journal*, 141-159

¹⁴⁴ M Broderick, VR Gibson and P Tarasewich, 'Electronic Signatures: They're legal, now what?' (2001) 11(5) *Internet Research: Electronic Networking Applications and Policy*, 423-434, p430

¹⁴⁵ UNCITRAL Model Law on Electronic Commerce, 2000, article 2

¹⁴⁶ *Ibid* Articles 6 & 7

As far as domestic law and regional law (European Union) is concerned there are serious attempts aiming at the acknowledgement of electronic signatures in the commercial business. EU directives are the legal instruments to uniform the law within the member States. In the preamble of Electronic Signature Directives it is stated that "*the purpose of this Directive is to facilitate the use of electronic signatures and to contribute to their legal recognition*".¹⁴⁷ The Directive aims at the attempt for the legal recognition of electronic signatures along with advanced electronic signatures while adopting a technologically-neutral approach as mentioned earlier.¹⁴⁸ However, the adoption by member state remains slow under the voluntary adoption clause and an explanation as to why there is non-compliance within the law and the appropriate State is not possible at the national level.¹⁴⁹ In the UK, Electronic Communications Act 2000 has adopted this EU Directive solely to the extent of the Electronic signature and has promoted the acceptability of electronic signature with the same functionalities of traditional signatures.¹⁵⁰ Sea Carriage Document Act 1996, in the UK which was also subsequently adopted by Australia, has accepted the electronic signature for authentication, coming in contrast with the traditional legal requirements. The Act has provided some sort of elasticity to the term "signed" in order to make possible to include other types of authentication which can legally constitute signing under this law as this Act recognises electronic documents as legally admissible documents.¹⁵¹

In the US jurisdiction, the legal framework is provided in regard to electronic signatures through the adoption of the Model Law in Electronic Transactions Act 1999¹⁵² and E-SIGN Act 2000¹⁵³. The first Act was implemented as a result of the National Conference of Commissioners of Uniform State Laws in 1999¹⁵⁴ and the second Act was a federal Act which came into force to substitute State Law¹⁵⁵. The E-SIGN Act 2000 boosts the legal status of electronic signatures, contracts and records by making clear that they should not be denied enforceability solely on the basis that they are in an

¹⁴⁷ Official Journal of the European Communities, (19/01/2000), L 13/12, article 1.

¹⁴⁸ W Ford and MS Baum, *Secure Electronic Commerce: Building the Infrastructure for Digital Signatures and Encryption* (2nd edn, Prentice-Hall 2000)

¹⁴⁹ *Ibid* 77 p82

¹⁵⁰ Electronic Communications Act 2000, S7(1) & S7(2)

¹⁵¹ Sea Carriage Documents Act 1996 (Queensland, Australia), S.4(4)

¹⁵² Uniform Electronic Transactions Act (1999)

¹⁵³ Electronic Signatures in Global and National Commerce Act (2000)

¹⁵⁴ W Kuechler and FH Grupe 'Digital Signatures: A Business View' (2003) 10(1) *Information Systems Management*, 19-28, p26

¹⁵⁵ J Bell, R Gomez and Hodge, 'Electronic Signatures Regulation' (2001) 17(6) *Computer Law & Security Report*, 399-402

electronic form.¹⁵⁶ However, it is not forcing the legal status of electronic signatures and does not state liabilities in case of non-enforceability. As far as the latter is concerned, the act makes only suggestions on this matter and therefore it can be deemed as not very powerful law.¹⁵⁷ Furthermore, in regard to the security of data different suggestions have been made like the use of PIN codes, public key cryptography, digital signatures, encryption methods and scanning the iris for authentication.¹⁵⁸ Finally, it is noticeable that the Act does not refer to the role of electronic signatures in detail and seems general in nature.

The American bar Association has recommended a guideline for principles for the recognition of digital signatures nationwide.¹⁵⁹ The International Chamber of Commerce has provided a definition for electronic commerce: *“to draw together the key elements involved in electronic commerce, to serve as an indicator of terms and an exposition of the general background to the issue.”*¹⁶⁰

The deduction can be very clear as it is obvious that the law still remains behind in the requirements of the commercial business in international, regional and national levels in regard to the substitute and acceptance of an electronic signature functioning equivalently to the traditional one. Acceptance of an electronic bill of lading still remains a hurdle unless the national and international jurisdictions come in line and promote uniformly accepted rules about electronic signatures and courts are not proven reluctant to recognise digitally signed documents and contracts in evidence.

4.4 Bill of Lading as bailment

It is obvious that the bill of lading has changed from a bailment contract to its current form and its major function lies in its status as a contract of bailment between the carrier and the shipper.¹⁶¹ The bill of lading as a document of title will state the quantity and conditions of the shipped goods. The carrier, as a bailee, is responsible for transferring these goods to the holder of the bill of lading

¹⁵⁶ *ibid*

¹⁵⁷ *ibid*

¹⁵⁸ Downing and R McKean, 'Digital signatures: addressing the legal issues' [2001] 4 Business Credit, p 44–49

¹⁵⁹ American Bar Association, 'Digital Signature Guidelines: Legal Infrastructure for Certification Authorities and Secure Electronic Commerce' (1996)

¹⁶⁰ International chamber of commerce, 'General Usage for International Digitally Ensured Commerce' (18 November 1997)<<https://cryptome.org/jya/guidec2.htm>> accessed 9 August 2019

¹⁶¹ *Ibid* 112

without any breach in condition of the status or quantity of the goods.¹⁶² In Hague-Visby Rules¹⁶³ the conditions of the function of bailment are shown in detail and according to those, a bailee is responsible for indemnifying the bailer for any loss or damage to the goods he shall receive.¹⁶⁴ In order for this function to be satisfied, a negotiable bill of lading mentions three crucial statements which work as catalysts among disputes between shipper, consignee and other parties involved in the transaction. These are:¹⁶⁵

1. The Statement of accuracy of loading tally of the goods shipped
2. The Statement towards clean appearance of goods shipped in regard to the conditions
3. Correctness of date shipping, the time of journey and the date of arrival at the port of destination

However there are scenarios where transshipment are made without the prior consent of the shipper. In cases where such consent lacks, the holder of the bill has a legal claim for the loss of any goods based on the negligence of the bailee who appointed his to task to a third party.¹⁶⁶

The reason for stating the function of bailment as a legal impediment for the establishment of the electronic bills of lading lies in the fact that only a negotiable instrument can satisfy the criteria of the bailment function and therefore the electronic bill of lading lacking the ability of a negotiable instrument would not enable its holder to seek damages in a similar scenario.

4.5 The Contractual framework of the Electronic Bill of Lading

There are not many written contracts in regard to the transportation of goods and therefore it is quite common to include the terms and conditions in the document of title enlisting other details linked with the shipped goods.¹⁶⁷ A bill of Lading in the commercial world is regarded as the mere receipt of the contract and not the contract itself and in the event of any dispute the terms of charter are superior to the bill of lading.¹⁶⁸ Thus, the bill of lading is regarded as being limited to the

¹⁶² *ibid*

¹⁶³ Hague-Visby Rules (1968) Article IV

¹⁶⁴ *Ibid* Rule 2

¹⁶⁵ *Ibid* 136 p23

¹⁶⁶ Simon Baughen, *Shipping Law* (3rd edn Routledge 2004) p 55.

¹⁶⁷ TG Carver, FMB Reynolds, GH Treitel (eds) *Carver on Bills of Lading*, (1ST edn, Sweet & Maxwell 2011) p68-70

¹⁶⁸ *Ibid* 6 p343

evidential purposes for the actual terms and conditions in the contract, but it is a universally accepted rule to transfer the goods after the presentation of the original bill of lading has taken place.¹⁶⁹ Additionally, the actual contract connecting the shipper and carrier is formed on the basis of an offer and acceptance which is actually made before the issuance of the bill of lading¹⁷⁰.

In English Law as discussed earlier the three different functions of the paper Bill of Lading should be replicated in electronic form to legally establish the electronic bill of lading. Two of these roles are correlated with the contractual roles (receipt and evidence). These contractual roles are formed based on the relationship of the contracting parties. If only the original shipper and the carrier are involved in the transaction, the bill of lading amounts to mere evidence of the contract. On the other hand, if the parties involved are the carrier and subsequent endorsee, the bill of lading is the contract itself.¹⁷¹ According to Carriage of Goods by Sea Act 1992, the contract of carriage is "*the contract contained in or evidence by the bill of lading*"¹⁷². In Addition, the bill of lading has also been defined as a contract, a receipt and a document of title.¹⁷³ Both of these views can be shown in leading cases in the English jurisdiction. The case of *Ardennes*¹⁷⁴ hold that in a case of a diversion of a route, even if established from verbal evidence, this type of evidence is admissible in a court of law overcoming the bill's terms and conditions as long as the bill is nothing more than evidence of the contract. In this case, verbal evidence was admissible and decided the case. To the contrary, and with much less support received, in the case of *Leduc & co v Ward*¹⁷⁵, in a case where the contracting parties are the carrier and endorsee, the bill constitutes the contract itself and the status, terms and conditions of the bill of lading will overrule any change in the terms of the contract. Therefore, admissibility of verbal evidence is not permissible making the conditions stated in the bill conclusive.¹⁷⁶

¹⁶⁹ *The Rafaela S*, [2005] 1 Lloyd's Rep 347

¹⁷⁰ W Tetley, 'The Hamburg Rules – Good, Bad and Indifferent' (The Speakers Papers for the Bill of Lading Conventions Conference, Lloyd's of London Press 1978) 2

¹⁷¹ B-M Lee and J-H Yang, 'The Bill Of Lading Functioning as Contract of Carriage in the English Law' (2006) 10(2) Journal of Korea Trade, 169–186

¹⁷² Carriage of Goods by Sea Act 1992 S.5(1)

¹⁷³ *Ibid* 145

¹⁷⁴ *Ibid* 19

¹⁷⁵ *Leduc & Co v Ward* (1888) 20 QBD 475

¹⁷⁶ *ibid*

The reason for discussing this issue is to show that in paper bill of lading the bill is evidence of the contract although in case of transfer of rights through endorsement it creates questions as to the contract formation.

As far as the electronic bill of lading is concerned, there is no rule governing contract formation through Electronic Data Interchange (EDI).¹⁷⁷ In a common contract, there are rules governing acceptance, offer and consideration. One aspect of confusion in the conclusion of a contract lies in the completion of acceptance in Electronic Data Interchange in a case where another and more recent formed contract is raised between the new holder and the carrier. According to the mailbox rule, acceptance is established as soon as it out of control of the acceptor or by placing the acceptance letter inside the mailbox.¹⁷⁸ Where no such rule exists, the legal question is focused onto whether the completion of the acceptance is considered as a negotiable document. The application of the rule can be found in the case of *Entores v Far East Corporation*¹⁷⁹ where it was decided that the mailbox rule is not applicable to EDI contracts due to the fact of the nature of communication-acceptance which was characterised as instantaneous. Alternatively, EDI contracts will be formed based on the actual communication of the offer.¹⁸⁰ However, this case cannot be regarded as universally applicable case law due to the fact that there is also a chance of not checking the mailbox and therefore under instant delivery of an email, this issue can also been raised.¹⁸¹ Moreover, lack of case law in other jurisdictions on the same matter also limits its utility.

Evidently, in English Jurisdiction a bill of lading as a dual contractual function based on the parties involved. Thus, in Common Law countries the electronic bill of lading should be able to exhibit these functions. Finally, the question linked to the securing of liability in a case where a message was failed to send due to a system error is still unaddressed and required debate. Lack of legislation and case law is obvious that have not dealt with this issue in depth and uncertainty is what is being generated from its current status.¹⁸²

¹⁷⁷ Ibid 9 p 75

¹⁷⁸ S Harvey and J Newman, 'Contracts by Electronic Mail: Some Issues Explored' (1998) 3 Computer Law and Security Review 1-19

¹⁷⁹ *Entores v Far East Corporation*, (1955) 2 QB 327

¹⁸⁰ C Reed, 'EDI - Contractual and liability issues' (1989) 6(2) Computer Law and Practice 81-112

¹⁸¹ *Brinkibon Ltd v StahagStahl GmbH* (1983) 2 AC 34

¹⁸² Ibid 10 p177

4.6 Conclusive note of the reasons impeding legal recognition of the Electronic Bill of lading

There are obvious reasons which are impeding the legal establishment and development of the electronic bill of lading. These obstacle are mostly legal in nature preventing the functional equivalence between paper and electronic bill of lading. The courts have not yet recognised electronic bill of lading in legal practise as a valid document and therefore its admissibility as evidence or proof for another contract is hindered. The lack of a signature in ink doubts the validity in numerous jurisdictions and legislative intervention is crucial in the effort to make it a valid document. In addition, paper bill of lading's ability to be a document of bailment, its value as a contract or mere evidence of the contract along with its negotiability feature are all issues which still require legislative and judicial intervention and acceptance in regard to its adoption in electronic form. This attempt however shall take place in a universal manner promoting the same laws globally. In this manner, the biggest responsibility can be traced in the legislative systems of countries correlated to international trade to a certain extent. Without the creations of clear legislative pieces of work both internationally and domestically, there is no room for electronic bills of lading.

Even though the courts can play a role in the support of electronic bill of lading's legal nature through their interpretation of the apparent legislations, the constraints of each area of jurisdiction pose a limitation towards their contribution. Similarly, business and international attempts have proven ineffective as there was no legal support from the relevant States. To conclude, there is a genuine demand to ensure that the technological aspects can be incorporated into the legal framework. Apart from that, there is also a genuine need for traders to agree on one common reality which will be the root for the establishment of the electronic environment.

5. International Projects and business initiatives to promote the use of Electronic bills of Lading

5.1 SeaDocs System

SeaDocs System was a joint project between Chase Manhattan Bank and International Association of independent Tanker Owners who managed SeaDocs Registry Ltd, a London-based corporation supporting the transfer of electronic records with the negotiability function. The initial goal of the project was to promote the growing international oil trade, mentioning that huge investments were insecure due to the slow transportation of the paper bill of lading. Moreover, in large cases of cargo oil transportation, companies were forced to pay extra fees to the financial institutions as long as companies had to receive shipments on the authority of a letter of indemnity.¹⁸³

SeaDocs & Negotiability

The project attempted to secure the shippers and carriers, from any type of fraud in the paper based transactions which were made through alteration and tampering.¹⁸⁴ Although promoting the use of electronic bill of lading a paper bill of lading should also be issued and be deposited in the registry controlled by the joint venture as an agent of the contracting parties. The parties were assigned with unique PIN codes in regard to their identification and transactions.¹⁸⁵ It is evident that this kind of effort did not have an absolute electronic nature. The electronic form was generated from the central registry, in an effort to ensure the security of the electronic data through the use of test keys.¹⁸⁶ A party who had registered its documents in the central registry, supported by the guarantee of Chase Manhattan Bank, is entitled after paying a fee, to transfer his rights to a third party and SeaDocs Ltd was the instrument responsible for updating the status of the rights which

¹⁸³ B Kozolchyk, 'The Paperless Letter of Credit and Related Documents of Title' (1992) 55(3) Law & Contemporary Problems, 40-101, p89

¹⁸⁴ GF Chandler III, 'The Electronic Transmission of Bills of Lading' [1989] 20 Journal of Maritime Law & Commerce p 581

¹⁸⁵ *ibid*

¹⁸⁶ *ibid*

were conveyed. A shipper can issue an amount of the code to the purchaser and all the relevant information in relation to this change would automatically sent to SeaDocs Ltd via Electronic Data Interchange. Nonetheless, SeaDocs would only update the status after the request from the holder of the bill of lading along with the appropriate PIN code. After that process took place, the new holder of the new electronic bill of lading provided by the central registry, is eligible for accepting and collecting the goods at the destined port.¹⁸⁷

Although this attempt managed to provide an operational framework for a negotiable electronic bill of lading, the project was eventually shut down after almost 2 years of operation. The project did not attract the amount of traders it was meant to attract and all legal and functional authorities were deemed to support this project only if it was given that it would operate in a global manner. After Manhattan Chase Bank made its exit from the project, it became clear that the project had failed to achieve its main goals.

SeaDocs and function of Receipt

There is no much need for debate in this section. Receipt and evidentiary functions are able to be replicated as mentioned earlier in the dissertation, however in the SeaDocs project the traditional paper bill of lading is considered mandatory. The PIN code issued message constituted admissible evidence of the transaction. Moreover, the use of PIN code in part of the receiver constituted valid evidence of its acknowledgement, establishing this function as well. The software used in SeaDocs had the ability to lead to alerts prior to any change in the data to the original owner and upon verification code, authentication could take place. Therefore, the system generates log for the activity in order to be checked later for verification purposes too.¹⁸⁸

Identification of parties and transfer of title

Identification of parties was based on an electronic key and not on the traditional paper bill of lading. Thus, the physical presence was needless and a party who was aware of the electronic

¹⁸⁷ *ibid*

¹⁸⁸ *Ibid* 94

information was legally entitled to acquire possession of the goods.¹⁸⁹ As far as the transfer of title is concerned, paper bill of lading was not meant to be presented at the destined port at the time of receipt and therefore, this feature had to be embodied in the electronic transaction data of the registry.¹⁹⁰ However both of the issues were never completely tested due to the fact that the project had to shut down before all these legal issues could be explored in depth.¹⁹¹

Reasons for its failure

As far as the reasons for its failure are concerned, these can be divided into two different categories. The first category is legal in nature whereas the second is technical.

Legal Based problems

Firstly, this business project never had a legal framework on which it was operating and tried to be constituted in. Moreover, it had never received any support from a court of law. International and Domestic legislation never intended to govern its functions making the business community quite reluctant when using the SeaDocs System due to the fact that in a case of legal dispute unpredictability and uncertainty is what is being generated and the idea of a loss was very possible.¹⁹² Moreover, the rights and liabilities of the contracting parties were not clearly identified and improvements in that sections were required beyond the interpretations made by the registry or bank.¹⁹³

Secondly, the basic functions in regard to the contractual and evidentiary value of the electronic bill of lading was never completely tested. The party receiving the transfer of goods at the port might be an agent holding that key on behalf of his principle or even a wrong party. Thus, the sanctity of

¹⁸⁹Ibid 186 p 582

¹⁹⁰ Ibid 44 p187

¹⁹¹ Ibid 164

¹⁹² ibid

¹⁹³ B Kozolchyk, 'Evolution and present state of the ocean bill of lading from a banking law perspective' [1992] 23 JMLC 161-245, p179

the bill of lading was in jeopardy and if tested it could have brought new sort of legal proceeding at that time period.¹⁹⁴

Technical based problems

Firstly, the project suggested the complete technological replacement of the paper bill of lading while it promoted an intermediary solution of using an electronic bill of lading while also involving the paper bill in the transaction. Even though an absolute shift to paperless trade was not deemed possible to the managers of the project, it also did not bring a positive outcome in regard to the immediate situation.¹⁹⁵

Secondly, another factor contributing in its failure are the increased costs of the financial transactions imposed by the registry. For every transaction the registry imposed a fee almost half a thousand GBP more than the average cost.¹⁹⁶ It is pretty clear that one of the main aims of shifting to paperless transactions was the decreased costs it would generate. Apparently, the financial support needed for the system was high and the fees for using it went above the average.

Thirdly, the monopoly power steaming from this joint venture of two very powerful corporations/institutions generated a sense of repulsion for traders and instruments who were in competition or were against this idea. The rights of expulsion along with the decisions of users' breach was the only jurisdiction which governed the SeaDocs project and they were entitled to change the procedure without any sign of notice.¹⁹⁷ The monopoly nature of the project generated further repulsion and many organizations and private business bodies outside the project's framework did not provide their support.¹⁹⁸

¹⁹⁴ Ibid 102 p 101

¹⁹⁵ RP Merges and GH Reynolds, 'Toward a Computerised System for Negotiating Ocean Bills of Lading' (1986) 6(23) Journal of Law and Commerce 23-45, p37

¹⁹⁶ ibid

¹⁹⁷ P Todd, in C Reed, I Walden and L Edgar (eds) Cross-Border Electronic Banking (1st edn, Informa Law 1995) p 80-83

¹⁹⁸ K Love, 'SeaDocs: The Lessons Learned' (1992) 53(2) Oil and Gas Law Taxation Review 35-59

Fourthly, Data security concerns were raised due to the fact that recording of all transactions was being stored in the central registry and they were under its control and its misuse impeded the development of the project.

Finally, the last problem was attracting the banks in order to finance the project. It was the project's goal to include financial institutions as temporary holders of the bill of lading in case of their financing and pledge. However, the banks were not attracted from the terms enlisted in the project. At the early stage of the project, banks were not entitled to inspect the original bill of lading located in the central registry. Later on, banks were granted the permission for access to it, although limited. Moreover, a liability, totalling 150% of the market value of the goods was provided to the banks but still the terms were not satisfactory to a great extent in part of the financial institutions.¹⁹⁹

5.2 CMI Rules (Comite Maritime International)

The various mediaeval maritime codes were the reason the CMI was established in order to promote a universal codification of the maritime principles. Through the use of electronic data interchange, in 1990, the institution attempted to promote and establish the use of electronic bills of lading by introducing the CMI Rules for Electronic Bills of Lading.²⁰⁰ Rule 1, provided the scope of the Rules and forced any member party to adopt the totality of the rules with no exception.²⁰¹ Therefore, the institution's attempt was not to alter existing laws covering the paper bill of lading (Hamburg Rules, Hague-Visby Rules). Moreover, it is not within its intentions to introduce a central computerised registry, like SeaDocs proposed. The main goal of the project was to establish a voluntary system within the maritime community where the benefits of paperless transactions would be exploited.²⁰²

There is no statutory provision, legislation or any law in general governing the CMI Rules constituting their scope as voluntary without any force of law. Therefore, according to Rule 6 *"The Contract of Carriage shall be subject to any international convention or national law which would*

¹⁹⁹ Ibid p 55-60

²⁰⁰ Issanee Kamlang, 'On the Government of Electronic Bills of Lading' (LLM - Maritime Law, thesis, University of Oslo 2008)

²⁰¹ Comite Maritime International – CMI Rules for Electronic bills of lading (1990), Rule 1

²⁰² Ibid 93 p 466-451

have been compulsorily applicable if a paper bill of lading had been issued."²⁰³ However, it may also be stated that these Rules were drafted in support of the United Nations Rules for Electronic Data Interchange, governing all the aspects of a paper bill of lading.²⁰⁴ Thus, while still remaining within the framework of the current laws in regard to paper bill of lading, the CMI Rules promoted the use of Electronic Data Interchange with the consent of the parties suggesting the United Nations Rules for Electronic Data Interchange as the original protocol. CMI managed to provide a legal framework where the paper bill of lading characteristics were substituted in its electronic counterpart. The CMI Rules aborts the requirement of the signature and written document, substituting it with electronic record transmission.²⁰⁵ Moreover, the lack of a written document does not provide a right for defence to the parties who have adopted the Rules. Finally, advanced electronic modes were acceptable when concluding a contract.

Functional equivalence and CMI Rules

CMI Rules promote functional equivalence between paper and electronic bill of lading in the following way.

Firstly, for equivalence to be successful electronic data were deemed to be as good as the writing on paper unless otherwise agreed.²⁰⁶ This agreement of the parties adopting the Rules satisfied the requirement of writing for a bill of lading.²⁰⁷

Secondly, the functions of the paper bill of lading (receipt, evidence of contract, document of title/negotiable instrument) were efficiently executed by the electronic bill of lading under the CMI Rules.²⁰⁸ Similarly to the paper bill of lading, under CMI Rules, the carrier is obliged to issue a receipt message and sent it to the shipper including all the relevant and appropriate details of the shipment and cargo and the same rules that apply to paper bill of lading also applies to the

²⁰³ Ibid 176 Rule 6

²⁰⁴ ET Laryea, 'Bolero Electronic Trade System – An Australian Perspective' (2001) 16(1) Journal of International Banking Law, 4–11

²⁰⁵ RM Goode, H Kronke, E McKendrick and J Wool, Transnational Commercial Law: International Instruments and Commentary (1st edn, Oxford University Press 2004) p 265

²⁰⁶ Ibid 176 Article 11

²⁰⁷ Ibid 94

²⁰⁸ Ibid 175

electronic one.²⁰⁹ The developers of the Rules were aware of the legal rules impeding the use of the electronic bill of lading and made clear that voluntary acceptance is necessary and constitutes an obligation for members using the CMI electronic bill of lading to accept the paper bill of lading legal framework into the electronic one making the rules enforceable in a court of law.²¹⁰

Thirdly, as far as the evidence of contract function is concerned, in the electronic message all the terms and conditions were have to be enlisted from the initial contract formed in paper according to Article 4 and 5 of the CMI Rules. The voluntary acceptance discussed earlier in regard to the electronic record constituting a written document promotes its validity.²¹¹

Finally and most importantly, the function of negotiability was granted through the introduction of the Private Key. Private Key sought to replace the failed attempt of a central registry (SeaDocs) forcing the parties to agree on the electronic protocol for reference. Therefore, the contracting parties were given a unique alphanumerical Private Key governing all of their future communication. The Private Key is *"unique to each successive Holder. It is not transferable by the Holder. The carrier and the Holder shall each maintain the security of the Private Key."*²¹²

When a change in title of the goods occurs, the holder of the key passes its rights to the other party with notification to the shipper, whose role is to act as a registry/ guarantor. Then, the shipper will have to send a confirmation message to the party with the title to legally entitle his claim to collect the goods at the destined port.²¹³ The endorsement of paper bill of lading and the confirmation message that need to be sent are meant to have the same legal effect along with the same information which is required in paper bill of lading for endorsement. These required information are enlisted in full detail in CMI Rules.²¹⁴

The traders' idea of free will engagement in paperless transactions became popular to a great extent. The whole project was operating on the agreed terms without coming in contrast or suppressing the existing laws and there were not any legal in nature conflicts that came up.

²⁰⁹ Ibid 176 Article 4(d)

²¹⁰ Ibid 10 p 175-177

²¹¹ Ibid 176 Article 4 & 5

²¹² Ibid 176 Rule 8

²¹³ ibid

²¹⁴ Ibid 176 Rule 4

Even though the CMI Rules are still operating, the project could never expand in a universal manner. The limited role of the CMI Rules can be based on numerous factors:

1. The transfer of title procedure was deemed to be extra complicated as compared to the paper bill of lading where the transfer simply takes place after negotiation and transfer of the document to the new holder. In CMI Rules, the transfer is concluded after the carrier is notified through the use of private key. Not only that, the carrier should send back a confirmation to delete the old key and generate a new one for the new holder of the document. It is pretty obvious how time costly this procedure is.²¹⁵ Delay of the transfer of the paper bill of lading was one of the main reasons the attempt to shift to paperless transactions had developed. Not solving that problem and create further time delay should not be an attractive project for traders.
2. Moreover, the responsibility placed on the carrier of the goods is unfair. The carrier under the CMI Rules is accountable for cancelling, issuing, reissuing, sending and resending the Private Key to subsequent holders. His position as a central registry have caused undue burden and possibilities for mistakes are high as mistakes can be made by the person (carrier) and not the system.²¹⁶
3. CMI Rules do not transparently identify how contractual rights and liabilities can be transferred with the endorsement of the bill. The carrier's contractual obligations may be varied and put the holder in due course in an inauspicious position and subject to unfair treatment. Furthermore, the carrier has the opportunity of the absence of prosecution in case of default²¹⁷.
4. The Hague or Hague-Visby Rules do no regard the CMI bill of lading as an original bill of lading and therefore these Rules do not govern the CMI bill of lading as it is described within the CMI Rules.
5. According to CMI Rules *'The transfer of the Right of Control and Transfer in the manner described above shall have the same effects as the transfer of such rights under a paper*

²¹⁵ Ibid 27 p53

²¹⁶ ibid

²¹⁷ Ibid 10 p175-177 & ibid 19

bill of lading".²¹⁸ This rule gave birth to the conflicts between national laws and CMI Rules as long as these laws cannot be disregarded by an agreement of parties which fall under the different national jurisdictions.²¹⁹

6. Moreover, CMI Rules never acquired the sanctity of the law as long as they were never implemented into national legislation nor even referred in any international maritime forum like the United Nations Rules for Electronic Data Interchange.²²⁰ Security concerns were therefore risen promoted by the undefined nature of parties in the absence of binding nature. Traders were reluctant to accept and adopt the CMI Rules with no solid statutory provisions.²²¹
7. Finally, the interference of the shipper in the confirmation of endorsement was regarded as breach of privity of contract. On the one hand, merchants were alarmed of this involvement as breach of their commercial information, whereas, on the other hand, the interference of the shipper in the endorsement procedure was regarded as an innovation over the current principles of law.²²²

5.3 The Bill of Lading Electronic Registry Organization (BOLERO)

The Bolero Project was supported by the European Commission. It was a joint venture of SWIFT and TT Club, established in 1998.²²³ The main goals of the project was to collect information on how paperless transactions could be achieved and more specifically how the electronic bill of lading can be introduced into the maritime business.²²⁴ The Bolero initiative,

²¹⁸ Ibid 176 Rule 7(4)(d)

²¹⁹ A N Yiannopoulos, *Ocean bill of Lading: Traditional forms, Substitutes and EDI Systems* (1st edn, Martinus Nijhoff Publishers 1995) p 38

²²⁰ Report of the Committee on the Development of Trade of the UN Economic Commission for Europe: *Implementation of ECE/FAL Recommendation No. 12, Measures to Facilitate Maritime Transport Documents Procedures*, ECE 53rd session (20 March 1996)

²²¹ ET Laryea, *Paperless Trade: Opportunities, Challenges and Solutions* (1st edn Kluwer Law International 2003) p 88

²²² J Livermore and K Euarjai, 'Electronic Bills of Lading: A Progress Report' (1997) 28 *J Mar L & Com* 55

²²³ Bolero, 'Company Overview' (*BOLERO*, 1998) <<http://www.bolero.net/home/company-overview/>> accessed 8 August 2019

²²⁴ M Ivarsson, 'World Wide Trade, a Manual Affair: A study of the current position of the electronic bill of lading' (PhD Thesis, University of Gothenburg 2012)

the latest effort to introduce electronic bills of lading was supported economically by the European Commission by funding the initiative by £1.35 million, half of its total cost of establishment.²²⁵

How Bolero operates

Bolero Operation was created, in part of the Bolero project to provide two types of services. Its official statement states that Bolero will *“provide guaranteed and secure delivery, in electronic form, of trade documentation globally based on a binding legal environment and common procedures, and to provide a platform for provision of neutral cross-industry services”*.²²⁶ Moreover, Bolero offers secured sharing of the transfer and exchange of business information through the central registry. It is responsible for confirming the information attached to the EDI message after confirming its authenticity against the database.²²⁷ However, the most important function of the Registry lies in the negotiability provided by the bill of lading in the EDI mode.

Bolero Bill of Lading (BBL) Functional Equivalence

The Bolero Bill of Lading although it may be considered as functional equivalent to a paper bill of lading, it is not covered by the statutes and conventions which govern the traditional paper bill of lading.²²⁸ This is due to the fact that the bill of lading of Bolero has a different name from the traditional bill of lading and does not fall within its scope in regard to its legal obligations. Moreover the bolero Rulebook is used to provide detailed information in regard to the parties and their roles within the system.

In order to achieve transparency and coherence Bolero conducted a survey asking stakeholders numerous questions and based on their answers a multi-lateral contract was presented where EDI form of communication is the mechanism within the Bolero legal

²²⁵ Ibid 198

²²⁶ Ibid

²²⁷ A Nilson, ‘Bolero - an innovative legal concept’ (1995) 2(6) Computer and Law 1-29, p23

²²⁸ JCT Chuah, ‘The Bolero Project – the International Chamber of Commerce’s electronic bill of lading project’ [2000] Student Law Review 30, 233–249

framework. English jurisdiction was decided to govern the Bolero project to promote uniformity within its stakeholders.²²⁹

Bolero adopted functional equality of written document and electronic information the way CMI attempted to do through the use of Private Keys generated by the registries. Bolero, however, had a wider range than the projects discussed earlier.

Bolero Bill of Lading & Negotiability – Attornment & Novation

Negotiability in a Bolero bill of lading is achieved as long as all forms of EDI communication are legally accepted through attornment and novation. In the traditional definition attornment refers to the acceptance of change of ownership by the tenant when it is sold.²³⁰ In bill of lading terms, it refers to the acceptance of change of ownership by the carrier through negotiation safeguarding the rights and liabilities of the new holder against the shipper who has the role of the bailee of the cargo as governed by the original contract between the shipper and carrier. Additionally, through attornment, the carrier is bound to transfer the possession of the goods to the subsequent holder as should have been done in the scenario where a negotiable paper bill of lading was in play.²³¹ However, the new holder's identity is subject to the production of the Key, representing the paper bill of lading, but in the Bolero bill of lading the text message issued by the carrier constitutes the bill of lading under attornment.²³²

In these rules, novation is carried out by the acceptance of the new holder to order or the consignee holder to order or by accepting any of the changes after the deadline for the refusal of the transaction, as mentioned in the bill of lading. These issues change the positions of the contracting parties in the contract and therefore it novates. A new contract will be generated²³³ between the parties between the carrier and the new holder to order or consignee.²³⁴ The

²²⁹ Unique Bolero Legal Rulebook, Rule 2.5

²³⁰ Carsten Schaal, 'The 21st Birthday of the Electronic Bill of Lading: With Age Comes Maturity' (*INTER-LAWYER*, 2003) <<http://www.inter-lawyer.com/lex-e-scripta/articles/electronic-bills-of-lading-4.htm>> accessed 14 August 2019

²³¹ Mallon and A Tomlinson, 'Bolero: electronic 'bills of lading' and electronic contracts of sale' [1998] *International Trade Law Quarterly* 5, 235-266

²³² *Ibid* 205

²³³ M Clarke, 'A Black Letter Lawyer Looks at Bolero' [1999] *LMCLQ* 69, p 365

²³⁴ *Ibid* 179

parties are eligible to stick to the original terms enlisted in the EDI message, or they may change the terms under common agreement and incorporate new ones in the Bolero bill of lading. Security of information is maintained as long as the Core Messaging Platform as a third party has the role of the carrier's agent.²³⁵ Additionally, in this manner, singularity of the claim is achieved creating only one potential prospective holder at the destined port to collect the goods.

Privity of Contract

The contractual transfer of rights and obligations through attornment and novation also makes reference to the Privity of Contract Doctrine. The question in this issue is to which extent rights and liabilities can be transferred to a third party if the contract is concluded by an electronic bill of lading or in other words does the electronic bill of lading has the same legal status as paper bill of lading as an exception to the Privity of Contract Doctrine.²³⁶

As far as the Doctrine is concerned it simply states that only the parties to a contract can have rights and liabilities under the scope of it.²³⁷ Thus, contracts for the profit of a third party are not recognised in English Law. On the other hand in bill of lading terms, the privity rule would not permit the consignee to gain any rights under a contract evidenced by a bill of lading that has been formed between the carrier and consignor.²³⁸

In this way, the UK bills of Lading Act 1855 offered an exception to this rule by stating that *"every consignee of goods named in a bill of lading, and every endorsee of a bill of lading, to whom the property in the goods therein mentioned shall pass upon or by reason of such consignment or endorsement, shall have transferred to and vested in him all rights of suit, and be subject to the same liabilities in respect of such goods as if the contract contained in the bill of lading had been made with himself"*.²³⁹

²³⁵ R Caplehorn, 'Bolero.Net – The Global Electronic Commerce Solution for International Trade (1999) 14(10) Butterworths Journal of International Banking and Financial Law, 423

²³⁶ Ibid 205

²³⁷ Ibid

²³⁸ Ibid 231

²³⁹ UK Bills of Lading Act 1855, S.1

In a more updated form the exception in regard to the Privity of Contract is listed in Carriage of Goods by Sea Act 1992 in an amended version. It states that "*all rights of suit and all liabilities are vested in that person, that can show bona fide possession of the bill of lading or that has either taken delivery of the goods from the carrier, made demand for their delivery from the carrier, or made a claim against the carrier in respect of them, as if he had been a party to that contract*".²⁴⁰

These laws always enabled third parties to sue the carrier subject to the terms of the original contract. However, today, the issue can amount to a problem where the updated form of an electronic bill of lading is treated as an equivalent to the paper bill of lading. In this case, these conditions along the exception rule would not apply as long as they only make reference to bills of lading.²⁴¹ COGSA 1992 recognizes electronic bills of lading in general terms, but the apparent regulations to include them in the Act have not yet been formed.²⁴² Additionally, the Contracts (Rights of Third Parties) Act 1999 states and confers "*No rights on a third party in the case of a contract of carriage of goods by sea.*"²⁴³ Therefore, in a contract evidenced by an electronic bill of lading a third party would have no rights against the carrier.

Bolero, in the attempt to overcome this legal issue the notion of novation is used. The transferee obtains his rights and obligations through an electronic message sent by the Title Registry in a different contractual relationship with the carrier. This is achieved through the concept of novation. As long as this 'different' contract with the carrier applies directly to the new holder, there is no room for discussion as there is no need at all to overcome the issue of Privity of Contract. Thus, the transferee of a Bolero Bill of Lading has the same rights and obligations as to a third party in a paper bill of lading.²⁴⁴

²⁴⁰ Carriage of Goods by Sea Act 1992, S.2(1) & S.3(1)

²⁴¹ Ibid 208 p378

²⁴² Ibid 205

²⁴³ Contracts (Rights of Third Parties) Act (1999), S.6

²⁴⁴ Ibid 205

Core Messaging Platform & Title Registry

Bolero provides for a central registry which is based on the Core Messaging Platform and the Title registry. As long as the Core Messaging Platform is concerned, it is the mechanism used by traders to communicate with each other and in the Title Registry a collective database is secured enlisting all transactions between Bolero bill of lading holders and subsequent changes in the holders of it along the rights and liabilities.²⁴⁵ The role of the Title Registry is important as it provides functional equivalence between electronic bill of lading and paper in regard to its function as a document of title. According to the Rulebook, in the Bolero bill of lading the document of title is the Key in the form of an electronic message and if carrier is not shown this key, he has any right not to give property of the goods on board.²⁴⁶

In order to promote transparency and clarity of the system, Title Registry and Core Messaging Platform are both controlled by a Trusted Third Party which also has the role of the arbitrator in the event of any dispute between the contracting parties. Moreover, the parties are not entitled to doubt the validity of a document encrypted by the system or the details included in it.²⁴⁷ Therefore, in a contract evidenced by an electronic bill of lading a third party would have no rights against the carrier.

As far as the Bolero bill of lading is concerned, its main goal is to promote the electronic bill of lading, however the option to switch to a paper bill of lading is always available. Any type of holder (Pledgee Holder, Bearer Holder etc.), according to the Rulebook can demand a paper bill of lading at any time before the goods have reached their final destination.²⁴⁸ The information contained in encrypted form shall never be challenged and in the event of discrepancy between the information of the Bolero bill of lading and paper bill of lading, the information enlisted in the Bolero bill of lading always prevails.²⁴⁹

After the analysis of the Bolero system, its Rules seem more reliable and secure than the project mentioned earlier (CMI). Australia has adopted the Bolero Rules as part of their national

²⁴⁵ Ibid 169

²⁴⁶ Ibid 210

²⁴⁷ Ibid 204 Rule 3.1.3

²⁴⁸ Ibid Rule 3.7

²⁴⁹ Ibid Rule 3.7.3

jurisdiction.²⁵⁰ Moreover, other statutory provisions like the Sea-Carriage Document Act 1996 interact with the Bolero Rulebook, promoting the possibility to adopt these rules in more national jurisdictions. However, the future of the project is yet to be defined. Like every other effort to shift to paperless transactions this effort also attracted criticism on numerous legal and practical levels. These are:

1. One of the most significant reasons for its criticism lies on the uncertainty of the Bolero System due to the fact that only English Laws are invoked in cases and the reaction of the courts is yet to be framed in an international level. It is still arguable whether the Rules under the Bolero System will be upheld in courts in different places all around the world. This would be problematic especially in jurisdictions where electronic data as a record is not admissible.²⁵¹
2. The fees in order to join the system are too expensive, forcing smaller businesses and organizations to stay out of the project. Their only option is to be joined altogether creating an organization or a merger of firms in order to reduce the cost. It is quite obvious that this goes against some of the basic principles of the creation of the electronic bill of lading which are to reduce the total costs of shipping enterprises and save time.²⁵²
3. The matter with the provision of securities for creditors within the system is not considered trustworthy and re-examination is needed. Bolero system is not open and there is no coherence with current standards of personal property registries in the majority of jurisdictions. The outcome of this is uncertainty of banks in regard to their respective rights and liabilities and it has set back the approval of the process by the banks.²⁵³
4. Notable is the fact that in the majority of the developed countries, for any legal requirements the Bolero bill of lading does not constitute a valid legal document.²⁵⁴

²⁵⁰ W Ma, 'Lading without Bills - How Good is the Bolero Bill of Lading in Australia?' (2000) 12(2) Bond Law Review, 206–234, p 211

²⁵¹ Ibid 213 p260

²⁵² Ibid 76 p75-78

²⁵³ Ibid 96 p452-453

²⁵⁴ Ibid 46 p171

5. The availability of the option to demand a paper bill of lading under the Bolero Rulebook indicates a partial reliance to the traditional bill of lading and has negatively affected the Bolero bill of lading popularity as it poses legal question linked with the applicability of the appropriate conventions related to the Bolero Rules.²⁵⁵
6. The addition of extra contracts and the voluminous rules in International Trade transactions constitutes an impediment for Traders who are looking for a more comfortable and convenient electronic system to execute this type of work.²⁵⁶
7. The definitions and terms usually used in the system are sometimes unconventional making the system more complicated and discourages Traders to join the system.²⁵⁷ Meanwhile, it is considered that the system will lose the majority of its smallest (in power) members resulting from the tendency towards monopolization in the project. This tendency is apparent through the categorization of the membership which will lead the members to join mergers to secure the most privileged positions, which will eventually lead to cartelization on the cards.²⁵⁸

5.4 K.H. Reinskou's proposal for electronic bill of lading²⁵⁹

Functional Equivalence and Reinskou's Proposal

In the attempt to ensure negotiability and data security, K.H, Reinskou in his piece of work suggested a central registry operated by the carrier or the shipping company through the use of a notification/confirmation system where every electronic message would have to be confirmed before acted upon instead of by a third person.²⁶⁰

The carrier under the role of the registry of the bill of lading information is obligated to update the data into the system on board along with the details found in the bill and this is

²⁵⁵ Philip M Nichols, 'Electronic Uncertainty within the International Trade Regime' (2000) 15 American University International Law Review 6/7, 1380–1422

²⁵⁶ Ibid 228 & 229

²⁵⁷ ibid

²⁵⁸ Ibid 76 p 78

²⁵⁹ KH Reinskou, 'Bills of Lading and ADP, Description of a Computerized System for Carriage of Goods by Sea' [1981] Journal of Media Law and Practice 160-202

²⁶⁰ ibid

the way the original owner of the goods will be recorded as the shipper of the goods. All the changes in ownership have to be mentioned to the carrier through the use of electronic data messages which then will stand as evidence and to confirm receipt and the change of ownership of the shipped goods in his custody while en route. Therefore, it is of specific importance for the system the establishment of a system-generated form of communication in order to confirm the change of ownership to the new purchaser. The quantity and description of the goods have to be enlisted in that confirmation message.²⁶¹

As far as the legal aspects of a bill of lading are concerned, the carrier is bound by the terms of the initial contract of carriage to issue a confirmation message. The defences available to the carrier against all potential purchasers and original shipper will be available and are not to be affected by the confirmation message. Ultimately, the carrier would be obligated to transfer the goods to the latest notified owner or shipper of the goods in accordance with the terms enlisted in the system. Meanwhile, the carrier is considered to have indemnity against any delivery made to parties in good faith.²⁶²

Nonetheless, the change of ownership at the time of the transit of the goods by changing the information of the parties by the entitled person demonstrate the negotiability feature within the system. Moreover, to protect the security of the messages the encrypted system trapdoor was introduced to provide only one way functions, a task assigned to the carrier. These information are demonstrating a functional approach to substitute the functions of the bill of lading not only in an electronic mode but also in a symbolic way. Under Reinkou's proposal, the transaction is confined between carrier and shipper and in the event of sale or pledge of the goods, new parties will replace the shipper as owners of the goods at the destined port, providing the availability to identify the bearer of the bill of lading and therefore eliminating the possibilities for fraud.²⁶³

²⁶¹ *ibid*

²⁶² *ibid*

²⁶³ HY Lee, A Study on the Adoption and Impediment about Electronic Bill of Loading of Major Shipping Companies, [2013] 15(3), 431-451

Reasons for its failure

However, the system was not able to establish itself and therefore it failed. There are two legal nature problems which hindered the proposal and two functional problems.

Legal Problems

1. The proposal only addressed the functional solution of the problem but not made reference to the legal one and it was not considered a model law to be accepted by the sovereign States. Due to the fact that the bill of lading may be governed by numerous jurisdictions, agreement on any legal framework would be a vital element for any substitute of the paper bill of lading in order to be a valid and admissible evidence in the event of a dispute in a court of law.²⁶⁴
2. The contracts forming the relationship between the contracting parties may govern all the legal aspects, but the system is not able to cover all the relevant parties. The outcome of this is for many parties to stay outside the system that are not covered by the provisions of an independent contract of carriage. Such an issue is able to entitle a contracting party to sue the carrier for any action under tort.²⁶⁵

Functional Problems

1. The way which the system tried to ensure protection of the data and authenticity of the system imposed an extra burden on the carrier who has to act as the registry with all the additional responsibilities discussed earlier. It was Reinskou's proposal who suggested the carrier to charge higher rates in response to the additional responsibilities. However, the main target to paperless transactions as mentioned earlier is the reduction of the total costs.

²⁶⁴ R Henriksen, *The Legal Aspect of Paper-less International Trade and Transport* (1st edn, Juristforbundets Forlag 1982) p98

²⁶⁵ Toh See Kiat, *Law of Telematic Data Interchange* (1st edn, Butterworths 1992) p 186

2. Finally, as far as the financial institutions are concerned, banks were not supportive of the idea that they have to respond to the carriers who act as registries.

6. Conclusion

The first part of the conclusion will summarize the reasons which hindered the progress and establishment of the projects and initiatives and the second part will provide suggestions as to how the problems impeding the recognition of the electronic bill of lading could be overcome.

Reasons blocking the development of the projects

There are 5 main reasons as to why the efforts to establish paperless transactions have failed. These are the following.

1. It is common knowledge that business opportunities and conditions arise first and then the relevant legislation is being drafted from the governments and the maritime business community is aware of that fact. However, support from the governments has not been evident but the fact this is evident is that all these efforts were primarily aiming at direct business gains.
2. The efforts in their totality were lacking synchronization to achieve a better and universal form of code and therefore lacking coordination. Additionally, the older attempts (excluding BOLERO) that started such an initiative, attempted it without the cooperation of other stakeholders and when their support was needed in order to attract and reach the desired number of active participants, that did not happen.
3. Support from the transporters' community was crucial. The efforts made were only looking to benefit the shipping industries rather than the customers, resulting in the lack of support from the transporters' community.

4. Universal appeal was not possible as far as the technical solutions were concerned, driving the parties overseas to refrain from participating. Therefore, these efforts lost their power within their own national boundaries.
5. Finally, the lack of support and interest from financial institutions, especially banks, is one of the biggest problems causing the failure. Although there is an exception in the case of SeaDocs and Chase Manhattan Bank, however the bank's interference and support was stopped during the project's operation. Part two of the conclusion will also refer to this matter.

Suggestions as to how to overcome the legal impediments for the electronic bill of lading

The analysis in the Bolero and CMI attempts is proof for the possibility of technological coherence in this matter. Some of these were able to be applied in international trade, but the major impediment was the acceptance of these technical solutions at judicial and business levels. The apprehension in regard to the adoption of these ventures by the business community was based on lack of confidence and business competition. In this extent, the major impediment lies in the lack of supporting and globally applicable laws attached with the acceptance of the electronic record in a court of law. Moreover, financial institutions and especially banks were not supporting in their totality, if not fully, neither the electronic bill of lading, neither the international projects and initiatives for reasons already discussed earlier in the paper. Therefore there are three suggestions that can be made and act as catalysts for the acceptance of the electronic bill of lading. Firstly, the Courts need to accept change by adopting a more liberal approach. Secondly, amendments and changes in legislation are essential and finally, support from the banks is greatly needed but not yet achieved.

Courts and Liberal Approach

The UK and many more common law countries, coming in contrast to the development of civil law have neglected the endorsement of business practices in commercial transactions as admissible precedents. Nowadays, electronic transactions have become a daily routine for almost every business man but the

courts are still hesitating to legally accept this mode of transactions. Technological developments must come with change in peoples' attitude in order to exploit the benefits that are shown up. In the bill of lading context, it is the technological development of the electronic bill of lading status that has set the major challenge in regard to its admissibility/acceptability in electronic form. The courts, if they decide to adopt this point of view they could provide more liberal interpretations in order to attempt promote the admissibility/acceptability of the electronic bill of lading. This is apparent in common law countries where the courts have adopted and used a more liberal approach.²⁶⁶ In this scenario it is proposed that the best evidence rule is ineffective and old-fashioned and new types of evidences are required to be established and accepted,²⁶⁷ where on the other hand legislation is a prerogative of the courts as far as civil law countries are concerned.²⁶⁸

Although this solution may take place in limited jurisdictional areas, it has to be said that in case where the problem is completely identical the same solution might be an attractive option for the rest of the jurisdictions. The nature of English Courts is known that tends to conservatism to a great extent. If the English Courts determine to accept electronic records many more countries with a similar judicial system (India) may be tempted to follow the same line. It will play a role in dispute resolution within the jurisdiction of a country and the region as long as it is in accordance with the EU directives on electronic commerce. Courts however must be eligible of giving their judgements in the event of a dispute before these.²⁶⁹ Similarly, court decisions will be scenario-based and therefore might not apply globally. Conclusively, a disadvantage of this preposition is that uniformity around the world is not possible to occur through this suggestion.²⁷⁰

Reform in Legislation and Amendments

Apart from the fact that that courts are conservative, lack of binding legal provisions is an additional cause which causes the hinder of the electronic bill of lading establishment and development.

²⁶⁶ Charles Arnold-Baker, 'English Law' in *The Companion to British History* (1st edn. Longcross Denholm Press 2008) p 484

²⁶⁷ *Masquerade Music v Springsteen* [2001] EWCA Civ 563

²⁶⁸ *Texas Industries v Radcliff Materials, Inc.*, 451 US 630 (1981)

²⁶⁹ *Ibid* 225

²⁷⁰ *ibid*

Apparently, only few countries have enforced legislations promoting electronic commerce and accepting electronic signatures in courts of law. Noticeable is that fact that in order to achieve certainty legislation is the most appropriate tool to achieve it. As far as national legislation is concerned there are not many laws in which amendments could take place in order to establish uniformity in regard to the intentions of electronic commerce.²⁷¹ A suggestion to this extent is that all countries involved in the maritime industry either in the role of shipper or in the role of carrier should re-examine and make amendments in favour of electronic commerce and providing a more attractive legal framework in regard to transactions through electronic mode.

An effort to carry out this suggestion without the cooperation of numerous nations will be deemed unsuccessful. The UNCITRAL Model Law governs most of the aspects linked with EDI and electronic commerce and is practically offering a technical and universal solution to this matter.²⁷² This specific draft law could be the root of the universal acceptability in regard to the electronic bill of lading. Optimism is generated though, through the willingness of especially European Countries to accept it as part of their national law in the attempt to promote uniformity.²⁷³

Gain the Support and Trust of Financial Institutions

Evidently, financial institutions and especially banks are faced with problems and difficulties when it comes to transactions through the electronic bill of lading legal framework and status and there are occasions where insecurity is generated for their part. As discussed earlier in the paper, apparently the banks have to deal with a crucial issue which hinders the use of their advantage to hold a bill of lading as collateral security. Moreover, in the International Projects and business initiatives their support was never truly granted. This is due to the fact that mainly the Banks were not willing to share personal transactions correlated data with the registry of each system.

The reason for discussing this is that, it is no secret that financial institutions in the 21st century may potentially possess a lot of power and can practically influence a lot of decisions. Banks play a role in almost every International maritime business transaction and they would never agree to a system that

²⁷¹ Ibid 7 p 95-99

²⁷² UNCITRAL Model Law on Electronic Commerce with Guide to Enactment, 1996

²⁷³ Ibid 9 p 207

is not favouring their positions but occasionally provide them with difficulties. Therefore, it is of specific importance to manage to gain the support from the financial institutions by presenting them a legal scheme where these disadvantages could be diminished or by bringing them into balance with the maritime industry. If the potential legal framework of paperless transactions is to be advantageous for financial institutions to a certain extent, ultimately, the financial institutions' will and desire will positively and heavily contribute to the implementation of that system. If this is to happen, then the effort towards paperless transactions will be one step closer to its succession.

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