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INTRODUCTION OF ELECTRONIC BILLS OF LADING TO THE CARRIAGE OF GOODS BY SEA: THE NEED FOR RATIFICATION OF ROTTERDAM RULES, 2008

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Preface

I became aware of the recognition of Electronic Bills of Lading by the United Nations Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea (otherwise known as 'Rotterdam Rules') during my class lecture on Maritime Law Contracts, sometimes in September 2018, at the Scandinavian Institute of Maritime Law. The fact that the Convention has been adopted since 2008 without much action on the ratification process by the signatories spur my curiosity to having a deep research on this electronic bill of lading and to eventually take it up as my thesis' topic.

On this note, my greatest gratitude goes to God for everything during my entire studies in Norway. More so, I would like to appreciate the Scandinavian Institute of Maritime law for this great privilege to have undertaken my LLM programme in Maritime Law at the University of Oslo. I also extend my sincere appreciation to my supervisor, Professor Kristina Siig for her guidance and detailed intellectual discuss during the writing of this thesis.

Lastly, I really want to say a very big thank you to my family for their support and specially Hon. Justice G.O. Kolawole and Ahmed Raji, SAN and other close friends who stood by me throughout the whole study period. Special thanks to Dr. Olasuupo Owoeye, Ms. Oluwadamilola Fakolujo, Olarenwaju Femi-Falade and Dr. Innocent Takotue for your immense support while writing this thesis.

Oslo, November 2019.
Author

List of Abbreviations

B/L- Bill of lading

e-B/L or e-Bills-Electronic bill of lading

ETR- Electronic Transferable Records

CMI- Comité Maritime International

ICC-International Chambers of Commerce

HVR-Hague-Visby Rules

MLEC-Model Law on Electronic Commerce

MLES-Model Law on Electronic Signatures

MLETR-Model Law on Electronic Transferable Records

P2P-Peer to peer (network)

IG of P&I- International Group of Protection and Indemnity Club

RR-Rotterdam Rules (United Nations Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea, 2008).

UNCITRAL- United Nations Commission on International Trade Law

UNCTAD-United Nations Conference on Trade and Development

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1. Introduction

1.1. Presentation of the subject matter

With the invention of faster ships in the maritime industry, coupled with the fact that these ships frequently arrive at the port of discharge before the arrival of paper bills of lading, as the paper B/L has to be transported from party to party usually by courier service, (abbreviated B/L shall be subsequently used) there is thus, obvious delay for delivery of cargo. The non-availability of the B/L at the discharge port means that the cargo cannot be delivered because delivery of cargo other than against the presentation of an original B/L would likely prejudice the carrier's P&I cover. In addition, the development of better navigation technology and the possibility of sale of goods while in transit, parties became aware that a rudimentary bill of lading cannot meet up with the standard required for global trade.

It is for this purpose that as far back as 1990, organizations such as CMI and UNCITRAL began work on legal frameworks for e-commerce since the pre-existing Conventions only recognized the traditional paper B/L. With the adoption of the said legal frameworks, there emerged bulk of electronic alternatives to the paper bills of lading, worthy of note are three notable companies for this; the Bill of Lading Electronic Registry Organization (Bolero) system, essDOCS systems, and the e-title system. While the International Group of P&I Clubs approved the Bolero and the essDOCS systems in 2010, it later did the same for e-title™ system in 2015.

In spite of great efforts and resources deployed over the years for the recognition and wide-usage of e-B/L, the acceptance of an e-B/L in the maritime trade is yet to be actualized. The lack of success, can be linked partly to a general resistance and conservative forces among the participants in the maritime trade inclusive of non-ratified legal framework such as the new

Convention for the use of e-B/Ls. However, there is no doubt that the use of Electronic Data Interchange (EDI) based technology to dematerialize paper bills, has varying merits including cost saving, increased level of accuracy of information, speed and efficiency in trade documentation.

1.2. Purpose and Outline of the study

Considering the obvious fact that technology is the key in the present day human endeavors with the various advantages associated with it, one would expect that the shipping industry ought not to be left out in this jet era. Thus, the versatile transport document called paper-based bill of lading requires a transition termed "electronic bill of lading". There has been agitation from different quarters in the last few decades for this change, with UNCITRAL coming up with “legal frameworks” and various Model Laws for e-commerce. Also, there are rules created by other private international institutions such as the CMI (Comité Maritime International) Rules and the BOLEROs (Bills of Lading Electronic Registry Organization) rulebook and title registry. All these are incorporated in the electronic bills of lading provisions stated in the Rotterdam Rules.

The drive home point is that since the Rotterdam Rules are not ratified as required, the transport document for the carriage of goods by sea goes back to the primitive age of its paper form and the efforts of the draftsmen for several years equally amounts to a nullity. This thesis evaluates the originality and genuineness of electronic bills of lading when compared to its paper counterpart to ascertain if it passes the test of functional equivalence, that makes a bill of lading what exactly it has been from its inception. And if in the affirmative, there should not be any practical hindrance for the acceptance/usage of e-bills even if the Rotterdam Rules are not yet in force.

The structure of this work follows this order for a better understanding of a bill of lading in its entirety. Chapter 2 considers the advent of a document described as "bill of lading" as well as the emergence of its characteristic nature. The history and the operation of this B/L from its inception, which led to the enactment of laws regulating the use of this document of title is also discussed, to the extent of how this document has come to stay as a vital document to the contract of carriage of goods by sea.

The objective of chapter 3 is to pinpoint the reasons for the transition of a B/L from the traditional paper document to an electronic document. It considers how the paper-based B/L functions under the Hague-Visby rules citing relevant provisions from the Norwegian Maritime Code, 1994 with amendments, while juxtaposing it with the electronic bills of lading recognized in the Rotterdam Rules, 2008. The benefits of e-B/L to international commerce of 21st century, transmission of same by EDI and the legal status of e-Bills in any Conventions as well as national maritime laws of various states.

Bearing in mind the fact that the discussion in chapters 2, 3, and 4 are to critically view the new development that the Rotterdam Rules(RR) have brought to the carriage of goods, coupled with the significant impacts that distinguish this Convention from the subsisting Conventions on the carriage of goods by sea. Emphasis on the development introduced as per the e-B/L would be considered in-depth, being the crux of this work with a closer look on the emergence of new blockchain technology as well as its benefits. More so, further discussion on the need for the world's biggest trading nations and maritime merchant powerhouses to endeavor to ratify the Convention at the earliest possible time will also be analyzed in the latter part.

Finally, chapter 5 concludes the thesis with general remarks on the body of the work and strongly recommend that member States should do the needful on the ratification of the new Convention that is bound to give legal backing/life to electronic bills of lading.

1.3. Methodology

This thesis adopts different approaches such as a dogmatic method which includes analysis of regulations, articles in few Conventions and *travaux préparatoires* of the Rotterdam Rules as well as a qualitative method. Presently, there is very little or no case law on this topic but instead, other sources such as model laws and the private law-based set of rules became very handy and available in this writing.

The objective of this thesis is to analyze the provisions of electronic bills of lading in the yet to be ratified Convention and reasons for its ratifying accomplishment. Although the Rotterdam Rules do not expressly mention e-B/L, rather the phrase "*electronic transport record* "is being utilized; this is what this writing desires to test in order to determine if the new instrument adequately caters for e-bills up to the level of being able to satisfy the traditional functions of a paper-based B/L.

1.4. Scope and Summary

The aim of this work is to critically examine the electronic bill of lading which is firstly recognized under the United Nations Convention on contracts for the international carriage of goods wholly or partly by sea 2008, otherwise known as the Rotterdam Rules for the purpose of determining if the new Convention recognizes "*the principle of functional equivalence"*, (a doctrine that is uniquely identified with paper-based B/Ls) since an electronic bill of lading must also be able to exhibit this principle for its acceptance.

The focal point of this thesis is on the electronic bill of lading and its functionality as a viable transport document within the maritime industry. In essence, this thesis is to mainly consider "*whether or not the Rotterdam Rules version of an electronic bill of lading analytically satisfy the doctrine of functional equivalence?*" The study also focuses on the already available systems for the use of e-Bills as well as new blockchain technology to which, all is for the purpose of upgrading B/L to the status of a paperless document for the development of e-commerce in the twenty-first century maritime transaction.

2. Description of a Bill of lading

2.1. History/Evolution of Bill of Lading

To trace the origin of the various Conventions currently governing the bills of lading(B/Ls), it is important to understand how the transport document known as "bill of lading" as a negotiable instrument evolved.

In the 11th century[1] when there were no B/Ls, merchants travelled with their goods and a clerk was required to enter the particulars of all goods received in a single book or register[2] which was part of the ship's papers.[3] A statute was passed in the City of Ancona in 1397 which required that every clerk should provide a copy of his register to those with a right to demand it, regardless of any prohibition by the master or owner.[4]

As trade developed, the merchants ceased to accompany their goods, and there arose the necessity for a separate document which was at first in the nature of a receipt for the goods but later became a document which embodied the terms on which the carrier would carry and deliver the goods at the port of destination. A copy of the register, signed by the master, was an appropriate way to indicate who had title to the goods and to bind the shipowner and consignee to the conditions of shipment. The copy of the ship's register marked the birth of the "bill of lading" as a document in the form in which it is known in today's maritime transaction as a negotiable document.

Trade within the Mediterranean ports began to grow significantly and a record of the goods shipped was required, and the most natural way of meeting this need was by means of a ship's

[1] The slight qualification in this sentence is made necessary by McLaughlin's assertion that "a document similar to the bill of lading" was known in the Roman times. Regrettably, he gives no fuller explanation: Chester Mclaughlin, "The evolution of the ocean bill of lading," *The Yale Law Journal* 35 no.5 (1926): 550.
[2] Mclaughlin, "The evolution of the ocean bill of lading," 550.
[3] William Eric Astle, *Legal developments in maritime commerce*, (London: Fairplay, 1983), 61.
[4] Mclaughlin, "The evolution of the ocean Bill of Lading," 551.

register, compiled by the ship's mate. Although the use of such a register probably began informally, it was soon, in some ports at least, placed upon a statutory footing.[5] Its accuracy was paramount and, around 1350, a

> "*statute was enacted, which provided that if the register had been in the possession of anyone but the clerk, nothing that it contained should be believed, and that if the clerk stated false matters therein he should lose his right hand, be marked on the forehead with a branding iron, and all his goods be confiscated, whether the entry was made by him or by another."*[6]

By 14th century, the receipt function of the B/L was being accomplished by an on-board record[7] but still, there was no separate record of the goods loaded as it seems that shippers still travelled with their goods and there was accordingly no need for one. This only turned around when trading practices changed and merchants sent goods to their correspondents at the port of destination, informing them by letters of advice of the cargo shipped and how to deal with it. They also began to require from the carrier, and to send to their correspondents, copies of the ship's register.

In the course of time, the B/L became the basic shipping document, evidencing the contractual relationship between the carrier and the shipper, and taking the form of a non-negotiable bill of lading. But with the growth of seaborne commerce, there came also an increasing need for the means of transferring the title in the goods before they arrived at destination. From this in turn

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[5] William Porter Bennett, *The history and present position of the bill of lading,* (New York: Cambridge University Press, 1914), 7, cites the Ordonnance Maritime of Tirani (1063) as the first reference to carriers having to employ a clerk to record the goods shipped. See also, McLaughlin, op. cit., p.550. Bensa, The Early History of Bills of Lading, 1925, p.5, points out that the ship's mate was accordingly a person of the highest standing on the ship.

[6] Mclaughlin,. "The evolution of the ocean bill of lading," 551, citing 2 Pardessus, Collection de Loix Maritimes, p.66 et seq.

[7] This may go some way to explaining the practice of retaining one copy of the bill of lading on board when it took over the receipt function.

arose the practice of transferring the ownership of the goods by endorsing the B/L to the buyer, and so the B/L as a negotiable document came into existence. The B/L was widely used towards the end of 16th century and the earliest extant copy of a bill of lading is probably that in the case of "The Thomas" in 1538[8], where a copy of the bill was preserved on the court's record.

During the 19th century when there was tremendous growth in seaborne commerce, the early B/L was silent on clauses imposing liability on shipowners, simply because shipowners generally had great freedom of contract as to the terms and conditions under which goods might be carried.[9] In this circumstance, cargo interests began to take action for recovery of loss or damage against shipowners, and shipowners sought to resolve the issue by including in their B/Ls clauses exonerating them from liability for cargo loss or damage and so limiting contractually, the traditional liabilities imposed by common law.[10]

The manner in which this right of freedom of contract was being exercised caused serious concern among the trading nations because overseas commerce was developing upon credit and B/Ls were the medium through which credits financing overseas commerce were arranged.[11] The negotiable B/L was in common use, and cargo and banking interests were complaining bitterly about the manner in which shipowners and carriers were abusing the right of freedom of contracts.[12] This called for legislative action in the United States, whereby the Congress, in 1893, passed the Harter Act unifying the terms and conditions of contracts of carriage evidenced by B/L issued for the carriage of goods by sea to or from and between ports of the United States,

[8] Selden Society, 1 Select Pleas in the Court of Admiralty, 61
[9] Astle, Bills of Lading Law, 9.
[10] Ibid. 14
[11] Ibid.
[12] Ibid.

therefore, bringing to an end the right of shipowners and carriers to freedom of contract in respect of such voyages in connection with contracts evidenced by bills of lading.[13]

The effect of the Harter Act was, amongst other things, to render null and void any clauses in the B/L relieving the shipowner or carrier from liability for loss or damage to cargo arising from negligence, fault, or failure in the proper loading, stowage, custody, care or proper delivery of the cargo.[14] And so, it might be conveniently said that not only was the Harter Act of 1893 the forerunner of international law relative to the carriage of goods by sea under contracts evidenced by B/Ls, but it was also the basis upon which latter laws of maritime nations were drafted, and in fact laid down the basis for the Hague Rules of 1924[15], being a Uniform legislation on the contract of carriage of goods by sea globally.[16]

2.2. Definition of a Bill of Lading as a Paper document

A legal dictionary[17] defines a bill of lading as *" a memorandum signed by masters of ships acknowledging receipt of the merchant's goods"*. The Hague[18] and Hague-Visby Rules[19] do not define a B/L, even though the liability incurred under these Rules depends upon its issuance. However, these Rules specify requirements as to the contents and evidentiary effect of the B/L.[20]

Article 1 of Hamburg Rules, 1978[21] provides that: *"bill of lading means a document which evidences a contract of carriage by sea and the taking over or loading of the goods by the*

[13] Ibid.15. Also, Section 1 of the Harter Act of the United States, 1893.
[14] Ibid.
[15] International Convention for the Unification of Certain Rules of Law relating to Bills of Lading ("Hague Rules"), and Protocol of Signature.
[16] Supra note, 14.
[17] Cunningham Law Dictionary(1764) https://tarlton.law.utexas.edu/law-dictionaries/1764-cunningham
[18] Hague Rules.
[19] The Hague Rules as Amended by the Brussels Protocol 1968.
[20] UNCTAD, The Economic and Commercial Implications...., 99.
[21] United Nations Convention on the carriage of goods by sea (The Hamburg Rules) Hamburg, 30 March, 1978

carrier, and by which the carrier undertakes to deliver the goods against surrender of the document. A provision in the document that the goods are to be delivered to the order of a named person, or to order, or to bearer, constitutes such as undertaking."

The Supreme Court of Nigeria in deciding B.M. Ltd. v. Woermann-line[22], had this to say "*A written document signed on behalf of the owner of the ship, in which goods are embarked, acknowledging the receipt of the goods and undertaking to deliver them at the end of the voyage, subject to such conditions as may be mentioned in the bill of lading. The bill of lading is, therefore, a written contract between those who are expressed to be parties to it".*

From the above definitions of a B/L, it can be stated that a B/L is a document of great importance in international trade as it keeps records of goods that have been loaded on board, verifies the accuracy of the quantity and quality and the carrier is to deliver to the person who is entitled to the said goods at the delivery point.

2.3. The Characteristic nature of a Bill of Lading

The legal nature of the bill of lading, and the role it plays in international commerce, has been clearly demarcated in case laws, being a symbol of the goods and its possession gives the holder control over the goods, and which by 16th century, it has been able to fulfill a number of important functions.[23] First, it allows the person in possession of the B/L to control the goods during transit and to claim delivery of the goods at the port of destination. Secondly, it facilitates the sale of the goods while in transit because the transfer of the B/L effects a transfer of

[22] B.M. Ltd. v. Woermann-Line (2009) 13 NWLR (Pt.1157) 149 S.C.
[23] Schmitthoff, *Schmitthoff's Export Trade*, 590. Sanders v Maclean (1883) 11 QBD 327; Horst v Biddel [1912] AC 18.

ownership in the goods. Finally, it is possible for the holder of the bill to use it as a security to raise the finance necessary to effect an international sale of goods.[24]

To put it simply, the B/L has long been accepted to serve three legal functions: it is a formal receipt given by the carrier to acknowledge that goods of a specified type, quantity and condition have been received for shipment or shipped by him to a stated destination; it provides evidence of the contract of carriage which states the terms of the contract concluded prior to the signing of the bill of lading; and it acts as a document of title to the goods.[25]

These three traditional legal functions of the B/L are evident in the definition of a B/L given in the Hamburg Rules[26] and a negotiable document must be capable of fulfilling these three conjunctive functions to earn the title "bill of lading".

2.3.1. The Bill of Lading as a Receipt

Rudimentary bills of lading were in existence in the late 14th century and it was not contemplated that they would be transferred, as the original role of the B/L was that of a receipt for goods shipped on board.[27] The B/L originated purely as a receipt for the goods shipped, a copy of which could be sent to advise the correspondent of the goods sent and the purpose of which they were to be put. They clearly served some sort of receipt function, but it does not mean that the possession of the document entitled the possessor to the delivery of the cargo. As to the nature of bills of lading, Bennett posited that :

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[24] John Furness Wilson, *Carriage of Goods by Sea,* (London: Pitman, 1993), 143 and 147.
[25] Schmitthoff, *Schmitthoff's Export Trade*, 561. Ivamy, Payne, *Payne and Ivamy's Carriage of Goods by Sea*, 62. Astle, *The Hamburg Rules*, 13.
[26] Article 1.
[27] Bools, The bill of lading, 2.

> *"Some proof would be required that the person demanding delivery of the goods at the port of destination was the person entitled to do so, and a copy of the register signed by the captain would be the most natural indicium of title,*[28] *and would clearly bind the ship owner and the consignee to the conditions of shipment."*[29]

The central function of the B/L as a receipt is still vital today and all bills of lading will contain spaces on their face for details to be entered. If the carrier fails to deliver the stated quantity, there will be evidence to indicate that loss or damage occurred while the goods were in transit.

From the above on the evolution of a B/L, it is apt that the original function of a B/L was that of a receipt; a B/L constituted an admission by the ship's master, on behalf of his employer, that the consignor's goods had been placed on board the ship for transport to the agreed destination.[30] Thus, where documents are received in exchange for goods, such representations as to the nature of the goods received by the issuer of the document have important commercial effects and also where goods are short delivered or damaged on discharge, the statements on the B/L constitute the basis of the receiver's cargo claim.[31]

The receipt function of a B/L is very significant to the extent that if the description of the goods in the B/L did not correspond to that in the sales' invoice, the buyer would be able to reject the documents and to refuse payment.[32] This analysis is to the effect that the receipt role of a B/L cannot be eroded by any standard.

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[28] See to the same effect, Kozolchyk, "The evolution and present state of the ocean bill of lading from a banking law perspective" 161& 167.
[29] Bennett, op. cit, p.6.
[30] Grime, *Shipping Law*, p. 121. Ross v Rennie (1859) 3 S 253.
[31] Wilson, *Carriage of Goods by Sea*, 126.
[32] Wilson, *Carriage of Goods by Sea*, 127.

2.3.2. Document of Title

The role of a bill of lading as a document of title enables it to play the central part it does in international trade transactions.[33] While the B/L is the most valuable and flexible of all contractual documents relating to the carriage of goods by sea,[34] there appears to be little agreement between the leading authorities as to an exact definition of a document of title.[35] However, one of the functions of the B/L as a document of title is to allow the holder of the bill to claim delivery of the goods from the shipowner or the carrier at the port of destination. This function is a unique characteristic of the B/L that delivery of the goods must only be made against the surrendering or tendering of the document.

Previously, traders found it necessary to issue B/L in triplicate[36] and statements to the effect that "*one bill having been accomplished, the others stand void*" appeared in the bill. This statement implied that it was the custom to deliver the goods to the person presenting the bill.[37] The awareness of the practice that appearance of the consignee's name on the bill, together with the understanding that the goods would only be delivered to someone presenting one of the original three bills, effectively made the B/L a document of title.[38]

Ordinarily, there was no need for a document which proved the consignee's entitlement to the goods since the carrier knew from the register or his own copy of the receipt to whom delivery was to be made and therefore, the B/L as a document of title indicating entitlement to the goods

[33] Debattista, *Sale of Goods*, 15.
[34] Grime, *Shipping Law*, 122.
[35] Benjamin, *Benjmain's Sale of Goods*, 891.
[36] This tradition has endured and what was expedient in the past has become a defect in the employment of bills of lading in modern commerce as it threatens the very security that the bill of lading is intended to provide to its holder.
[37] Bennett, *The History and Present Position of The Bill of Lading as a Document of Title to Goods*, 10.
[38] Kozolchyk, "Evolution and present state of the ocean bill of lading from a banking law perspective," 167.

would actually only arise when the goods were dispatched before the shipper finally determined to whom they were to be sent.

This circumstance might be because the shipper had not decided whether the goods should be consigned to an agent for sale or should be sold afloat. It is the possibility of the goods being traded whilst at sea that gave rise to the need for a document that could be transferred, by the shipper at least, and which would evidence entitlement to receiving the cargo at the port of destination.

2.3.3. The bill of lading as an evidence of contract of carriage

Generally speaking, the actual contract of carriage is concluded sometime before the B/L is issued,[39] and as far as the shipper is concerned, it is accepted that these terms do not constitute the contract of carriage but only provide evidence of it.[40] The B/L will, in most cases, be subject to the shipowner's standard bill of lading terms.[41] Other terms can also be inferred from, among other things, the carrier's sailing announcements and negotiations with loading brokers before the shipping of the goods.[42] Due to the fact that the actual contract of carriage is concluded some time before the issuance of the B/L, and should be, in case the goods are lost or damaged, the shipper will nonetheless have a remedy for breach of contract founded on the terms of the existing contract of carriage. It is for this reason that it is necessary that these terms be in force from the inception of the contract, otherwise the B/L would not be evidence of the contract but a variation of it.[43]

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[39] Glass & Cashmore, *Introduction to the law of carriage of goods*, 161.
[40] Wislon, *Carriage of goods by sea*, 139.
[41] Glass and Cashmore, *Introduction to the law of carriage of goods*, 161. Schmitthoff, *Schmitthoff's Export Trade*, p.346.
[42] Wilson, *Carriage of goods by Sea*, 139.
[43] Gaskell, Debattista and Swatton, *Chorley and Giles' Shipping Law*, 187.

The back pages of most standard B/L forms usually show printed details of the contractual terms or contain a reference to the "long form" bill in which they appear in full. This may be made when the goods are shipped, when they are received and accepted for shipment or by previous agreement between the shipper and the carrier, and the B/L is generally only issued after the ship has sailed.[44] The B/L is technically a statement by the carrier of his view of the terms of the contract of carriage. [45] If, in the opinion of the shipper, the printed terms of the B/L issued do not comply with those of the earlier agreement, he may submit evidence to establish the exact terms of the agreement since by accepting the B/L, he has not necessarily bound himself to all its stipulations.[46] In the hands of the shipper, the B/L will provide *prima facie* evidence of the terms of the contract of carriage although challenging its accuracy may be a difficult burden to discharge.[47] However, once the bill is transferred to a third party it becomes the contract between the shipowner and transferee of the bill and its contents cannot be challenged,[48] as it becomes conclusive evidence of the terms of the contract of carriage.[49] In essence, a B/L is not the actual contract of carriage of goods by sea in the real sense of the traditional function of a B/L, but merely evidencing an agreement already concluded by parties which specifies goods transported by the carrier.

In summary, it is to be noted that the description of a traditional B/L is in a paper form by its evolution. These traditional functions of a B/L from its origin distinguished a B/L as a special document from other transport documents. Also, these unique functions which are identical to

[44] Benjamin, *Benjamin's sale of goods*, 898.
[45] Todd, *Modern bills of lading*, 90.
[46] Wilson, *Carriage of goods by sea*, 140. Crooks v. Allen (1879) 5 QBD 38. In The Ardennes [1951] 1 KB 55 oral evidence was admissible to establish the original terms of the contract, leaving no doubt as to the status of the bill of lading as constituting evidence of the terms of the contract of carriage.
[47] Ibid, p.140.
[48] Glass, Cashmore, *Introduction to the law...*, 161
[49] Wilson, *Carriage of goods by Sea*, 141. Benjamin, *Benjamin's Sale of Goods*, 899.

the characteristic nature of a B/L seem to be the challenges facing the upgrade of a B/L to an electronic status(electronic bill of lading). May it be emphatically stated here that writings of scholars in this field have shown that the document-of-title function of a B/L is the major obstacle facing the embrace of an e-B/L and I would revert back to this discussion later on.

3.0. A Review of Electronic Bill of Lading

3.1. The Emergence of Electronic Bill of Lading.

Having considered the development of international carriage of goods with regards to the paper-based bill of lading, attempts have been made since the 1980s to introduce electronic bills of lading (E-Bills or e-B/L) to replace traditional paper B/Ls owing to the disadvantages of a paper B/L. Presently, B/Ls under the extant international conventions and national laws of various States are basically paper-based. The consequences of a paper B/L include the fact that it moves too slowly for its availability at the port of destination to facilitate the delivery of the goods to the party entitled to them; shipping and administrative cost; exposure to fraud etc., which would ordinary cause one to consider having a better option of an electronic negotiable transport document. [50]

The striking fact that there was the absence of technology at the inception of B/L itself as well as the enactment of laws/Conventions regulating B/L could have possibly affected the use of e-B/L. However, considering the fact that the world has greatly developed technologically in this twenty-first century, transport document must also grow with technology advancement and the evolvement or general acceptance of an e-B/L is not exempted.

According to the Cambridge Business Dictionary, an e-B/L is "*a B/L that is sent and stored by a computer rather than on paper.*"[51] Časlav in his article stated as follows:

"an electronic bill of lading does not mean simply that a bill of lading is generated by a computer and contains the same data as a paper bill of lading. An electronic bill of lading means something more: the data inserted in a computer is transmitted electronically, using

[50] https://www.shiplawlog.com/2016/01/14/electronic-bills-of-lading/
[51] https://dictionary.cambridge.ord/dictionary/english/electronic-bill-of-lading

electronic messages, so that an e-Bill consisted of the series of electronic messages is sent and received among a carrier, shipper and consignee."[52]

I quite agree with Časlav on the description of an e-B/L for the reason being that, when the description is thought-through, it is evident that the contents and messages transmitted are permanent which can be retrieved at any point in time coupled with fast receipt of same by a party(ies) that is/are entitled to same.

Also, Florian Kuester describes an e-B/L as "a legal and functional equivalent of a paper B/L. The e-Bills must digitize the core functions of a paper B/L, namely its legal acceptance as a receipt, as evidence of or containing the contract of carriage and as a document of title."[53]

Over the past years, three e-bills systems which are: Bill of Lading for Electronic Registry Organization (BOLERO), ESSdocs and E-Title have been approved by the International Group of P&I Clubs which have reported substantial growth in the use of their platforms[54]. The rationale for the growth is that in sea transportation business, adoption of commerce technology is vital to maintain future competition and the adoption of e-B/L by International Group of P&I Clubs and BIMCO has added great impact to widespread acceptance of e-B/L around the World. It should also be added that there are UNCITRAL and CMI legal frameworks on the adoption of e-bills.

This thesis therefore submits that the contents of a paper B/L do not just find themselves on the face of an A4 paper but rather those contents are being produced by the means of a computer. This then connotatively means that the same computer used in typing the B/L that is later printed

[52] Časlav Pejović "Documents of title in carriage of goods by sea under English law: legal nature and possible future directions," *Poredbeno Pomorsko Pravo* 43 no.158 (2004): 43-83.
[53] Combined Transport Magazines, "Electronic bill of lading-how is paperless trade possible?," 07 February, 2017, https://combined-transport.eu/electronic-bill-of-lading
[54] https://www.gtreview.com/supplements/sibos-supplement-2016/way-now-paperless-trade/

on an A4 paper should also be given the credit to transmit electronically. The main question then is that what is the challenge facing an e-B/L? Is it the fact that the contents of an e-B/L are not readable on an A4 paper in such a way that it can be held physically and handed over to a shipper? or that before an e-B/L can fulfill the three identified functions of a traditional B/L, same contents must be physically seen or sent to the concerned person? The summary is that the consequences of a paper B/L have paved way for an e-B/L, the existing Conventions do not specifically provide for "paper" and also, the necessity to have an e-B/L within the maritime industry has been recognized by international organizations, to the extent that Rotterdam Rules(RR) have also endorsed its applicability to the contract of carriage of goods via the provisions of specific articles on electronic negotiable transport documents.

3.2. Operation of a Bill of lading under Hague-Visby Rules vis-a-vis Rotterdam Rules.

There are basically three international Conventions on the contract of carriage of goods by sea, which are: Hague Rules, Hague-Visby Rules(HVR) and Hamburg Rules. However, HVR is an amendment to the Hague Rules; which is much more ratified by world shipping nations than the Hamburg Rules. In analyzing this sub-topic, the Norwegian Maritime Code (NMC) being the national maritime legislation of Norway is to be considered, a State that has denounced Hague Rules and consequently ratified HVR by incorporating/domesticating the provisions of HVR in the NMC. Thus, operation of a B/L will be viewed under the NMC and the RR.

The wording of the legislation is clear that a B/ L is to be issued in several originals and it can be signed as provided in Section 296 of NMC " ... *the bill of lading shall be signed by the carrier or a person acting on behalf of the carrier."* Nevertheless, the proviso to the said Section 296 also

provides that " *the signature may be produced by mechanical or electronic means".* Thus, if an electronic signature is recognized for a paper bill, it then seems that a paper bill has long been tilting towards an e-B/L.

Article 1 of the Rotterdam Rules[55] (the definition article) does not explicitly mention the B/L. It can be assumed that this was intentionally omitted by the drafters since the Convention covers other legs of transport other than the sea.[56] The Convention in Article 1(14) refers to transport document where B/L can be categorized; and by Article 1(15), a B/L can be logically summed up as a "negotiable transport document". Furthermore, looking at Article 1(19) on "negotiable electronic transport document", it is evident that the Convention recognizes e-B/L and can be concluded that this is the first international convention giving life to e-B/L. Although, the enforceability of this new Convention via ratification is another issue to be discussed later.

From the preceding paragraph, e-B/L is operational under the RR as it is explicitly provided for, unlike the Hague/HVR that indirectly recognized paper B/L. This is not to say that the RR does not identify with the usage of paper-based B/Ls. There are legal frameworks that have set in motion the workability of an e-B/L prior to the drafting of RR. For instance, UNCITRAL[57] in 1996 adopted Model Law on Electronic Commerce[58](MLEC) as well as CMI[59] with CMI rules, setting out the criteria that e-B/L must fulfill in satisfying the traditional functions of a B/L, that is, *the doctrine of functional equivalence* and also for wide usage of same within the maritime space.

[55] United Nations Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea
[56] as bill of lading refers only to the carriage of goods by sea.
[57] UNCITRAL means the United Nations Commission on International Trade Law, a legal body of United Nations which promotes and harmonize business (UNCITRAL 2018)
[58] UNCITRAL Model Law on Electronic Commerce with Guide to Enactment 1996 with additional article 5 bis as adopted in 1998.
[59] As far back as 1990 the Comité Maritime international (CMI) published Rules on Electronic Bills of Lading. In 2008 the United Nations adopted a new convention on carriage of goods by sea (the Rotterdam Rules), which allows for the use of e-B/Ls.

An e-B/L is workable through the use of Electronic Data Interchange (EDI) by necessary parties such as carriers, shippers, freight forwarders, financial institutions etc that are ordinarily involved in the transmission of a B/L. According to Sieg Eiselen[60], EDI is *"the electronic interchange of machine process able, structured data, which has been formatted according to agreed standards and which can be transmitted directly between different computer systems with the aid of telecommunication interfaces."* From the above definition, it is thus possible that a B/L can be electronically produced and transferred by means of EDI as the e-B/L is issued by a carrier and transmitted to the shipper and the said e-B/L contains the necessary statements as stated in Section 296 of NMC as if it were a paper B/L. In addition, the 2001 report of UNCITRAL stated that EDI documents(e-B/L) have the same legal validity as documents in writing(paper B/L).

In a nutshell, a B/L under the Hague/HVR is impliedly operative in its paper form for the purpose of its traditional functions since national and international contract laws were developed at a time when paper was the main stay of contract formation,[61] whereas, the RR recognizes an e-B/L as well as a B/L. This means that an e-B/L could be converted to a paper B/L and *vice-versa*.

3.3. Current Status of an Electronic Bill of Lading

Laws and Conventions usually regulate transactions, be it the usual paper contracts or legal transactions in an electronic form which give force to such transactions. The use of e-B/L as a form of electronic contract is a transaction which has been recognized by law but the ratification

[60] The electronic data interchange agreement .7 South Africa Merchantile Law Journal, 1
[61] Emmanuel Laryea, "Paperless trade: opportunities, challenges and solutions," *Kluwer Law International*, (2003): 33

of the Convention that has identified itself with this e-B/L is another area of concern; a current subject of debate.

As per UNCITRAL MLEC and CMI Rules on e-B/L, Comité Maritime International(CMI) in 1990, a non-governmental organization adopted its Rules for Electronic Bills of Lading. CMI Rules for e-B/L have been adopted as a comprehensive private legal framework granting freedom to parties as they apply only if parties agreed to incorporate the use of an e-B/L in their contracts. The importance of this Rules has also helped States like India in updating their laws. [62] Meanwhile, UNCITRAL on 12 June, 1996, adopted MLEC proposing a "*model for harmonized legal regimes that will facilitate communication and storage of digital information by ensuring functional equivalence, media neutrality and legal recognition and enforceability for electronic documentations and communications."*[63]

Both CMI Rules and UNCITRAL MLEC only encourage electronic commerce and analyze how e-B/L is operational with the aid of EDI and these frameworks have clarified the point that e-B/L has the functional equivalence of a traditional B/L. The other impediments of a B/L such as the following requirements: "writing", "signed" and "issued" have also been tackled.[64]

The concept of this "model law" is that, it is a specimen text designed to be used by national legislatures when preparing a new statute on the issue of e-B/L, which consequently aids the development and harmonization of international trade law. Article 16 of UNCITRAL MLEC

[62] The swiftness with which transactions could be completed through electronic medium led to its universal acceptance compelling the Indian Parliament to take note of the same and enact a law facilitating electronic commerce (IT Law of India)

[63] http://www.uncitral.org/uncitral/en/uncitral_texts/electronic_commerce/1996Model.html

[64] Article 11 CMI Rules 1990 states that electronic data is equivalent to writing while the following UNCITRAL MLEC Articles 6,7 and 8 provides for writing, signature and originals of e-B/L respectively.

Guide[65] states that: *"The Model Law does not attempt to define a computer-based equivalent to any kind of paper document. Instead, it singles out basic functions of paper-based form requirements, with a view to providing criteria which, once they are met by data messages, enable such data messages to enjoy the same level of legal recognition as corresponding paper documents performing the same function. It should be noted that the functional-equivalent approach has been taken in articles 6 to 8 of the Model Law with respect to the concepts of "writing", "signature" and "original" but not with respect to other legal concepts dealt with in the Model Law. For example, article 10 does not attempt to create a functional equivalent of existing storage requirements."*

The holistic reading of MLEC and CMI Rules evidences the fact that they have no force of law as[66] they are not enforceable, but are just a suggested framework to guide parties who choose to incorporate their terms in the contract and a guide for states as well[67]. In other words, they are not mandatory instruments but a model set of provisions dealing with electronic documents such as e-B/L for international trade.

The above background on the relevant legal frameworks on e-B/L shows that both the CMI Rules and UNCITRAL MLEC had played vital roles in the development of e-B/L for electronic commerce and also regulated the use of e-B/L. These preparatory works by UNCITRAL and CMI can be described as the pathway for the inclusion of Chapter 8 on Transport documents and electronic transport documents (e-B/L) into Rotterdam Rules, 2008.

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[65] UNCITRAL Model Law on Electronic Commerce 1996 with additional article 5bis as adopted in 1998 and Guide to Enactment

[66] United Nations Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea.(Otherwise known as Rotterdam Rules)

[67] Singapore was the first country in the world to implement the UNCITRAL Model Law on Electronic Commerce.

In spite of the efforts to having a uniform legislation on electronic commerce by updating the extant international Conventions on maritime affreightment and carriage of goods by sea, the efforts of UNCITRAL have not yielded enough success other than the fact that there was a signing ceremony by 25 States in 2009, with only 4 states having ratified same.[68]

The current state on the ratification of RR is equivalent to the fact that there is no international instrument regulating e-bills. Presently, there is no State that has incorporated e-B/L in her maritime law and because of no widespread use of e-B/Ls to date, any law reform exercise undertaken at the national level is likely to be somewhat of a shot in the dark.

This thesis is of the view that if States could adopt the UNCITRAL MLEC as well as UNCITRAL Model Law on Electronic Transferable Records(MLETR), which cover documents such as B/Ls in their statutes, then it would be very possible to legally recognize the capability of e-B/L as having the functional equivalence of its paper counterpart and consequently motivates signatories to ratify RR.

In the course of research, a report for the ICC[69] Banking Commission on "*the legal status of electronic bills of lading*"[70] was studied and this report is quite apt where maritime experts of 10 shipping States[71] were questioned on the status of e-B/L in their respective jurisdictions. The various responses showed that while few States have actually recognized the legal effectiveness, validity and enforceability of an electronic document in their legislations, some have not. A country like Brazil has enacted that "an e-B/L is a paperless tax document created to replace the need for issuance of multiple documents to cover domestic cargo transported within Brazil."[72] In

[68] https://www.rotterdamrules.com/content/introduction
[69] International Chamber of Commerce
[70] Clyde & Co. LLP 2018 ICC%20REPORT%20the-legal-status-of-e-bills-of-lading-oct2018.
[71] UK, USA(New York), Brazil, United Arab Emirates, Singapore, Germany, Netherlands, India, Russia and China.
[72] Supra note 70.

spite of the fact that the Brazilian legislation recognizes the validity of the e-B/L as having the same status of the paper B/L, by virtue of the aforesaid e-B/L Regulation[73], this recognition only applies to e-B/Ls issued and registered in the Brazilian Federal Revenue system, and it is yet to be established whether the Brazilian courts would also recognize e-bills issued abroad and outside the Brazilian e-B/L system.

Meanwhile, some State laws[74] do not recognize e-bills as having the same legal status as paper B/Ls either under their case laws or statutes. Although, there are no laws which expressly govern the operation of e-B/L traded through Electronic Trading System(ETS), it is arguable that the utilization of an ETS such as those approved and covered by the International Group of P&I Clubs and which appear to have substantial growth in acceptance and uptake amongst users (e.g. Bolero and essDOCS), will likely give e-bills traded through ETS a considerable legitimacy and credence in the eyes of the courts.

In order to confer legal recognition on e-B/L, there is a need to clear out the said uncertainties by incorporating specific provisions regarding e-Bills in the legislations affecting the carriage of goods by sea by the legislatures in few States like Brazil that have identified e-B/L in other areas. Despite the absence of the concept of e-B/L in Chinese legal system, there have been some experiments in the use of e-B/L operated by Chinese banks, the said initiative came from the banks in most circumstances and any party considering using e-B/L would negotiate with the banks to confirm if the banks are able to provide e-B/L service.[75] Most of the ten countries highlighted in the ICC report have some form of legislation allowing contracts to be created and

[73] "Ajuste SINIEF no. 09 in October 2007" (hereinafter referred to as "The Brazilian e-B/L Regulation")
[74] Singaporean law, English law, German law, Netherlands Law, Russian law, UAE Law, Indian Law, Chinese law
[75] ICC Report, 55.

signed electronically but only the United States of America has specific law currently supporting the use of e-B/Ls.[76]

In conclusion, the uncertainty associated with the global usage of an e-B/L in the contract of carriage of goods by sea is bound to be continuous in as much as the Rotterdam Rules do not come into force, and it would be quite challenging for maritime nations to have e-B/L enacted in their national maritime laws since there is no international Convention on e-B/L that can be domesticated.

3.4. Purpose of the Electronic Bill of Lading

The few highlighted problems associated with paper B/L in addition to the development of technology has caused a paradigm shift to replace the venerable B/L with an electronic instrument, that is, e-B/L. To understand the usefulness of e-B/L in the modern-day contract of carriage, it is important that carriers, shippers and cargo owners must be willing to work with an e-B/L that does not "look like" a paper B/L. More so, bill of lading users must be helped to understand the significance of allowing e-bills to have a shape of their own. Below are the enumerated benefits of an e-B/L:

- It can be sent around the world instantaneously, hugely lowering the administrative burden of trade (especially where cargo is subject to multiple transfers of ownership during carriage).
- Any amendments or corrections required in an e-B/L can be made far more efficiently and cost- effectively.

[76] Ibid, 7&23

- Electronic payment systems, and related advances in security, make an electronic system considerably more secure than its paper equivalent.[77]

These advantages associated with e-B/L will cut the administrative costs of trade significantly and reduce, if not eradicate, situations where carriers discharge their cargo against letters of indemnity and in theory the use of electronic shipping documents would also save both time and cost, as well as reducing the incidence of documentary errors.[78]

For the e-B/L to be legally and commercially effective, it must be unique and secured as its availability in electronic form may be greatly beneficial for facilitating electronic commerce by, for example, improving speed and security of transmission, permitting the re-use of data and automating certain transactions through "smart contracts".[79] Moreover, ETRs are a fundamental component of a paperless trade environment, which might make an important contribution to trade facilitation.

[77] https://www.lexology.com/library/detail.aspx?g=e8d0582f-89cb-4ee0-80a1-bd3549feaffc
[78] https://www.shiplawlog.com/2016/01/14/electronic-bills-of-lading/
[79] https://uncitral.un.org/en/texts/ecommerce/modellaw/electronic_transferable_records

4.0. The Rotterdam Rules, 2008

4.1 Analysis of Distinctive features of the Rotterdam Rules(RR)

This part focuses on the various improvements and innovations that the Rotterdam Rules have made to the regulation of the contract for the carriage of goods by sea which are absent in its predecessors as well as other conventions governing other modes of transport of goods by sea. These special features distinguish the RR and thus, maritime nations should embrace the importance of these innovations to international maritime and world trade. The Rotterdam Rules in many spheres lean more favourable towards the cargo side by ensuring that cargo interests do not suffer injustice when compared to its predecessors. Examples of such benefits are door-to-door approach, period of responsibility, basis of liability, increased limit of liability etc.

4.1.1. Door-to-door Approach in the new Convention

The Convention introduces the concept of the 'door-to-door' approach. This approach applies to the entire period of carriage of goods from the instance of delivery to the end of discharge at the receiving port. This improvement makes it hard for the carrier to escape liability, as there exists a single liability regime where the carrier is bound to exercise due diligence in the whole course of the carriage. This feature is commendable when compared to the provisions of the HVR which only deals with the classic "tackle-to-tackle transportation in that the carrier's liability is only during "*the period from the time when goods are loaded to the time when they are discharged from the ship.*"[80]

[80] Art. I(e) HVR (amend.1968)

It is important to know that there are other preceding Conventions[81] individually regulating other means of transportation such as road, rail, etc. Nonetheless, in order to prevent any conflict between RR and these other subsisting Conventions on the carriage of goods with regards to door-to-door transportation. The provisions of Articles 26[82] and 82, RR strongly recommend the application of the Rotterdam Rules to the door-to-door approach to evade any likelihood of conflict with the said preceding Conventions.

4.1.2. Whole/part Sea leg of the new Convention

The subsisting Conventions regulating the international carriage of goods only apply to a carriage of goods by sea, where B/Ls are issued. The new Convention by its title, "*wholly or partly by sea"* connotates that its application is not restricted to only carriage of goods by sea but with other modes inclusive. Furthermore, this title is evident in close connection to the "door-to-door approach" introduced in the new Convention.

Ordinarily, before goods are transported by sea in most cases, there is need for transportation by road or rail, usually from the factory/warehouse to the port of loading and this; the new Convention acknowledged by including multimodal transport as confirmed by Article 1(1) on the definition of a 'contract of carriage'.[83] This development is termed 'maritime plus'[84] approach

[81] International Convention concerning the Carriage of Goods by Rail, Convention on the Contract for the Carriage of Goods by Inland Waterway (CMNI), Convention on the Contract for International Carriage of Goods by Road (CMR), Montreal Convention.
[82] Art.26- Carriage preceding or subsequent to sea carriage while Art. 82- International Conventions governing the carriage of goods by other modes of transport.
[83] "the contract shall provide for carriage by sea and may provide for carriage by other modes of transport in addition to the sea carriage."
[84] Rhidian, 2009

since all carriages must include at least one sea leg. The discussion in 4.1.1 above and the provisions of Articles 26 and 82 of RR therefore suffice on this improvement.[85]

4.1.3. The Period of Responsibility of the Carrier

The Carrier's period of responsibility "*begins when the carrier or the performing party receives the goods for carriage and ends when the goods are delivered*".[86] This is a drastic deviation from the meaning established by HVR, where the period of responsibility applies only between loading and discharge-"tackle-to-tackle."[87] The scope of Article 12 RR is comparatively genius as it broadens the period of responsibility for both the carrier and performing party under the present regime, especially Article 12(3) which provides that: "*for the purpose of determining the Carrier's period of responsibility, the parties may agree on the time and location of receipt and delivery of the goods, but a provision in a contract of carriage is void to the extent that it provides that:....."*

4.1.4. Basis of Liability

The carrier's liability is the core of the Rotterdam Rules,[88] as the Convention has done away with some of the exceptions in Hague/HVR and the Hamburg Rules. The most controversial is the "nautical fault" exclusion for any "act, neglect or default of the master... in the navigation or in the management of the ship."[89] This important exclusion in Article IV, Rule 2(a) HVR[90] previously exercised as a defense is no longer available to a carrier and he would be liable for

[85] Christopher Hanock, Multimodal transport under the Convention, 34
[86] art. 12, RR
[87] Carriage of Goods by Sea Act, ch. 19, art.I(e) [Eng.]
[88] Jan Ramburg, Ctr. On U.N Convention on Contracts for International Carriage of Goods Wholly or Partly by Sea (2008) available at http://www.cmi2008athens.gr/sub3.3.pdf
[89] Stephen Girvin, Carriage of Goods by Sea 365 (1st ed. 2007).
[90] *"Neither the carrier nor the ship shall be responsible for loss or damage arising or resulting from act, neglect, or default of the master, mariner, pilot, or the servants of the carrier in the navigation or in the management of the ship."*

any nautical or navigational fault. Another similar exception that carriers have utilized countless times to evade liability, is the concept of 'initial seaworthiness' observed under Art. III Rule 1(a) HVR,[91] has been modified by Art.14(a) RR as follows: *"the carrier is bound before, at the beginning of, and during the voyage by sea to exercise due diligence to make and keep the ship seaworthy."*

Another important exception is the Hague-Visby "catch-all," which is usually invoked where the carrier is unsuccessful in raising other exceptions.[92] The catch-all provision has equally been modified to be used as the main provision of liability for the carrier under Art. 17(1) RR.[93] In order to establish the carrier's liability, the claimant by virtue of Article 17(2) RR, can prove that the cause of damage is attributable to one of the exonerating events listed in Art. 17(3).

4.1.5. Increased limit of liability in the Rotterdam Rules

The scope of application of the limit of liability of the carrier has been widened under the RR. While Article 59 covers generally, breaches of the carrier's obligations under the Rules, there are also specific provisions dealing with other responsibilities of the carrier such as timely delivery of the goods in the same quantity and conditions existing at the time of receipt. Articles 35-36, 40, 45-47,52 are the governing provisions that would incur liability on the carrier.

For the purpose of clarity, the obligation that has been breached by the carrier must relate to the goods, since the limits pursuant to article 59(1) RR referred to the goods *"that are the subject of the claim or dispute"*. The limits under the HVR, **666.67 Special Drawing Rights (SDR)[94]** per

[91] "*The Carrier shall be bound before and at the beginning of the voyage to exercise due diligence to make the ship seaworthy."*
[92] art. IV(2) Hague-Visby Rules
[93] Francesco Berlingieri, Background paper on basis of the carrier's liability, Comite Mar. Int'l Y.B.144 140 (2004): 144
[94] Art. IV, 5(a)

package or unit and **2 SDR** per kilogram, were increased in the Hamburg Rules to **835 SDR** and **2.5 SDR**[95] respectively and have been further increased in the Rotterdam Rules to **875 SDR** and **3 SDR.**[96]

The limit for economic loss due to delay, that is not mentioned in the HVR under which liability for delay is not regulated, is under both the Hamburg Rules[97] and the Rotterdam Rules[98] two and one-half times the freight payable in respect of the goods delayed.

The scope on *locus standi* in the RR is wider, since it covers any action that may be brought by a shipper or consignee against the carrier, a performing party or any other party and vice-versa under the Rules. The limitation period for institution of action against the carrier or a performing party is two years under the Rotterdam Rules[99], same as the Hamburg Rules[100] while the HVR[101] provides for one year.

4.1.6. Analysis of Electronic bill of lading under the Rotterdam Rules.

During the drafting of this new Convention by UNCITRAL, there was a common understanding that any new instrument regulating the carriage of goods by sea should address the use of electronic means of communication under the contract of carriage.[102] The Rotterdam Rules(RR) is the first international Convention for the international carriage of goods by sea to endorse certain provisions on electronic means with the agreement that the new instrument must facilitate

[95] Art. 6 Rule 1(a)
[96] Art.59(1)
[97] Art.6 Rule 1 (b)
[98] Art.60
[99] Art. 62(1)
[100] Art.20(1)
[101] Art.III Rule 6
[102] The work initially addressed substantive issues, including liability-related questions and the regime of documents, and the need for contemplating the use of electronic means and electronic transport documents was soon raised and taken over by the CMI. Comite Mar. Int'l, The Travaux Preparatoires, Draft Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea, http://www.comitemaritime.org/draft/draft.html (last visited Feb. 18, 2009).

and be compatible with e-commerce; simple; be medium and technology neutral; and have regard to CMI Rules on E-Bills,1990, UNCITRAL MLEC, 1996 and UNCITRAL Model Law on Electronic Signatures, 2001.[103]

The fundamental lines of the regulation contained in the final proposed text follow e-commerce principles, the basic concern of which is to equalize all formal means or instruments, whether on paper or in electronic form, with the aim of providing storage and exchange of information in writing.[104]

The most outstanding feature of the Convention in relation to e-commerce rules, is the provision of the legal basis for the use of electronic means with the same effect and equal treatment as those granted to paper documents, that is, the issuance of negotiable electronic transport records. According to Article 1(15) RR, "negotiable electronic transport record" means an electronic transport record: (a) *That indicates, by wording such as "to order", or "negotiable", or other appropriate wording 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";* and (b) The use of which meets the requirements of article 9(1).

The Convention provides the basis for the recognition and use of electronic negotiable transport records by stating the conditions for parity between such records and paper documents, based on

[103] Martin-Clark, "Electronic Documents and Rotterdam Rules," 290.

[104]The set of legislative policy principles universally accepted as properly guiding the changes to be introduced in the law for achieving media neutrality, and thereby enabling the use of electronic means with legal validity and effect, consist essentially of the non-discrimination principle, the functional equivalence approach, the technological-neutrality principle, the principle of non-alteration of pre-existing substantive law, as well as the principles of party autonomy and good faith.; Gabriel, supra note 5, at 311-312 (discussing the functional-equivalent approach); RAFAEL ILLESCAS ORTIZ, DERECHO DE LA CONTRATACION ELECRONICA 40, (2001). Since initial discussion of e-commerce rules, the Rotterdam Rules and other previous drafts have followed these principles. See Comite Mar. Int'l, Singapore I, Report of the E-Commerce Working Group (2001), available at http://www.comitemaritime.org/singapore/issue/issueecojrep.html (illustrating the evolution of legislative policy principles).

the principles relied on by e-commerce rules and the application of the functional equivalence approach. Art.4(d) of the CMI Rules on Electronic Data Interchange refers to the so-called *principle of functional equivalence*-by which electronic documents are deemed to have the same effect in law as their paper counterparts and reads as follows: *"... shall have the same force and effect as if the receipt message were contained in a paper bill of lading."* and Art.3 RR recognizes the concept of equivalence while Art. 8 is the principal equivalence article titled " *transport Use and effect of electronic records."*

In brief, all functions of negotiable electronic transport records are materially provided for to the same extent as for paper transport documents as the text sets the level of desirable uniformity for both paper and electronic documents.

The Rotterdam Rules have modernized the scope of maritime transport by introducing provisions on ETR, that is, the regulation of the electronic alternative to the transport document which has been achieved through the addition of a short chapter 3. Chapter 3 provides for equal value of transport documents and their electronic equivalent, the ETR; setting out the basic conditions for the use of ETR, while Art.10, RR recognizes the rules governing the replacement of negotiable transport document with a negotiable electronic transport document and *vice-versa*, whereby reference to the ETR are contained in (Articles 8, 9, 10, 35, 36, 37, 38, 39, 40, 41, 45, 47, 51, 57, 58 RR).

The Convention also sets up two types of electronic alternatives to paper documents: the negotiable electronic transport record, which is equivalent to the negotiable B/L, and a non-negotiable electronic transport record, tantamount to a sea waybill.[105] When these alternatives are

[105] Miriam Goldby, "*The electronic alternatives to transport documents: a framework for future development,* 14 Journal of Maritime Law &Commerce 14 (2008): 586.

viewed critically, they may produce the same effect at law as their paper counterparts, in as much as they comply with the electronic alternative requirements.

Art. 8, RR governs electronic transport records and the scope seems broad, as it states that *"[a]nything that is to be in or on a transport document under this Convention may be recorded in an electronic transport record...."*. The definition of electronic transport document is potentially wide enough to include both negotiable and non-negotiable ETR, whilst the definition of an electronic communication allows parties to use electronic means to make any declarations or communication required to be in writing.[106] That is, ***"'Electronic communication' means information generated, sent, received or stored by electronic, optical, digital, or similar means with the result that the information communicated is accessible so as to be usable for subsequent reference."***[107]

The Convention in art.8(a) recognizes *"consent"* as an important pre-requisite for the use of electronic alternatives to paper documents and as such, if the carrier and the shipper give their consent, electronic records would be equivalent to paper documents for all intents and purposes.

Another crucial element under the Convention for the use of ETR is "*exclusive control,"* whose essential function is to determine the condition of the holder, and therefore his entitlement to the delivery of the goods as well as to the exercise of other rights.[108] In understanding art.9 RR, exclusive control puts forward a requirement, which was first mentioned in UNCITRAL's MLEC, that only one person should be able to lay claim to the rights conveyed by ETR at any

[106] Manuel Alba, Electronic Commerce Provisions in the UNCITRAL Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea, TEX. INT'L L.J. 44 (2009): 397
[107] Art. 1(17) RR.
[108] Art.9 RR

one time, namely the "*guarantee of singularity*".[109] Therefore, this remains an important requirement that electronic processes need to satisfy before their ability to replicate the bill of lading's function as a document of title.[110] The importance of the exclusive control requirement can be found in the bill of lading's function, whereby the holder can exercise rights against the carrier and over the goods themselves.[111] This precondition would strive to provide protection to all parties involved in a transaction, and failure to satisfy this would result in the carrier facing a situation where he would be dealing with competing delivery requests from various would-be holders.[112]

As with a paper B/L, the rights and liabilities under the contract of carriage may, where the Convention applies, be transferred using a negotiable ETR by virtue of Art. 57 and finally, the negotiable ETR would be capable of transferring constructive possession of the goods through the application of the Convention's provisions on (a) transfer of the right of control(Article 51(4)) and (b) right of the controlling party (i.e. the holder) to obtain delivery-Article 50(1)).

The singularity requirement of an e-B/L has been said to be satisfied in practice through the use of a registry system of rights and liabilities. Two main proposals on this issue are: first, the CMI Rules are based on a private registry system, which fulfills the exclusive control requirement through a code called the 'Private Key' which is known only to the shipper and the carrier and which is cancelled and replaced by a new Private Key when the bill is transferred to a new holder. The e-B/L works in such a way that the shipper,[113] a person who enters into a contract of

[109] Article 17(3) UNCITRAL MLEC; paragraph 115 of the Guide to Enactment 1996, U.N. Sales No. E.99.V.4 (1999).
[110] Goldby, "*The electronic alternatives to transport documents,"* 588.
[111] Ibid. 589.
[112] Ibid.
[113] art. 1(8) RR

carriage with a carrier(Company A) will supply all the relevant information[114] to be contained in the e-B/L to the carrier.[115] Once the cargo boards the vessel, the carrier digitally signs a data message, which would take the form of an e-B/L.[116] The carrier's message would be decoded by a public key of the same key pair.[117] The shipper is given access to the private key to monitor the cargo during carriage and to endorse the bill to a third party (Company B) by digital signing and transmission to the carrier. Since Company B will have access to the private key, it can further endorse the e-B/L to Company C.[118] This process can continue until the cargo is claimed at the port of discharge by the party in control of the most current private key.[119] The party holding a valid private key and proper identification will be entitled to the delivery of the cargo.[120] It is obvious that this electronic process ensures efficiency, accountability, and most importantly, accuracy. The Rules for Electronic Bills of Lading need to be applauded since the digital bill is flexible as the paper bill because it can also be transferred, amended, or surrendered.[121] The second is the Bill of Lading Electronic Registry Organization (BOLERO) system, which records the issue and transfer of rights in a central registry, thus ensuring that the holder can be identified at any point in time by consulting the registry records.[122] There are several papers written on these two systems,[123] however, little description of the registry system would suffice.

[114] Comite, Int'l, Rules for Electronic Bills of Lading, art. 4(b) (i)-(v), http://www.comitemaritime.org/Rules-for-Electronic-Bills-of-Lading/0,278, 12832,00.html [hereinafter Rules for Electronic Bills of Lading]. Message content shall include (1) name of the shipper; (2) the description of the goods; (3) date and place of the receipt of goods; (4)reference to carrier's terms and conditions; (5)private key to be used in subsequent transactions.
[115] art.1(5) Rotterdam rules
[116] art. 11 Rules for Electronic bills of lading
[117] art 8 ibid.
[118] art 7 (a) -(b) Rotterdam Rules.
[119] art. 8(a) Rules for Electronic Bills of lading
[120] art. 9(a)-(b) ibid.
[121] art. 7 (a)-(d) ibid.
[122] Goldby, "Electronic alternatives to transport documents: a framework for future development," 231.
[123] for example, Kelly, Richard Brett, "The CMI charts a course on the sea of electronic data interchange: Rules for Electronic Bills of Lading," *Tulane Maritime Law Journal* (1991-1992): 349.

Bolero[124] is the pioneering organization on the concept of e-B/L. While some States failed to acknowledge the e-B/L, Bolero achieved the functionality of e-B/L by requiring all its users to subscribe to a multi-party contract, called the Bolero Rule Book. This ensures by contract the equivalence of electronic messages in prescribed formats to the standard functions of a paper bill of lading-receipt for the goods, evidence of the contract of carriage and transferability of the right to claim possession of the goods from the carrier at the port of discharge/place of destination. While the BOLERO B/L was efficiently used in certain trades for few years, its greatest drawback was the need for every person in the trading chain to be a subscriber to the Bolero system and in particular, a party to the rule book led to its withdrawal by parties.

Due to withdrawal from Bolero, another provider called Electronic Shipping Solution[125] (ESS) gained its way to the market, assumed to be working with the oil industry to gain its ground. ESS offer an electronic document exchange, called ESS-Databridge™, which allows its users to draft, share original electronic "documents", transmit and endorse them. It replaces ownership of a paper-based document of title with access rights to an original electronic "document" stored within the ESS Exchange.[126]

It is important to also consider whether the existing systems of BOLERO, EssDocs and E-title discussed above are on the same pedestal with the regular paper B/L in terms of their contents and functions already recognized at law. The basic features of a B/L are the notions of "writing", "document" and "signature", and these terms were adopted when there was no conception of electronic communications replacing paper document. This issue is not far-fetched when the systems are analyzed within the pre-existing Conventions. There is no provision of either the

[124] known as "bolero.net."
[125] http://www.essdocs.com
[126] Martin-Clark, "Electronic Documents and Rotterdam Rules," 293.

Hague/HVR or Hamburg Rules expressly requiring that a bill of lading be evidenced in or by writing on a paper, although articles 3(3)(a) & (b) and 3(6) HVR impliedly tilts towards writing and document. Meanwhile, art.14(3) of Hamburg Rules makes room for electronic signature which points to the acceptance of electronic documentation or e-B/L and was further reinforced by including "*inter alia*, telex and telegram" in art.1(8).

On the issue of the traditional functions of a B/L in testing the capability of e-B/L a*s per the doctrine of functional equivalence*, e-B/L fulfils the receipt function through data prepared in respect of the shipment based on earlier information from the shipper or his or its agent who acknowledges the receipt of goods.[127] Regarding the function of evidence of the contract of carriage by e-B/L, Dubovec has argued that "the receipt and evidence functions of a contract of carriage may easily be performed by electronic means because they are essentially the transfer of information".[128] A bill of lading has two prominent features: it's negotiability and acceptability as a document of title in certain legal jurisdictions for it to be retained as an e-bill. The function of a bill of lading as a document of title appears to be the major obstacle facing the existing systems of e-B/L which has affected maritime players to willingly accept e-bills since both the CMI Rules and MLEC do not provide for any concrete procedure on how these systems can achieve this title-document function. However, it can be said that the most successful way by which the document-of-title function has been ascertained by e-Bills is through the registry system and the use of private and public key mechanisms set up by these systems.[129] The existing systems have

[127] Stephen Chukwuma, "Can the functions of a paper bill of lading be replicated by electronic bill of lading?" *Public Policy and Administration Research,* 3, 8(2013):104.
[128] Marek Dubovec, "The problems and possibilities for using Electronic bills of lading as collateral," *Arizona Journal of International and Comparative Law* 23, 2 (2006): 448.
[129] Miriam Goldby, "Electronic bills of lading and central registries: what is holding back progress*?" Information and Communications Technology Law* 17, 2 (2008): 126.

also fallen short of wide acceptance due to their closed network operation, since usage of the systems' platforms require membership subscription and also, the adoption of title registries.

Having analyzed how the new Convention regulates e-B/L in fulfilling the functional equivalence of a B/L and the inadequacy of the existing systems, it is equally essential that other systems that can operate as e-B/L as well as new blockchain technology be examined here. There are alternative ways of satisfying the exclusive control requirement of an e-B/L which may also be developed through the use of Digital Rights Management (DRM) technologies. These technologies are currently being used by various industries such as record and publishing companies for the protection of their intellectual property rights.[130] However, DRM technology also has features that may allow its adaption to protect rights normally symbolized by or contained in a document of title such as the B/L. DRM technologies are used in order to build rights specifications into a digital file such that the file itself can only be used and the information contained in it can only be accessed in accordance with those specifications.[131] These specifications could allow ETR to be used in the same way as a paper document, as the rights' specifications would limit what could be done with the record, due to the fact that it is in an electronic form and could provide a means of granting exclusive control over the record to a single person at any one time.[132] Since the provisions of the new Convention were drafted in such a way as to dictate the result to be achieved, it thus allows for future developments such as the adaptation of DRM technology for this purpose.

More so, it is often said that the development of systems for e-B/L such as BOLERO is quite old and consequently, the industry demands new methods and standards of e-B/L; and

[130] Rosenblatt, Trippe and Mooney., *Digital Rights Management: Business and Technology*, 30.
[131] Ibid.
[132] Ibid.

correspondingly, designing a web based system to secure electronic communications is something that most businesses do nowadays. In practice, many carriers have their own websites through which they make available to clients, systems for tracking cargo and communicating instructions.[133] These systems are now also being used by liner carriers such as American President Lines (APL), to make available B/L which are electronic for part of their lives, instead of being issued in paper form to the shipper of the goods and they may subsequently be printed 'remotely' by the pledgee or the consignee of the goods to whom they are 'delivered' electronically.[134]

It may seem that the procedures set out in Art.9 of RR are being met by both BOLERO Rule Book and the ESS-Databridge™ Services and Users Agreement. However, there are new technology upgrades on the e-B/L, such as blockchain technology that diminishes some of the issues related to closed networks, and title registries associated with BOLERO and ESS. It is thereby vital to look into this new development and examine its capability to fit as a B/L(blockchain-based bill of lading).

The emergence of Blockchain technology's popularity was after the introduction of the crypto currency, Bitcoin in 2009. According to an online resource, "*Blockchain is a public electronic ledger built around a P2P system that can be openly shared among disparate users to create an unchangeable record of transactions, each time-stamped and linked to the previous one.*"[135]

Blockchain can only be updated by consensus between participants in the system, and once new data is entered, it cannot be deleted or altered and this makes it possible to trade tokens online on

[133] Goldby, "A re-assessment of the CMI rules for electronic bills of lading, " 56.
[134] Ibid.
[135] https://www.computerworld.com/article/3191077/what-is-blockchain-the-complete-guide.html

a peer-to-peer basis and hold them without the involvement of intermediaries.[136] Similarly with EDI, each transaction is secured by a digital signature, which ensures that the identity of the transferor is authentic, unique and genuine.

Although, the blockchain technology[137] came into being after the adoption of the Rotterdam Rules in 2008 and one might argue that they would still need the support of an applicable legal system. May it be stated at this juncture that RR is flexible enough to accommodate and govern the use of new electronic means for a considerable period of time subject to the ratification of same. In addition, Model Law for Electronic Transport Record(MLETR) provides for general rules that apply to various ETRs, including models based on tokens and distributed ledger or other technology, cf. MLETR art. 1.[138] Thus, the MLETR facilitates the use of e-B/Ls based on blockchain technology and the principle of technology neutrality being a guiding principle of RR, provides a subtle ground for the development of new blockchain B/L.

In addition, Professor Koji Takahashi had suggested that blockchain technology is highly capable of guaranteeing that "tokens" on a blockchain ledger functions like a negotiable document, which entitles the rightful holder to claim performance of the obligation prescribed therein.[139] This would enable the carrier to issue an e-B/L in the form of a token on a blockchain ledger which represents the right to demand delivery of the goods. Since the technology makes it impossible for the record to be altered or the electronic records being copied down from the

[136] this being a huge difference with the existing models of electronic bills of lading which are invariably based on a closed system with a central registry.

[137] Michael Sturley, Tomotaka Fujita and Gertjan Van den Ziel, *The Rotterdam Rules: The UN Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea* (London: Sweet & Maxwell 2010), para 3.039 states that: 'it appears that the technology needed for a reliable token system is still not available in the market place'.

[138] http://www.uncitral.org/pdf/english/texts/electcom/MLETR_ebook.pdf - Explanatory Note to the UNCITRAL Model Law on Electronic Transferable Records(MLETR), Article-by-article commentary.

[139] https://www1.doshisha.ac.jp/~tradelaw/PublishedWorks/BlockchainTechnologyElectronicBL.pdf - Blockchain technology and electronic bills of lading

negotiating chain, there is no need for any third party to supervise the transactions in order to keep track of who the holder is, as the record itself would be passed down on a negotiation chain untouched.[140]

The possible use of blockchain technology in the maritime transport industry is to circulate a token that functions like a transferable document, meaning a document which entitles the rightful holder to claim the performance of the obligation indicated in the document. The token may then be transferred to the seller and thereafter to the subsequent buyers on the blockchain. The guarantee of uniqueness, an essential feature of transferable documents, makes the latter an attractive use of blockchain technology.

One of the principles guiding UNCITRAL in its work on the Rotterdam Rules and the Model Law is the principle of technology neutrality, which means that the law should neither require nor assume the adoption of a particular technology.[141] It follows that no technology is excluded *a priori* and in this vein, blockchain technology will not be excluded, although nowhere in the official documents on the Model Law project was there any reference to it until as recently as November, 2015.[142]

A blockchain-based bill of lading being able to fulfill the essential function of a B/L can also replace a paper B/L based on the principle of functional equivalence. This is manifested in Article 9 RR, according to which the use of a 'negotiable electronic transport record' is subject to the procedure referred to in the contract of carriage, which must provide for:

(a) the method for the issuance and the transfer of the record to an intended holder;

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[140] http://www.uncitral.org/pdf/english/congress/Papers_for_Programme/30-TAKAHASHIImplications_ of_the_Blockchain_Technology_and_UNCITRAL_works.pdf - Implications of the Blockchain Technology for the UNCITRAL Works

[141] Secretariat 'Legal issues relating to the use of electronic transferable records' A/CN.9/WG.IV/WP.115 (2011) para 35.

[142] Secretariat 'Report of Working Group IV (Electronic Commerce) on the work of its fifty-second session (9–13 November 2015)' A/CN.9/863 paras 24, 49. The Model Law project began in 2011.

(b) an assurance that the record retains its integrity;

(c) the manner in which the holder is able to demonstrate that it is the holder; and

(d) *the manner of providing confirmation that delivery to the holder has been effected or that the record has ceased to have any effect or validity.*

Hence, a blockchain-based bill of lading whose system is configured in such a way that it can be transmitted to the carrier upon the delivery of the goods, in much the same way that a paper bill of lading would be physically surrendered in compliance with the requirement in art. 9(d) above would definitely pass to be used for e-commerce transaction. A blockchain-based token is also subject to exclusive control since it is under the control of the holder of the private key corresponding to the address where the token is kept since no two persons could claim to hold the same token.[143]

In contrast to the existing systems based on the central registry model, blockchain technology has made the guarantee of uniqueness possible in a decentralized system. Transactions take place peer-to-peer(P2P) on an open platform where no prior subscription to membership is required.[144] This openness also ensures worldwide reach of the participants, while decentralization eliminates human errors that might otherwise be made by the registry administrator and likewise, renders the system less vulnerable to accidents or hacking attacks since there are no single points of failure.[145] This thesis also opines that a blockchain based bill of lading does satisfy the general requirements that merit a document to be termed B/L. This is in view of critical analysis of the entire operation of blockchain technology *viz-a-viz* the relevant provisions in the RR as discussed above.

[143] Takahashi, "Blockchain technology," 203
[144] Ibid., 205
[145] Ibid.

In summary, analysis of existing e-B/L systems as well as blockchain technology has shown that they are capable of fulfilling the guiding principle of functional equivalence upon which the paper-based B/L is found. In fact, in as much as art.9 RR has clearly spelt out procedures for the functionality of any system to operate as a negotiable electronic transport record, same should be embraced by the industry for development of international trade.

4.2. The Need for Ratification of Rotterdam Rules

The United Nations Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea, also known as Rotterdam Rules (RR), was adopted on 11th December, 2008, under the auspices of United Nations Commission on International Trade Law(UNCITRAL).[146] Although the text of the Convention has been signed by 25,[147] only 4 countries: Cameroon, Congo, Spain and Togo[148] have since ratified same. The intention of adopting the RR was to replace the outdated Hague/HVR, which were considered inadequate for fulfilling the needs of modern trade, and the Hamburg Rules, which have proved unpopular with the maritime nations. Significantly, the Rotterdam Rules embody contemporary and uniform regulations for modern container shipping and include innovations that the current international shipping regime lacks.

[146] The Comite Maritime International(CMI) conducted the preparatory work on the Convention at the request of UNCITRAL including a preliminary draft text for the Convention. Cf. www.rotterdamrules.com

[147] The signing ceremony was held in Rotterdam from 20-23 September, 2009. The following countries have signed it: Armenia, Cameroon, Congo, Democratic Republic of Congo, Denmark, France, Gabon, Ghana, Greece, Guinea, Guinea-Bissau, Luxemburg, Madagascar, Mali, the Netherlands, Niger, Nigeria, Norway, Poland, Senegal, Spain, Sweden, Switzerland, Togo and the United States of America, all together representing 25%of the world's trade.Cfwww.rotterdamrules.com

[148] https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/overview-status-table_3.pdf while Spain is the only European Country so far, the other 3 are African countries.

The Rotterdam Rules have a broad geographical scope of application, differing from the other Conventions and also contrary to HVR[149] and Hamburg Rules,[150] the Rotterdam Rules equally do not include the agreement of the parties as a connecting factor. The Rotterdam Rules adopted a mix of the documentary approach employed by the HVR and the contractual and documentary approach utilized by the Hamburg Rules.

Originally, the intended rationale behind the Rotterdam rules was to be more than a port-to-port instrument,[151] but after considering the current international multimodal gap and the reality that the increased door-to-door containerized trade or multimodal carriage contracts have become the norm instead of port-to-port contracts, the drafters decided that this new instrument had to be 'unimodal plus'[152]. As a result, the Rotterdam Rules winded up regulating the whole of a contract of carriage which comprises a sea leg, including the stages that are to be performed by road, rail, air and inland waterway.[153] As highlighted by Hoeks, this new approach is not exactly a new concept, since it is common practice in the transport industry to try to extend the scope of the sea carriage Convention to other modes through the use of paramount clauses[154] and as a matter of fact, courts have often enforced contractual clauses that extend maritime regimes inland.[155] Also, attention must be drawn to the fact that the Convention does not require the non-sea leg to be ancillary to the sea part, which can even be shorter than the eventual non-sea leg.[156]

Currently, the Rotterdam Rules are not yet in force as the ratification process is yet to be attained as required by Art.94(1) which provides that "*this Convention enters into force on the first day of*

[149] The Hague Rules refers only to the place where the bill of lading is issued and the HVR refers, in addition, to the state where the carriage has begun.
[150] The Hamburg Rules refer to both port of loading and port of discharge
[151] This replacing the HVR and the Hamburg Rules.
[152] Hancock, "Multimodal transport and the new Convention on the carriage of Goods," 484.
[153] Hoeks, "Multimodal carriage with a pinch of sea salt," 2.
[154] Hoeks, "Multimodal Transport Law," 335.
[155] Sturley, "Transport Law for the Twenty-first century,".32.
[156] Hoeks, "Multimodal Transport Law," 335.

the month following the expiration of one year after the date of deposit of the twentieth instrument of ratification, acceptance, approval or accession."

Many provisions in the new convention were included either to preserve the jurisprudence that has developed during decades of experience with Hague and HVR[157] or to avoid any implication that changes may have been intended by the deletion of a well-known provision and even the entire new provisions were written with an eye on the years of practice under the existing regimes.

The primary goal of the RR was to update transport law for the twenty-first century and also for electronic commerce to be visible on the horizon. While issues concerning transport documents and electronic transport records that have created real problems in practice were not included in the subsisting Conventions, the paramount need to update and improve the law to facilitate electronic commerce explains a large share of the new subjects covered by the Rotterdam Rules. The maritime industry is moving in the direction of greater e-commerce, but the current law impedes that progress to the extent that the law fails to furnish a framework that provides an adequate basis for e-commerce. Hence, chapter 3 of Rotterdam Rules takes an important step by permitting the use of ETR if the parties wish to use them, but that only solves part of the problem.

The philosophy of the Rotterdam Rules was to improve the law so that it can better do the job that it is supposed to do in facilitating maritime commerce. The Convention would have a significant impact on the carriage of goods based on the highlighted points above if ratified and it

[157] Article 17(3), for instance, preserves most of the familiar catalogue of defenses that were originally included in art. 4(2) of the Hague Rules-despite strenuous arguments from civil law delegates that such list was completely unnecessary. The Nordic countries have gone so far to eliminate most of the catalogue from their domestic Hague-Visby legislation on the ground that it is unnecessary. But UNCITRAL for the most part retained the catalogue on the grounds that it did no harm in countries in which it was unnecessary and provided a real benefit in those countries that had a well-developed jurisprudence under the catalogue.

is poised to boost the volume of maritime trade. More so, the focus of the Rules is skewed toward developing countries which are extensively developing their international trade and relying on the Convention to fuel their economic growth.

The inclusion of negotiable electronic transport records is the novelty that will probably arouse heightened expectations and foster the full implementation of electronic negotiation of goods in transit in an absolutely paperless environment. In addition, the problems experienced with B/Ls due to the need to produce the document to collect the goods will certainly be overcome with the advent of electronic negotiable documents, which can be exchanged and processed more quickly.

Meanwhile, the absence of powerful economies such as Australia, Canada, China, Germany and the United Kingdom from the list of signatories underlines the challenge ahead to get the entire world to rally behind the Convention. In the event that the international community rejects the Rotterdam rules, what the international trade community will see is the continuation of the current confused patchwork system of mandatory instruments.

Paper documentation is very expensive while having a cursory glance at the statistical record which reveals that seven percent of the annual cost of international trade is wasted on paper based administrative processes.[158] The call for ratification will also help to overcome the challenges facing B/L (paper based documentation is not only expensive, time consuming, and susceptible to fraud , but also prone to human error.)[159] Therefore, if the Convention were ratified, it would lay down the first statutory framework for electronic transport records in

[158] U.N. Econ. &Soc. Council, Comm. on Managing Globalization, *Working Paper: Economic &Social Commission for Asia and the Pacific,* 2-5, U.N.Doc/E/ESCAP/CMG/4, 1st Sess. (Oct.27, 2003), available at http://www.unescap.org/tid/mtg/postcancun_cmg5a.pdf

[159] Chan, "In search of a global theory of maritime electronic commerce," 187.

English Law. The e-commerce provisions would modernize the use of electronic transport documents by shortening the processing time, and fewer errors would help save costs.

One cannot deny the Convention's contribution in laying a framework on electronic alternatives to paper documents. The provisions on electronic transport records pave the way for their future development by making the law more flexible and allowing for a diverse system to be set-up according to customer demand and once the Convention is implemented, it is capable of making a considerable impact on the electronic alternatives to paper transport documents. Since the Convention lays down comprehensive rules on almost all documentary aspects, it ensures uniformity and certainty in an area that has been influenced by diverse national rules and court decisions. Incorporating provisions on e-commerce would definitely benefit the parties to a contract, particularly, the shipper and the carrier, who would be able to communicate and seek information efficiently and effectively. In the aggregate, ratifying the Rotterdam Rules would create the opportunity to recapture the international uniformity that existed in the maritime field 70 years ago when Hague Rules was adopted.

There is therefore a wake-up call to all signatories present in Rotterdam on 23rd September, 2009 to consummate the efforts of UNCITRAL by ratifying the Convention at this crucial point in time. This thesis states that there must have been deliberation by States at their various national legislative fora on their stance as to the issue of ratification and so, the Commission should know their respective decisions in finding a way forward. It is a known fact that the Convention is not without its flaws as stated in different literature reviews, but even at that, the Convention ought be ratified solely for purpose of wide usage of electronic bills of lading internationally in the 21st century of maritime trade.

5.0. Conclusion

This thesis has embarked on a long journey by tracing the evolution of paper-based bills of lading in the olden days to the current anticipation for the use of electronic bills of lading in the twenty-first century maritime trade for the purpose of e-commerce. The doctrine of functional equivalence that distinguishes B/L from other transport documents at its inception has also been considered to measure the compatibility of e-Bills with the traditional paper B/L when tested with the so-called principle.

The available Conventions for the operation of B/Ls at the international trade level which member States; who are parties to the Conventions have subsequently domesticated in their national laws, as well as the most recent Convention(the Rotterdam Rules) which States had signed but not ratified have also been extensively examined. Various e-B/L solutions, inclusive of a new development called blockchain technology[160] have been discussed in addition to how these systems satisfy the guiding principle of functional equivalence for their acceptance.

When the Rotterdam Rules are comparatively viewed with the other subsisting Conventions on the carriage of goods by sea, it can be asserted that the Rotterdam Rules are the proposed solution to the severance of sea carriage laws and the disparity of having Hague-Visby Rules and Hamburg Rules States would be put to rest. In other words, the Rotterdam Rules will replace HVR and Hamburg Rules and the law of carriage of goods of sea can regain its uniformity as it was when the Hague Rules was adopted in 1924.

This thesis is mindful of the fact it is a usual norm for any Convention not to satisfy all acting participants and that the Rotterdam Rules are not without its flaws, as it is being argued by carriers that the Rotterdam Rules are cargo interest friendly and it is this sole concern that has

[160] (which could better cater for the use of e-B/Ls rather that the pre-existing systems)

probably hindered its ratification or to even having some States signed it. It is however stated here that a critical review of the entire Rules or a second eye for the Rules would reveal that the Convention also benefits the carriers more in relation to the topic of discourse in the sense that, when an electronic bill of lading is deployed in a maritime contract, the delay of getting the B/L readily available for the delivery of the cargo at the place of delivery would have been eliminated,[161] as well as the benefits attached to e-Bills in outright comparison to the paper-based bills of lading.

In the light of the following, this work would be concluded by making few remarks on the body of the thesis by reflecting on the topic *"Introduction of Electronic Bill of Lading to the Contract of Carriage of Goods by Sea: The Need for Ratification of Rotterdam Rules, 2008."* In essence, this thesis centers on electronic bill of lading coupled with the known fact that the Convention cannot be operational in the maritime/transport industry unless it has a legal backing such as an international Convention; in this circumstance, the Rotterdam Rules. Yet, the only international law that would have made this e-B/L become a reality is still at the mercy of ratification by member States in spite of a welcoming embrace it received when it was introduced. The e-bill has varied advantages to every party in a legal transaction which the paper bills lack as those benefits have been discussed in the body of the work.

The world is changing, and the maritime transport industry cannot keep up with rudimentary bills of lading in the current age and time when technology keeps evolving on a daily basis. Credit must also be given to the UNCITRAL's work on e-commerce in general which has been crucial for the process of getting to this level of international Convention on the contracts of carriage of goods by sea. BOLERO and CMI Rules have tremendously helped in the

[161] since the Carrier would not have to wait for the paper bills that would take time to get to the Consignee who has to present it before getting the goods delivered.

development of e-B/L systems in that, while Bolero clearly provides a solution that has effectively and systematically replicated the functions of a paper-based B/L, it however restricts potential users and limit trade by being a closed member-network, the CMI on the other hand is accessible to everyone but gives the carrier a central role of keeping track of transactions, which places an undesirable workload on the carrier.

Since neither BOLERO nor the CMI rules as well as ESSDocs is able to ensure uniqueness of the e-B/L without attaching a title registry to their respective platforms, in spite of their existence during the drafting of the Rotterdam Rules; growth in technology has brought about blockchain-based bill of lading. It is also of interest to know that BOLERO has been working with blockchain firm R3 for more than a year to give its electronic bill of lading service a blockchain upgrade.[162]

Blockchain technology allows the trade of tokens on a p2p-system, without any involvement of intermediaries; being a decentralized technology that allows multiple parties to exchange information in real time while securely being able to track and transfer assets. And with principles such as neutrality of technology and functional equivalence, the existing works including the yet to be ratified Convention are flexible enough to accommodate the blockchain technology.

It is therefore paramount that States do willingly ratify this Convention at the earliest possible time in order to give life to a wide and international utilization of electronic bills of lading which would consequently aid the recognition of blockchain-based bill of lading. If States would not ratify the Convention because of the so-called flaws, this thesis hereby recommends that the certain provisions dealing on negotiable electronic transport records be carved out from the

[162] https://www.gtreview.com/news/fintech/essdocs-to-launch-blockchain-solution-in-early-2019/

Rotterdam Rules and separately have them drafted in another Convention for the wide use of e-bills to be activated.

A decade is too long for the Rotterdam Rules to be redundant after the signing ceremony; and to also avoid a state of wasted effort on the part of UNCITRAL, an appeal is hereby made to the Convention's signatories to ratify this valuable Convention. As long as the Rotterdam Rules are not ratified, there can be no electronic bills of lading and once there is no e-bills for the twenty-first century trade, it would be as though that the maritime transport trade is back to the medieval time. Even if member States would not ratify this Convention for reasons best known to them, these States should at least for the purpose of electronic bill of lading which aims to foster e-commerce and international trade endeavor to do the needful.

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