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Switching From Paper To Electronic Bills Of Lading: Fundamental Sociological Structure, Distributed Ledger Technology And Legal Difficulties (First Part)

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Abstract- The first part of this article proposes a conceptual framework for a sociological understanding of the uses of bills of lading. We argue that platforms that aim to facilitate an electronic format of bills of lading should be based upon the constituent components of the practices associated with paper bills of lading. In the second part of this article we suggest that Distributed Ledger Technology (DLT), including blockchains, is the best technological means for facilitating the use in practice of immaterial bills of lading. The appropriate type of DLT is then evaluated in light of expected legal difficulties.

Keywords— *Electronic bills of lading; norms and law, social structure, legal issues on Distributed Ledger Technology*

INTRODUCTION

In the last three centuries a bill of lading (i.e. a written document issued by the carrier of goods) has been one of the cornerstones of international trade mainly because of its essential role in facilitating documentary sales and raising finance.¹ The conventional bill of lading is issued in a paper format. Paper bills of lading often arrive later than the arrival of oil and dry cargo causing significant inconvenience, such as cost of demurrage, particularly to carriers.² Switching from paper to electronic bills of lading should offer an ideal solution to this common problem.³ Previous attempts to switch from paper to electronic bills of lading as a universal solution in international trade, such as Bolero and essDOCS systems, have been unsuccessful. This is despite potential gains in solving the problem of the delay of the arrival of bills of lading, reduction of costs, fraud protection, increased transparency, and the potential for real-time transfer of rights.⁴ Various writers have identified technical and legal difficulties encountering the emergent use of electronic bills of lading, predominantly in relation to the characteristic of transferability.⁵ None of them has however analysed the sociological structure

1 *J I Macwilliam Co Inc v Mediterranean Shipping Co SA ("the Rafaela")* [2005] 2 A.C. 423 at 453 -454; B Harris, *Ridley's Law of the Carriage of Goods by Land Sea and Air*, (8th edn, Sweet & Maxwell 2010).

2 P Todd, *Bills of Lading and Banker's Documentary Credits*, (4th edn, Informa Law from Routledge 2007) paras 1.114-119; L Hickson "The importance adhering to best practice when it comes to bills of lading" [2017] Shipping & Transportation, <https://www.drycargomag.com/best-practice-and-bills-of-lading> (accessed 25 October 2017).

3 Post to text in section 2 under the heading "the dynamics of social norms".

4 Bolero website: www.bolero.net/home/electronic-bills-lading (accessed 01/03/2018).

5 M. Goldby, "Electronic bills of lading and central registries: what is holding back progress?" June [2008] Information & Communications Technology Law Vol. 17, No. 2, pp.125-149; N. Gaskell, "Bills of lading in an electronic age" [2010] LMCLQ 2: 233-284; D Burry, "Electronic Bills of Lading: A Never-Ending Story?" [2016] Tulane Maritime Law Journal 41 Mar. L. J. 197; P

underlying the use of bills of lading. The premise of this article is that the legal and practice norms that constitute bills of lading in use (i.e. the characteristics of receipt for goods, evidence of the carriage contract, document of title and transferability of the bill) that have become widely applied and effective in the paper format of bills of lading, are also equally vital for bills of lading in an electronic format. Bills of lading have purpose and meaning within social practices, enforced by groups of traders and not merely by national laws. These social practices that must be serviced by any successful electronic substitution for the paper bill. We argue that for a universal substitution of paper bills of lading by an electronic format, the platform deploying the technology for electronic bills ought to accommodate the social structure that enables practice norms to be enforced by cooperation, reputation and passive sanctions unofficially executed by traders themselves.

Accordingly, in the first part of this article, we propose a conceptual framework for analysis (“analytical framework”) of the fundamental sociological structure of bills of lading. In the second part of this article, published in the next issue of the journal, we suggest how distributed ledger technology can accommodate such a nature in light of potential legal difficulties.

There are technical, legal and social obstacles that hinder the widespread use of electronic bills of lading. The technical obstacles such as the exclusivity of possession and digital signature via technology can be overcome by adapting new technologies as suggested later in the second paper of this article. Similarly, the legal obstacles, explained in the second paper, can be overcome by amending some current laws. In contrast, the social obstacles represent chronic challenges that may not be overcome in the near future. The first chronic challenge is the lack of an urgent need to switch the use from paper to electronic bills of lading, as the paper bill still functions successfully despite its problems.⁶ The second chronic challenge is the lack of worldwide infrastructure by various actors who have various interests in bills of lading to accommodate the use of an electronic format.⁷ This article does not address those chronic social obstacles, because it seems that they cannot be solved nowadays and they will be overcome in future after taking strategic steps for long term developments (e.g. worldwide investment in technologies, training and infrastructure of various institutions in developed and developing countries).

We argue, however, that a third social obstacle for the widespread use of electronic bills of lading is the failure of current platforms deployed for electronic bills of lading such as Bolero and essDOCS to accommodate the underlying practice norms of paper bills of lading. Thus, Bolero⁸ and essDOCS,⁹ and previously SEADOCS,¹⁰ are based on a centralised ledger (i.e. a single authorised server that transfers the title and the transferable rights). So the service is monopolised by a company,¹¹ which is inconsistent with the socially situated uses of paper bills of lading that are based on decentralised authority. A paper bill of lading is transferred peer to peer without the need for a central register to register and execute the transfer of rights. The enforcement of the norms associated with the use of bills of lading in an electronic format by international merchants through cooperation and passive sanctions, as in paper bills, ought to heighten the possibility of the widespread use of electronic bills,

Kalofolia, “Electronic Bills of Lading: Legal Obstacles and Solutions” *Hertfordshire Law Journal* 2(1), 45-54; S Beecher, “Can the Electronic Bill of Lading Go Paperless?” [2006], 40 *Int'l Law*. 627, 628. H Manaadiar, “Is There a Future for Electronic Bill of Lading..?”, [2016] *Shipping & Freight Resource* (<http://shippingandfreightresource.com/is-there-a-future-for-electronic-bill-of-lading>).

6 United Nations Conference on Trade and Development (UNCTAD) (2003): “The Use of Transport Documents in International Trade” (New York, UNCTAD), http://www.unctad.org/en/docs/sdtetlb20033_en.pdf (accessed 11 January 2017) para 80 and argued by M Goldby, “Electronic bills of lading and central registries: what is holding back progress?” June [2008] *Information & Communications Technology Law* Vol. 17, No. 2, pp.125-137.

7 United Nations Conference on Trade and Development (UNCTAD) (2003): “The Use of Transport Documents in International Trade” (New York, UNCTAD), http://www.unctad.org/en/docs/sdtetlb20033_en.pdf (accessed 11 January 2017). The purpose of the survey was to study ‘the use of traditional transport documents in international trade’; M Goldby, *Electronic Documents In Maritime Trade: Law And Practice*, (1st edn, 2013 UOP) p11.08.

8 Bolero website: www.bolero.net/home/electronic-bills-lading (accessed 01/03/2018).

9 EssDOCS website: <https://www.essdocs.com/solutions/cargodocs/docex/electronic-bills-of-lading> (accessed 10/07/2019).

10 M Dubovec, “The problems and possibilities for using electronic bills of lading as collateral” [2006] *Arizona Journal of International & Comparative Law* Vol. 23, No. 2.

11 Bolero website: www.bolero.net/home/electronic-bills-lading (accessed 01/03/2018).

because both the electronic bills will be distributed in a horizontal way (i.e. trader to trader enforcing rules)¹² rather than vertical way (i.e. top down: service provider imposing rules on traders)¹³ and the norms will be internalised, and may endogenize, in the cognitive behaviour of carriers and traders.¹⁴ This third social obstacle is not chronic in the sense the first two obstacles are because it can be solved in an effective way by utilising the “analytical framework” proposed in the first part of the article.

In the second part of this article, we suggest that currently the only technological means that can provide this peer to peer ability securely is the recent invention of Distributed Ledger Technology (DLT). Indeed, DLT with its various platforms, such as the Blockchain platform deployed in Bitcoin, is based on the idea of a peer to peer transaction without the need for a third-party agent administering a central registrar to validate the authenticity of the transaction. The third party is replaced by an automatic mathematical system of validation.¹⁵ We argue therefore a universal successful replacement of paper bills of lading by an electronic format should be based on DLT. In a new initiative, Bolero’s company has partnered with R3’s company,¹⁶ and also essDOCS has partnered with Voltron,¹⁷ to update the electronic bills of lading using DLT, so the potential is under on-going experimentation. We argue that any new DLT platform should be based on six fundamental grounds (i.e. peer to peer transfer; informative network; reciprocal powers; reflection of social roles; enabling the function of the fundamental institution of the security of the circulation of transacting in goods, finance and insurance; and fraud detection).

First Part: Fundamental Sociological Structure Of Bills of Lading

This first part of the article consists of two sections. The first section reviews the history of bills of lading using primarily English case law and legislation, and secondary sources that analyse primary sources from the European continent. It seeks lessons to guide the success of future platforms for electronic bills of lading. The second section proposes a new conceptual framework clarifying and analysing the sociological nature of bills of lading and the relationship between the law and the practice of bills of lading. We apply social theories on groups and the purpose of group formation¹⁸ for the first element in the framework. For the second element (i.e. the necessary features – structure- to produce social norms), Elickson’s theoretical account of “Order without Law”¹⁹ is used and we add our account on the importance of various social roles in performing norms. We also apply tit for tat and reciprocity and power theories as a method of analysis on how people in a group cooperate to enforce a norm. For

12 For the theory of privatised law-making whereby law is made by citizens rather than a public authority: K Berger, *The Creeping Codification of the New Lex Mercatoria*, (2edn, Kluwer Law International 2010), 38-51.

13 Essentially enhancing the facilitative aspects of bills of lading, in Hartian terms power conferring secondary rules, rather than primary conduct rules: HLA Hart, *The Concept of Law* (2nd ed, Oxford University Press 1994).

14 [For the internalisation of norms as the process of which the norm will become an end in itself that will be excuted for its own sake as being part of the individual personality see text of footnotes 90-93](#): D Villatoro, G Andrighetto, R Conte and J Sabater-Mir “Self-Policing Through Norm Internalization: A Cognitive Solution to the Tragedy of the Digital Commons in Social Networks”, [2015] *Journal of Artificial Societies and Social Simulation* 18 (2) 2 <<http://jasss.soc.surrey.ac.uk/18/2/2.html>>DOI: 10.18564/jasss.2759; C Bicchieri, *The Grammar of Society: The nature and Dynamics of Social Norms*, (Cambridge University Press 2006); J Epstein, *Generative Social Science. Studies in Agent-Based Computational Modeling* (Princeton-New York: Princeton University Press 2006); H Gintis, “The genetic side of gene-culture coevolution: internalization of norms and prosocial emotions” [2004] *Journal of Economic Behaviour and Organization* 53.

15 Natarajan, Harish; Krause, Solvej Karla; Gradstein, Helen Luskin. “*Distributed Ledger Technology (DLT) and blockchain (English)*” [2017] FinTech note; no. 1. Washington, D.C. : World Bank Group <http://documents.worldbank.org/curated/en/177911513714062215/Distributed-Ledger-Technology-DLT-and-blockchain> (accessed 01/09/2018).

16 Fintech news: <https://www.gtreview.com/news/fintech/boleros-electronic-bill-of-lading-service-to-get-blockchain-upgrade/> (accessed 01/03/2018).

17 <https://www.essdocs.com/press-room/essdocs-partners-voltron-integrate-cargodocs-docex-blockchain-trade-finance-application>.

18 K Lewin, *Resolving Social Conflicts*, (Harper & Row, 1948); M Horwitz & J Rabie, “Individuality and Membership in the Intergroup System”, in Tajfel (ed) *Social Identity Intergroup Relations* (Cambridge University Press, 1982); R Brown, *Group Processes*, 2ed edn, Blackwell 2000); M Deutch, *An Experimental Study of the Effects of Cooperation and Competition upon Group Process*, [1949] *Human Relations*,

19 R Elickson, *Order without Law: How Neighbors Settle Disputes*, (Harvard University Press 1991).

the third element (i.e. the law and practice) we provide legal and economic analysis backed by both John Commons' classic analysis²⁰ and doctrinal analysis of case law to explain how the security of the circulation of goods across various sectors in international trade is the determining force in influencing the legal and social structure of international trade.

I. BILLS OF LADING, HISTORY AND LESSONS FOR AN ELECTRONIC FORMAT

Fundamentally, a bill of lading is a written document issued by the carrier of the vessel, or the master as an agent of the carrier, acknowledging that the carrier has received the goods in accordance to their stated quantity and quality.²¹ The acknowledgement of receipt of goods is the characteristic of a bill of lading since the time of its birth.²² Further characteristics constituting a bill of lading have been developed throughout the last three centuries. A modern bill of lading, from the eighteenth century onwards, has four constituent characteristics. (1) It is receipt for goods, so the carrier acknowledges to the shipper and to the whole world that he has received the goods as described and loaded aboard the vessel. (2) It is evidence for the carriage contract between the carrier and the shipper. (3) It is a document of title providing the holder of the bill of lading an exclusive right of possessing the goods so the carrier is obliged to deliver the goods only to the holder or to his consignee or to his order. (4) Transferability of the rights of the holder of the bill of lading, so the holder can transfer his rights under the bill to a third party.

Because the constituent characteristics of a bill of lading had been developed by unwritten but well-known trade practices prior to the eighteenth century,²³ it is impossible to incontrovertibly demonstrate the historical development of bills of lading because trade practices have not left definitive written evidence. We cannot assume trade practices established in case law are a comprehensive representation of all or even the most prevalent practices, indeed it may be a sample characterised by novelty or irregularity of practice that led to litigation. Furthermore, there is a risk that *de juris* practice, as perceived by law, does not reflect *de facto* practices.²⁴ Finally, undisputable practices may not have been reported in case law as it is generally the disputed practices that lead parties to seek the assistance of law through litigation or legislation. Despite these difficulties, there are persuasive scholarly works narrating the history of bills of lading mainly based on old legislation and case law in Europe.²⁵ Such works provide an insight into the developments of bills of lading.

A. First Phase – Receipt For Goods

From the 11th Century exporters often did not accompany their goods in vessels,²⁶ and that led to the need for a third party who was trustworthy and independent from the contractual parties to the carriage of goods (i.e. the shipper and the carrier) to support the confidence of shippers of unaccompanied goods. Therefore, many Mediterranean cities imposed a duty, by legislation, upon the carrier or the master (the agent of the carrier) to take a clerk on the vessel in order to provide

20 J Commons, "The Problems of Correlating Law, Economics and Ethics" [1932] 8 Wisconsin Law Review 3.

21 B Harris, *Ridley's Law of the Carriage of Goods by Land Sea and Air*, (8th edn, Sweet & Maxwell 2010).

22 K Gronfors, *Towards Sea Waybills and Electronic Documents* (Akademiförlaget 1991): a document from Roman time considered as a written acknowledgement of receiving goods on board vessel; Gronfors however did not treat it as a bill of lading since it lacked the characteristic of document of title; SF du Toit, "The Evolution of the Bill of Lading", [2005] 11.2 Fundamina 12, 12.

23 W Holdsworth, *History of English Law*, (Methuen 1966) 5: 102–54; F Beutel, "Development of Negotiable Instruments In Early English Law" [1938] Harvard Law Review Association; C Fifoot, *Development of the Law of Negotiable Instruments AND OF The Law of Trusts* (1939); E Jenks, 'Early History of Negotiable Instruments' (1909) in *Select essays in Anglo-American legal history*.

24 R Goode, *Rule, Practice, and pragmatism in transnational commercial law*, [2005] International & Comparative Law Quarterly 539.

25 D Murray, "History and development of the bill of lading", [1983] 37U. Miami L. Rev.689; SF du Toit, "The Evolution of the Bill of Lading" [2005] 11.2 Fundamina 12; W Bennett, *The History and Present Position of the Bill of Lading as a Document of Title to Goods* (Cambridge University Press 1914); C McLaughlin "The evolution of the ocean bill of lading" [1925-1926] 35 Yale Law Journal 548 550; K Gronfors, *Towards Sea Waybills and Electronic Documents* (Gothenburg Maritime Association 1991).

26 K Gronfors, *Towards Sea Waybills and Electronic Documents* (Gothenburg Maritime Association 1991) 7.

authoritative proof of what goods were shipped²⁷ and to register them in a "book of lading". Hence, the "book of lading" was the ancestral form of the modern bill of lading having the sole characteristic of an official receipt and description for goods shipped, but one not possessed by the consignee.²⁸

B. Second Phase - A Copy To The Consignee And Document Of Title

Initially one unique copy of the book of lading was issued and held by the clerk in the vessel.²⁹ But by the end of 14th century Mediterranean cities required the clerk to issue more than one copy of the book of lading. One original was held by the clerk, one copy was preserved in safe hands at the port of departure and another copy was given to the shipper.³⁰ The purpose of three copies was to preserve the rights of the parties when the original book of lading in the vessel was lost. Such a requirement by law seems, as suggested by McLaughlin,³¹ to convert the register of the book of lading into a bill of lading by being a document sent to the issuer and other parties. In the year 1600 French legislation required the bill of lading to be issued by a carrier instead of an official clerk in three original copies with one sent to the consignee, and that the carrier was obliged to deliver the goods to the consignee who presented the copy of bill of lading.³² Perhaps the most likely inspiration for this legislation was the prior practice of traders. If carriers were delivering to the consignee upon presentation of a copy of the entry in the book of lading, then the legislation would have had the effect of standardising, rationalising, confirming and re-enforcing the trade practice. This suggestion can be supported by a reported form of a bill of lading in an English case in the year 1539.³³ The bill of lading in *Hurlocke and Saunderson v Collett*³⁴ provided that after one bill of lading has been performed the other copies are void. This clearly indicates, as suggested by Bennett, that the consignee to whom the bill of lading was sent had the authority to demand the delivery of the goods from the carrier.³⁵

C. Third Phase - Transferability

The fact that the characteristic of transferability of the bill of lading was recognised in the 18th century under English law as a well-established custom,³⁶ indicates that the practice of transfer had already been known earlier than the 1790s. To become a trade usage, and thus social but not legally promulgated norm, a practice needs time to reach a widespread application in a numerous and dispersed group of traders.³⁷ The characteristic of transferability of bills of lading was most probably well-known and established amongst traders in Europe by the end of 17th century.³⁸ Two main reasons have led the development of the transferability.

27 E.g. Ordinamenta et Consuetudo Maris of Trani from 1063; Count of Barcelona; W Bennett, *The History and Present Position of the Bill of Lading as a Document of Title to Goods* (Cambridge University Press 1914); SF du Toit, "The Evolution of the Bill of Lading", [2005] 11.2 Fundamina 12: relying on Pardessus, *Collection de Lois Maritimes* (1839) 242, Art. XVI.

28 *Diamond Alkali Export Corporation v Fl Bourgeois* [1921] 2 KB 443, 449 per McCardie J.

29 C McLaughlin "The evolution of the ocean bill of lading" 35 (1925-1926) Yale Law Journal, 550 -551.

30 E.g. a statute of the City of Anconal in Italy (1397): C McLaughlin "The evolution of the ocean bill of lading" 35 (1925-1926) Yale Law Journal, 550 -551 relying on Pardessus, *Collection de Lois Maritimes* (1839) 242, Art. XVI.

31 C McLaughlin "The evolution of the ocean bill of lading" 35 (1925-1926) Yale Law Journal, 551 -552.

32 C McLaughlin "The evolution of the ocean bill of lading" 35 (1925-1926) Yale Law Journal, 550 -551 relying on Pardessus, *Collection de Lois Maritimes* (1839) 381.

33 *Hurlocke and Saunderson v Collett* (1539).

34 (1539).

35 W Bennett, *The History and Present Position of the Bill of Lading as a Document of Title to Goods* (Cambridge University Press 1914) 12, 19.

36 *Lickbarrow v. Mason* (1794) 5 Term Rep. 683.

37 Time is regarded as an associational learning (irrational) factor in influencing members of group and it enhances the power of other associational factors such as the powers of imitation and repetition in constituting social norms or customs. A Etzioni, "Social norms: Internalization, persuasion, and history" [2000] 34 Law & Society Review 15. For the power of imitation: C Allen, *Law in the Making* (6thedn, Clarendon Press 1958) 98-104, 145.

38 W Bennett, *The History and Present Position of the Bill of Lading as a Document of Title to Goods* (Cambridge University Press 1914) 19.

Firstly, the transferability of rights had become familiar through the use of bills of exchange³⁹ and had been accepted and became part of various laws.⁴⁰ The common law recognised and enforced the transferability of bills of exchange despite the repugnancy to the common law doctrine that contractual rights cannot be transferred.⁴¹

Secondly, it is submitted that the 16th century establishment of the bill of lading as a document of title, paved the way to the development of transferability, because the bill in the hands of the holder started to have value in itself as a documentary representation of title. Hence, traders who wanted to sell their goods en route before their arrival, to raise finance for instance, used the bill of lading as proof of their possession and ownership of the goods and delivered the bill of lading to the buyers so the latter would have documentary proof of the sale enabling them to demand the goods either from the carrier or the seller. With the passage of time such a practice became common. The effect was that traders expected carriers to deliver the goods to the holder of the bill of lading, be they are the original consignee or another person being the transferee to whom the bill was transferred.

D. Present Era

From 18th century onwards, the bill of lading as a receipt for goods, evidence of contract of carriage, a document of title,⁴² and finally as a transferable document of title, has been recognised by many national laws including both common law and civil law jurisdictions. Although there is a consensus as to the existence of these characteristics and what they generally denote, national laws and trade usages vary on details. So, there is no standardised transnational usage as to the information the carrier must insert in relation to the goods and national laws do differ in that respect. Also national laws do differ regarding the evidential force of the bill of lading. The third and fourth characteristics of a bill of lading, that it is a document of title and that it is transferable, are problematic in their scope and effect.

Under both common law⁴³ and civil law, the bill of lading as a document of title functions as a symbolic delivery of goods, providing the holder with constructive possession of the goods authorising the possessor of the bill to receive or transfer goods thereby represented.⁴⁴ National laws differ however on the issues of (1) whether the bill of lading provides the holder a property in goods and (2) the transferability of the rights embedded in the bill of lading to third parties.

Although the issue of ownership is most relevant to the sale of goods contract between the seller and the buyer and not to the contract of carriage, the bill of lading issued under the contract of carriage may function as evidence of ownership.⁴⁵ This is because under English law property is transferred upon the intention of the parties (seller and buyer in the sale contract).⁴⁶ Where the seller retains the possession of the bill of lading, as a principal for his own account, against payment the seller reserves the right of disposal⁴⁷ and the property will be presumed to be transferred on the delivery of the bill against payment.⁴⁸

39 Bills of Exchange Act (1882).

40 F Beutel, "Development of Negotiable Instruments In Early English Law" [1938] Harvard Law Review Association; C Fifoot, *Development of the Law of Negotiable Instruments and of The Law of Trusts* (1939); Jenks, 'Early History of Negotiable Instruments' (1909) in *Select essays in Anglo-American legal history*.

41 Lord Irvine, "The Law: An Engine for Trade", [2001] *Modern Law Review*, May 64 (3) 333, 339; *cited*; *Three Rivers v Bank of England* [1996] QB 92; Pleaders in the seventeenth century used to plead the negotiability of bills of exchange on immemorial local custom: *Halsbury Laws of England*, (5edn, 2012), 32 para 62.

42 *Sanders Bros v Maclean & Co* (1883) 11 QBD 327.

43 G Treitel & F Reynolds, *Carver on Bills of Lading*, (4th edn, Sweet & Maxwell 2017).

44 E.g. in the UK: section 1 (4), Factors Act (1889).

45 *Enichem Anic SpA v Ampelos Shipping Co Ltd (The Delfini)* [1990] 1 Lloyd's Rep. 252, per Mustill LJ at 268.

46 Section 17 Sale of Goods Act (1979).

47 S.19 Sale of Goods Act (1979).

48 *Lickbarrow v. Mason* (1794) 5 Term Rep. 683; *The Rafaela* [2005] 2 A.C. 423; *Dracachi v Anglo-Egyptian Navigation Co (1868)* L.R. 3 C.P. 190; where the buyer is the named consignee in the bill of lading and the seller keeps the possession of the bill of

Similarly, under German law the delivery of the bill of lading is treated as a delivery of goods⁴⁹ which is an essential condition for the property to be transferred,⁵⁰ so the property is usually transferred to the buyer at the moment that the bill of lading is handed to him. French law functionally differs as the property in goods is transferred to the buyer at the moment that the contractual parties agree about the identified goods and the price.⁵¹ Hence, the property is transferred before the bill of lading is issued and delivered to the buyer. Therefore, the bill of lading does not function as a document determining ownership at the time of its transfer, unless the goods have only become identified in the bill of lading, under French law.⁵²

Under common law, the transfer of a bill of lading does not provide the bona fide transferee with a better title than the transferor had, as the title is subject to prior defects and claims.⁵³ Unlike the negotiability of bills of exchange in which the transferee can receive a better title than the transferor had.⁵⁴ Hence some authors suggest that a bill of lading is a semi-negotiable document.⁵⁵ Under civil law jurisdictions bills of lading are regarded as negotiable instruments providing the bona fide transferee with title, that is potentially a better title than the transferor held and free from prior defects.⁵⁶

For uniformity in international trade, and thus certainty as to the requirements and effects of bills of lading across borders, various conventions have been promulgated in the last century. Three Conventions currently regulate ocean bills of lading (i.e. the goods are transported by sea, or a leg of the journey involves sea transportation): Hague Rules (1924); Hague-Visby Rules (1967); Hamburg Rules (1978); and a fourth important Convention, the Rotterdam Rules (2009), is not in force.⁵⁷ The Conventions mainly deal with duties of the carrier and the shipper, the liability of the carrier, and the information that should be inserted in the bill of lading. The Conventions assert that the carrier is liable for the accuracy of the information inserted to the consignee and any third party to whom the bill of lading is transferred. Both Hamburg Rules and Rotterdam Rules deal with electronic bills of lading. Given the aforementioned differences between national laws on the legal characteristics of the bill of lading as a document of ownership and of transferability of bills of lading, none of the above Conventions regulates the issues of property and the legal effects of transferability in bills of lading.

E. Lessons For Electronic Bills Of Lading

1. Means of proof and authenticity

The idea of the bill of lading as a receipt for goods came into existence due to the need for evidence of the rights of shippers over goods carried by sea, thus reducing disputes. This was best achieved by a paper form as it had the virtues of recording information reliably and verifiably for a long period of time and making surreptitious changes to the information recorded difficult. The idea of issuing three original copies of the bill of lading also served to preserve information, addressing the risk a unique copy could be lost, and making unauthorised alterations more difficult as the copies could be compared

lading then if the seller acts as a principal the property will be presumed to be transferred on delivery of the bill but if the seller acts as an agent the property will be presumed to be transferred on shipment of goods: *East West Corp v DKBS 1912 AF A/S* [2003] EWCA Civ 83; [2003] Q.B. 1509 at [34]; cf. *Scottish & Newcastle International Ltd v Othon Ghalanos Ltd* [2008] UKHL 11; [2008] 1 Lloyd's Rep. 462 at [47]; *Benjamin's Sale of Goods* (10th edn, 2018) paras 18-92; 20-009.

49 Article 650 German Commercial Code.

50 Article 929 German Civil Code.

51 Article 1583 French Civil Code.

52 C Pejovic, "Documents of Title in Carriage of Goods by Sea Under English Law: Legal Nature and Possible Future Directions", [2004], 58 *hrcak.srce.hr/file/65803*.

53 *Gurney v Behrend* (1854) 3 E. & B. 622; *Schuster v McKellar* (1857) 7 El. & Bl. 704. But in USA the transferee of the bill can acquire good title even from the transferor who had stolen the bill 49 UCC §80104(b), UCC §.7-502(b).

54 *Thompson v Dominy* (1845) 14 M. & W. 403 at 408; *Benjamin's Sale of Goods* (10th ed, 2018) para 18-112.

55 B Harris, *Ridley's Law of the Carriage of Goods by Land Sea and Air*, (8th edn, Sweet & Maxwell 2010).

56 C Pejovic, "Documents of Title in Carriage of Goods by Sea Under English Law: Legal Nature and Possible Future Directions", [2004], 58 *hrcak.srce.hr/file/65803*.

57 https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg_no=XI-D-8&chapter=11&clang=en.

in evidence. Therefore, a platform facilitating electronic bills of lading must provide means of preserving information and making alterations easy to detect.

2. Exclusive possession and movability

Being in a tangible form, a paper bill of lading can be both physically possessed and moveable. Physical possession enables the holder to have an exclusive possession of the paper. Movability enables the holder to easily and directly deliver the paper, thus transferring the exclusive possession to a subsequent holder. Accordingly, a platform facilitating electronic bills of lading must provide the holder with an equivalent to an exclusive possession of a bill of lading that can be easily and directly moveable peer to peer. The risk posed by replicability of electronic objects, and therefore a proliferation of exclusive possessions, must be overcome.

3. Trade usage as social norms

The bill of lading as a receipt for goods may have its origins in a local formal authority through the force of legislation; but surely its wide application across the continent was facilitated through informal authority by virtue of trade usage having a socially recognised normative force amongst traders. Indeed, not every city had legislation for bills of lading. Where there was a court of merchants dealing with bills of lading disputes, such as the Hanseatic League in the middle ages, their judgements were based on trade usages and practices.⁵⁸

Both the characteristics of document of title and transferability were born and developed by trading practices and laws into widely spread usages, having an informal normative force amongst traders. So, a carrier who did not follow such usages was most probably penalised by both traders and carriers (e.g. the harshest sanction would be to expel the carrier who defected from the group if he repeatedly did not follow accepted usages). In reciprocity and enforcement theories,⁵⁹ people are willing to forgo some money in order to penalise the one who does not cooperate⁶⁰ and gift leads to a more generous and cooperative behaviour.⁶¹ Here the power of enforcing the norm is distributed amongst traders and carriers rather than being exerted by a centralised authority. Since the characteristics of bills of lading were trade usages and thus social norms, a platform facilitating electronic bills of lading might strive to reproduce this bottom up or communal aspect of the bill of lading. It is likely that the power of enforcing the norms embedded in treating bills of lading as documents of title and permitting transfer of title along with the document being distributed and not controlled by a single authority was valued by merchants in the past. The power of issue of the paper bills remains distributed. Paper bills of lading and the risks associated with them are familiar to carriers, traders, and consignees, who are aware of the possible existence of unfamiliar risks associated with electronic bills of lading. Electronic bills of lading may threaten merchant autonomy and feelings of competence. To mitigate these potential effects on autonomy and competence it is necessary for the electronic bill to make sense and be deployable in a familiar social context of practice. We will analyse the sociological structure of trade usages in section two of this article.

4. Common elements

As shown above, for the common law transnational trade usage of transferability of bills of lading was so powerful that it overcame fundamental legal doctrine in national law.⁶² Therefore, a legal difficulty may not be an insurmountable factor leading to a refusal to apply a transnational transactional form, although it may slow down the speed and extent of its use. A legal difficulty may also lead to divergent assimilation into national laws and thereby diversity in the usage. Indeed, in comparison to civil law,

58 A Hibbert "Hanseatic League" [2019], <https://www.britannica.com/topic/Hanseatic-League> (accessed 10/07/2019).

59 E Fehr, S Gächter and G Kirchsteiger, "Reciprocity as a Contract Enforcement Device: Experimental Evidence" [1997] *Econometrica* Vol. 65, No. 4; pp 833-860; U Fischbacher & S Gächter, "Strong reciprocity, human cooperation, and the enforcement of social norms" [2002] *Human Nature* 1, pp 1-25.

60 W Guth and R Tietz, "Ultimatum bargaining behavior: A survey and comparison of experimental results" [1990] *Journal of Economic Psychology*, 1990, vol. 11, issue 3, 417-449.

61 E Fehr, G Kirchsteiger and A Riedl, "Does Fairness Prevent Market Clearing? An Experimental Investigation" [1993] *The Quarterly Journal of Economics*, Vol. 108, No. 2 (May), pp. 437-459.

62 See text footnote 41.

the doctrine of privity under common law limited transferability of bills of lading and militated against recognition of negotiability, reducing the protection of the rights of the lawful holder.⁶³

Due to differences in national laws relating to the effects of the characteristics of document of title and transferability of bills of lading, a platform facilitating electronic bills of lading should focus on the generally accepted or common elements of each characteristic of the bill of lading. Such a platform must be sufficiently flexible to accommodate the differences between various national laws. Hence, a rule-based platform (i.e. directly giving effect and force) should only apply to the common elements of the characteristics of the bill of lading.

The common element of the bill of lading as a receipt for goods is that the carrier acknowledges to the shipper, and to the whole world, that he has received the goods as described in the bill of lading and loaded aboard the vessel. What information should be inserted in the bill of lading to describe the goods depends on the applicable law.

For the characteristic of a bill of lading as evidence for the carriage contract between the carrier and the shipper, the common element is the mere idea of the bill of lading as admissible evidence. How powerful the evidence is must be left to be determined by the applicable law.

The common element of the characteristic of document of title is that the holder of the bill of lading to whom or to whose order the bill is issued as a consignee has an exclusive right of possessing the goods.⁶⁴ So the carrier is obliged to deliver the goods only to the holder in exchange for the original copy of the bill of lading that matches the original copy with the carrier. The function as evidence of ownership of the goods depends on the applicable national law, and it is a legal issue which relates to the sale of goods rather than the carriage contract between the carrier and the shipper.

The common element of the characteristic of transferability of the rights represented by the bill of lading is that the holder can transfer his rights under the bill to a third party (i.e. by mere delivery of a bill of lading that is issued to a bearer or by signing the bill and delivering it if it is issued to order) and the transferee can enforce the transferred rights against the carrier as a holder. The conditions that delimit the effects of the transferability of rights depend on the applicable law.

5. Social factors restraining the shift to electronic format of bills of lading

The above brief history of bills of lading does not investigate the surrounding social context, such as a development of a seaborne trade and the urgent demand for a means to accommodate particular needs, that led traders to widely adopt bills of lading at different stages of economic development. What was established was the primacy of usage and the secondary role of law in recognising, regularising and generalising from prior social norms of conduct established by traders.

In a 2003 survey conducted by United Nations Conference on Trade and Development (UNCTAD),⁶⁵ 51% of the respondents identified the non-readiness of the infrastructure and the market as the main obstacle for the use of electronic bills of lading. This may include the lack of genuine market demand to shift to electronic format in the use of bills of lading as indicated in some of the responses given in the survey. Other factors identified by writers could be the potential cost and uncertainty of using unfamiliar electronic formats.⁶⁶

II. SOCIOLOGICAL STRUCTURE OF BILLS OF LADING

63 See text footnote 52- 55.

64 Pursuant to Section 1 (4) of Factors Act (1888) a document of title is the document that is essentially used as a proof of possession of goods and authorises the possessor to transfer or receive goods thereby represented.

65 United Nations Conference on Trade and Development (UNCTAD) (2003): "The Use of Transport Documents in International Trade" (New York, UNCTAD), http://www.unctad.org/en/docs//sdtetlb20033_en.pdf (accessed 11 January 2017). The purpose of the survey was to study 'the use of traditional transport documents in international trade'.

66 M Goldby, "Electronic bills of lading and central registries: what is holding back progress?" June [2008] Information & Communications Technology Law Vol. 17, No. 2, pp.125-132.

In the introduction we explained that there are three main social obstacles hindering the widespread substitution of paper bills of lading by an electronic format. We argue that disappointing take up of current platforms such as Bolero and essDOCS is due to weaknesses in their alignment to practice norms. Unlike the chronic social obstacles that we identified above this social obstacle is tractable. This section proposes a set of concepts supporting an analysis (analytical framework) of the sociological structure of social norms with a particular reference and application to the constituent norms of a bill of lading. Platforms deploying technology for electronic bills of lading are advised to utilise this analytical framework and the six fundamentals identified in this section.

One of the main inferences that can be clearly gauged from the history of bills of lading is that the constituent characteristics of a bill of lading (i.e. receipt for goods, evidence for the carriage contract, document of title and transferability) express functional social norms that facilitate the transactions that use the bill of lading. Such social norms are also known and recognised as trade usages or trade customs in law (trade usage *de facto*), although the law may interpret the social norms differently (trade usage *de juris*).⁶⁷

Definition of “social norm”

A social norm can be defined as: a repetitive pattern of behaviour in a particular social context that is associated with shared expectation amongst participants that such a pattern of behaviour will and should be reproduced in that particular context in the future.⁶⁸ Social norms regulate the activities of people and enhance cohesion and order amongst people in a particular context, by providing certainty and facilitate what ought to be done; assuming the norm to be the most suitable solution to a particular problem.⁶⁹ So a social norm exists through the communicative understandings and attitudes of people. In element C of the model below we will see that the original function of a social norm is to solve a problem encountered by transacting parties. To be a norm, a solution must be perceived by at least two members in a group as a norm. The essential conditions of a norm as formulated by McAdams:

- 1- Consensus about the positive or negative esteem worthiness of engaging in X;
- 2- Some risk that others will detect that one engages in X;
- 3- The existence of the above conditions is well known within the relevant population.⁷⁰

The proposed analytical framework of the sociological structure of norms consists of the following elements. (A) The formation of a group for cooperative endeavour. (B) Necessary features of norm producing and maintaining groups. (C) The dynamic relationship between practice and law. Element A is a natural feature of any society and by default any platform facilitating electronic bills of lading will be subject to it. It is element B that platforms aiming to facilitate electronic bills of lading need to accommodate. Platforms should therefore ensure they facilitate the constitution of groups that have the features identified under element B. Finally, they should take into account in their design the dynamics identified in element C and anticipate how the platforms own rules will interact with the relationship between social norms and legal norms.

A. The Formation of a Group for Cooperative Behaviour

The core component in the above definition of a social norm is the communicative understanding between people. Social norms must be embedded in social groups whose members will embody the norms. We argue that one problem with Bolero and essDOCS platforms is that they invented a central administrative authority to regulate the transferability of bill of lading rather than reflecting the

67 R Goode, *Rule, Practice, and pragmatism in transnational commercial law*, [2005] *International & Comparative Law Quarterly* 539.

68 M Hwaidi and G Ferris 'The Existence of International Unchangeable and Changeable Trade Usage' (SLS Conference, Edinburgh, September 2013) <<http://archive.legalscholars.ac.uk/edinburgh/restricted/paper.cfm?id=107>>.

69 R Ellickson, *Order without Law: How Neighbors Settle Disputes*, (Harvard University Press 1991).

70 R McAdams, *The Origin, “Development, and Regulation of Norms”*, [1997] *96 Michigan Law Review* 338, 358.

sociological nature of bills of lading by giving a social space for empowerment of the group of commercial actors who use bills of lading.

We prefer “group” to “community”, as community is often associated with more demanding conditions than group.⁷¹ Group makes minimal demands on mutual commitment, it means two or more individuals who interact with one another to achieve a purpose that is expected to serve their interdependent interests.⁷² This definition is sufficiently broad to accommodate small groups such as families and large groups such as international trade groups.⁷³ The understanding and expectation between two persons or more cannot be socially enforced by them against one another unless they are involved in an ongoing common activity which provides a social space for the growth and manifestation of expectation and normative attitude. Accordingly, it seems that both the interdependence of fate and task are the minimal conditions to form a group as suggested by Lewin.⁷⁴ So antagonist or selfish cooperation⁷⁵ is essentially the required activity that makes a social interaction between two or more people constitute group activity. In light of this, cooperation should mean a strategic mutualism as defined by Benkler as “action aimed at attaining one’s own goal, which advances the goal of another as a by-product”.⁷⁶

Our concept of the group requires some importance be assigned by members to their membership of the group. This might be informed solely by instrumental self-interest, or also informed by a value placed by the member in group membership and reputation. In most experiments, half of the population prefer to cooperate and one third behave as *homo economicus* (self-interested, maximising economic benefits alone, instrumentally hyper rational).⁷⁷ Thus, our minimal requirement for a group is compatible with the involvement of both the natural co-operators and the natural self-interested members.

Universality of group membership is as an aspect of both human biological and cultural evolution.⁷⁸ Maximising the collective welfare of the group and the competitive welfare of its members is a common reason for forming or maintaining groups.⁷⁹

Applying those concepts to bills of lading, the constituent social norms of bills of lading exist within a group of people who are carriers and traders. Here, traders in the group of bills of lading include the sub-groups of buyers, sellers, financiers and insurers. Those sub-groups operate in separate circles and may have different interests, namely: the seller holds the bill of lading as a security, and will usually release it, against payment;⁸⁰ the buyer holds the bill of lading as a guarantee to have the exclusive right to receive the goods contracted for;⁸¹ the financier holds the bill of lading as a pledgee to secure

71 A Cohen, *The Symbolic Construction of Community* (London: Routledge 1985) p 19.

72 For a similar broad definition but does not include the purpose of interdependent interests: D Forsyth, *Group Dynamics*, (4th ed, Thomson &Wadsworth 2006) pp. 2-5.

73 For a critical account of various definitions: R Brown, *Group Processes*, (2ed edn, Blackwell 2000), pp.2-4.

74 K Lewin, *Resolving Social Conflicts*, (Harper & Row, 1948); M Horwitz & J Rabie, “Individuality and Membership in the Intergroup System”, in Tajfel (ed) *Social Identity Intergroup Relations* (Cambridge University Press, 1982); R Brown, *Group Processes*, (2edn, Blackwell 2000), pp.35-40; M Deutch, *An Experimental Study of the Effects of Cooperation and Competition upon Group Process*, [1949] *Human Relations*, 2.

75 Cooperation for a goal: D Forsyth, *Group Dynamics*, (4th edn, Thomson &Wadsworth 2006) p. 13; J McGrath, *Groups: Interaction and Performance*, (Prentice Hall 1984).

76 Y Benkler, ‘Law, Policy and Cooperation’ in *Government and Markets: Toward a New Theory of Regulation* (Edward Balleisen & David Moss eds., Cambridge University Press 2010) p.311.

77 E Fehr and H Gintis, “Human Motivation and Social Cooperation: Experimental and Analytical Foundations”, [2007] 33 *Annu. ev. Sociol.*, 43, 50; Y Benkler, ‘Law, Policy and Cooperation’ in *Government and Markets: Toward a New Theory of Regulation* (Edward Balleisen & David Moss eds., Cambridge University Press 2010) p.318.

78 M Olson, *The Logic of Collective Action*, (2edn, Harvard University Press 1971) p 18.

79 R Ellickson, *Order without Law: How Neighbors Settle Disputes*, (Harvard University Press 1991).

80 *Jl MacWilliam Co Inc v Mediterranean Shipping Co SA (The Rafaela S)* [2005] 2 AC 423; [2005] 1 Lloyd’s Rep 347 [6] 108.

81 E.g. CIF contracts: *Arnold Karberg & Co v Blythe, Green Jourdain & Co* [1915] 2 K.B. 379, 388 per Scrutton J; *The Julia* [1949] A.C. 293; *Ross T. Smyth & Co. Ltd. v. Bailey, Son & Co.* (1940) 45 Com.Cas. 292; *Johnson v Taylor Bros & Co Ltd* [1920] AC 144, 155 per Lord Atkinson.

the payment of debt;⁸² the insurer requests the bill of lading before it indemnifies the insured for cargo losses in order to recover the paid losses against the liable party.⁸³ Despite this, the bill of lading secures those various interests via its constituent norms according to which the carrier makes a representation to the whole world as to the accurate description of the goods and that it will only deliver the goods against the presentation of the bill by the holder. This means the performance obligation should be singular and the attended rights should be transferable and that unites all potential holders of bills of lading. However, one of the main social difficulties to digitalise the bill of lading is that it crosses the boundaries between sub-groups, so all of these sub-groups must be willing and able to implement a new infrastructure to digitalise the bill of lading⁸⁴ and the solution for such a social obstacle is not subject of this article as explained in the introduction. We explore one such tension under current law and practice between different sub-groups when we discuss the current practice of using Letters of Indemnity when the bill of lading is not available to authorise delivery of the goods illustrated by *the Zagora*.⁸⁵

These “international merchants” (hereafter this term will denote this group for whom bills of lading mediate their relationships) may be unaware of this group membership, it may not be an aspect of their personal identity, although it may be so. However, they make up the group (if it is global) and groups (if local and regional) whose interdependent interests are served and acceptably accommodated through the constituent social and legal norms of the bill of lading in modern commercial practice, aided by other legal institutions.⁸⁶ If one asks a carrier as to his affiliation to the so-called the group of international merchants he may not realise such an affiliation consciously, but his actions confirm the affiliation if, for example, such a carrier may reject a joint venture with a carrier who has a notorious reputation when it comes to the issuing and use of bills of lading.⁸⁷ Avoiding reputational contamination is to recognise in practice group membership, as reputation is a function of group opinion.

The overlapping and potentially antagonistic interests of sub-groups that make up the group of international merchants generates normative problems. In some instances carriers (shipowners), may be pressurised by sellers who are also charterers to issue a clean bill of lading for goods which are not in apparent good order and condition against a letter of indemnity (LoI).⁸⁸ The norms and trade usage in the insurance sector militate against such a practice,⁸⁹ and the law does not encourage it. This is in order to protect the important norm that the bill of lading should be reliable evidence of the apparent condition of goods and to enhance the veracity bills of lading in circulation in international trade.⁹⁰

The importance of a group of international merchants may not be noticed because the constituent social norms of bills of lading have been adapted as legal rules. Law (for positivists)⁹¹ is enforced by states through formal active sanctions which overshadow informal passive sanctions enforced via social norms. This perhaps explains why systems such as Bolero and essDOCS have overlooked the existence

82 *Peer Voss v APL Co Pte Ltd* [2002] 2 Lloyd's Rep 707 [53].

83 H Manaadiar “Do I need all original bills of lading for an insurance claim?” [2013] <https://shippingandfreightresource.com/original-bills-of-lading-for-an-insurance-claim/> (accessed 10/07/2019).

84 A DiCaprio, A Malaket “Digital Islands in Trade Finance: Can a Decentralized System Solve the Network Problem?” [2018] July https://www.r3.com/wp-content/uploads/2018/10/Digital_Islands_R3-1.pdf.

85 [2017] 1 C.L.C. 426.

86 There is an issue about the identity of the group and it is asserted that the on-going interdependent task keeps the group of particular members cohesive through following norms that are believed to be capable of achieving the collective task.

87 E.g. SeaIntel: Global Schedule Reliability Drops in 2017

<https://worldmaritimeneews.com/archives/243240/seaintel-global-schedule-reliability-drops-in-2017>; <https://fta.co.uk/compliance-and-advice/water/long-guides/delays-in-delivery>.

88 *United Baltic Corporation, Ltd. v. Dundee, Perth & London Shipping Company, Ltd.* (1928), 32 Ll. L.R. 272 at p 272.

89 https://www.westpandi.com/globalassets/about-us/claims/claims-guides/woe_claims-bills-of-lading-2---letters-of-indemnity.pdf.

90 In *United Baltic Corporation, Ltd. v. Dundee, Perth & London Shipping Company, Ltd.* (1928), 32 Ll. L.R. 272 at p 272 Mr Justice Wright stated: “The practice of issuing clean bills of lading when goods are damaged is very reprehensible. It leads to trouble, and the people who do it ought to suffer trouble”; In *Brown, Jenkinson & Co., Ltd. V. Percy Dalton (London), Ltd.* [1957] 2 Lloyd's Rep. 1 the letter of indemnity was unenforceable for illegality.

91 J Austin, *The Province of Jurisprudence Determined*, (London: John Murray 1832); H Hart, *The Concept of Law*, (3rd ed. Oxford: Clarendon Press 2012).

of this group of international merchants, and unfortunately these systems have adopted a centralised authority to enforce norms of bills of lading rather than creating a social space for a decentralised mechanism of enforcement whereby the norms of bills of lading are enforced by members of the group of international merchants. The enforcement of norms of bills of lading in an electronic format by international merchants through cooperation and passive sanctions ought to heighten the possibility of the widespread use of electronic bills. Thus, by peer to peer transfer, electronic bills will be distributed organically as bottom up social rules driven from traders rather than being enforced upon them by a central authority, and there is evidence that when law is made and enforced by traders it can be more effective than law imposed by a centralised authority.⁹² By executing norms, and making law, traders will feel self-valued and more engaged with the group of international merchants, which will lead them to internalise relevant norms, which will be reflected in their behaviour.⁹³ So the norm will become an end in itself and that strengthens the compliance with the norm and its establishment within the group (i.e. transfer rights through electronic bills). Peer to peer electronic bills give traders the opportunity to exercise sanctions and indeed sanctions increase the level of norm's salience and the more the norm is salient the greater chance that the norm will be internalised and thus complied with and well established.⁹⁴ In addition, having a power to sanction is an incentive, we assume, to maintain norms.

(B) Necessary Features of Norm Producing and Maintaining Groups

A norm exists in a group. A social norm in an informal group, such as the group of international merchants, demands a close-knit group in order to enable an informal system of enforcement to work.⁹⁵ According to Ellickson there should be (1) a distribution of reciprocal informal power and (2) a gossip network.⁹⁶ We add (3) the social role of performing the norm by noticeable members in a group with lots of members.

1- Distribution of reciprocal and credible informal power. Members of the group should have current and future power to administer sanctions. This is essential to ensure that the payoff or gains from an interaction between group members cannot be unilaterally changed.⁹⁷ It requires the ready opportunity by any member to exercise sanctions against one who defects and the willingness of some to actually sanction. Amongst international merchants all members (traders, carriers, bankers and insurers) have the opportunity to stop dealing with a carrier who is uncooperative in the handling of bills of lading. Alternatively, they can impose market sanctions by altering the costs of collaboration through price discrimination. These informal social sanctions may be exercised in addition to formal legal sanctions such as claims for damages before courts.

2- Gossip network. There should be a network of information flow to identify publicly anyone who defects and to reward those who adhere to a norm. Information enables a valuation system to maintain the on-going concern underlying the norm. This is caused by cross cutting relationships. For larger groups the key is to have an informative network (gossip) that makes defection by a member

92 For law made by traders and enforced passively by them and so leading to a more effective application and enforcement than the convenient method of law making by single authorities: K Berger, *The Creeping Codification of the New Lex Mercatoria*, (2edn, Kluwer Law International 2010), 38-51; M Hwaidi, An evaluation of the efficacy of UCP 600 within English and Jordanian legal orders and Jordanian commercial practices, PhD Thesis (Jan 2015, Nottingham Law School) <http://irep.ntu.ac.uk/id/eprint/32495>. The empirical study of this PhD study illustrated that as a matter of fact bankers have the sense of being obliged to apply the ICC Uniform Customs and Practice for Documentary Credits (UCP); in para 12 of the annex one of the bankers stated that "we cannot actually dare to exclude its essence or spirit". In paras 34-35 of the annex the empirical study illustrated that in documentary credits it is the practice of banks in Jordan to disregard the Jordanian Maritime law in checking the conformity of the presented bills of lading with the conditions of the documentary credit.

93 J Scott, *Internalization of Norms: A sociological Theory of Moral Commitment* (Englewood Cliffs (N.J.) Prentice-Hall 1971).

94 D Villatoro, G Andrighetto, R Conte and J Sabater-Mir "Self-Policing Through Norm Internalization: A Cognitive Solution to the Tragedy of the Digital Commons in Social Networks", [2015] *Journal of Artificial Societies and Social Simulation* 18 (2) 2 <<http://jasss.soc.surrey.ac.uk/18/2/2.html>> DOI: 10.18564/jasss.2759>.

95 R Ellickson, *Order without Law: How Neighbors Settle Disputes*, (Harvard University Press 1991) p 179.

96 R Ellickson, *Order without Law: How Neighbors Settle Disputes*, (Harvard University Press 1991).

97 Game theory: A Robert, *The Evolution of Cooperation* (Revised edn, Perseus Books Group 2006).

noticeable. The need to track cooperation and defection served as a driving force for the evolution of human intelligence.⁹⁸ Reputation of a member for adherence to the group's norms plays an essential role in determining to what extent other members in the group will cooperate with that member. Amongst international merchants news about a carrier who does not honour the transferability of bills of lading in practice would be directly recognised by the traders who transfer bills of lading issued by that carrier. Many traders in international sales have a strong financial covenant and banks are often involved in financing trade. Banks are capable of effectively disseminating news about a carrier in addition to their ability to exercise pressure upon their peers to boycott a carrier who has violated norms associated with bills of lading. Informal sanctions remain relevant even in the presence (and enforcement) of formal (legal) norms.⁹⁹ Legal Norms are usually (not always) slow, and individualised (the breach vis-a-vis one shipper). Buyers and sellers may not be integrated into influential information networks however, bankers and insurers are likely to be integrated into such networks.

3- The social role of performing the norms of the group by noticeable members. A group with many members may subsist in order to further the purposes of its members through collaboration.¹⁰⁰ However, a numerous group in which no individual's contribution makes an obvious difference to the on-going common activity, usually needs cohesion or inducement from outside to collectively achieve the on-going interdependent task and interests.¹⁰¹ As noted above a strong information network (gossip) that makes defection by a member noticeable can avoid the need for outside involvement in maintaining the cohesion of a large group, but the achievement of this gets more difficult as the group gets larger.

If a group as numerous and diverse as international merchants maintains cohesion over time without surrendering regulator power to outside agencies, then it must be due to the assumption of social roles by prominent members of the group. Three social roles are relevant, performer of norms, exemplar of norms, and enforcer of norms. Prominence must include visibility and influence, and is likely to be a feature of size, functional role, and reputation. There are prominent members of the group of international merchants and their number is countable.¹⁰² Performing members are those whose functional role involves the performance, or failure to perform, relevant norms. Exemplars are performing members or other prominent members who seek a reputation for norm compliance. Enforcers are members who sanction violation of norms. One may seek to be an exemplar through performance, enforcement or both. Other members are observing members as their role involves observing the action of the prominent members and providing feedback to the valuation system on those who defect from amongst the prominent performing members and on consequences of norm violation (which will depend in part on the actions of enforcing members). Carriers and traders are members of the group of international merchants. Carriers are prominent performing parties in the transactions facilitated by the bill of lading as they are trusted to issue bills of lading and to deliver goods to the holder or transferee of the bill. Traders who are consignees or transferees are less prominent performers in the same transactions and their role is to present or transfer the bill of lading, so the transferee presents it to the carrier in exchange for goods. Other international merchants may be merely observers of the performance of carriers. By limiting the role of performing tasks demanded by the norm to limited number of prominent members (e.g. carriers), an effective informative network

98 M Nowak, "Five Rules for the Evolution of Cooperation", [2006] *Science* Vol. 314, Issue 5805, pp 1560-1563; Y Benkler, "Law, Policy and Cooperation" in *Government and Markets: Toward a New Theory of Regulation* (Edward Balleisen & David Moss eds., Cambridge University Press 2010) p 306.

99 M Hwaidi, An evaluation of the efficacy of UCP 600 within English and Jordanian legal orders and Jordanian commercial practices, PhD Thesis (Jan 2015, Nottingham Law School) <http://irep.ntu.ac.uk/id/eprint/32495>. The empirical study of this PhD study illustrated that as a matter of fact banks have the sense of being obliged to apply the ICC Uniform Customs and Practice for Documentary Credits (UCP); in para 12 of the annex one of the bankers stated that "we cannot actually dare to exclude its essence or spirit". In paras 34-35 of the annex the empirical study illustrated that in documentary credits it is the practice of banks in Jordan to disregard the Jordanian Maritime law in checking the conformity of the presented bills of lading with the conditions of the documentary credit.

100 M Olson, *The Logic of Collective Action*, (2edn, Harvard University Press 1971) p 21.

101 M Olson, *The Logic of Collective Action*, (2edn, Harvard University Press 1971) p 44.

102 E.g. For statistics of shipping companies around the world: <https://www.statista.com/topics/1728/ocean-shipping>; For a list of top banks in the world: <https://www.relbanks.com/worlds-top-banks/assets>.

can be maintained keeping the cohesion of the group. Similar reasoning applies to exemplars and enforcers.

C. The Dynamic Relationship between Practice and Law

The first section in this element explains the dynamics of bills of lading's practices and law, the second section proposes the deterministic factor in influencing the development of the law and practice of bills of lading in our international trade era and the third section explains the difference between principles and rules.

1. The dynamics of bills of lading's practices and law

The constituent norms that produced and supported the legal institution of bills of lading were produced by the cooperation of trading individuals in Europe as demonstrated by the research of Greif.¹⁰³ This supports our thesis of the essentiality of social norms in bills of lading. When a group (as defined above) encounters a problem that hinders their expected attainment of their collective and individual interests from cooperative action (for an established group usually traditional or well established and known activity), a new solution may be developed.¹⁰⁴ For a solution to become a norm within a group, the existence of the three features outlined at B above is essential. In this section, element C, of the analytical framework the application of game theory (i.e. the outcome of the decision of one depends on the outcome of the decision of others) provides a method of analysis to understand social interaction.

The normative expectations embedded in a bill of lading are enforced primarily through an informal system leading to a soft enforcement based on passive sanctions tit for tat (e.g. as people willing to punish the one who defects by for instance boycotting him)¹⁰⁵ by the members of the group. This is to be distinguished from hard enforcement through a formal system.¹⁰⁶ Once a practice becomes a social norm in a transnational transaction in trade, there is a strong tendency for national laws (due to the freedom of contract principle as a fundamental institution in a free market)¹⁰⁷ to give effect to the norm as it reflects the reasonable expectations of traders.¹⁰⁸ Our historical review suggests that the social norms pre-dated the legal norms and shaped them.

Of course, legal norms reinforce and give more precise content to the social norms, which in turn develop to incorporate the new legal norms into the developing social practice. This dialectic can be seen in the current response to problems caused by delays in physical transfer of original bills of lading to ports of delivery. A key problem in global trading systems that electronic bills of lading also try to address. In the absence of electronic bills the practice has developed of relying upon Letters of Indemnity (LoI) when the original bill is not available. The immediate commercial necessity is to facilitate timely delivery and due delivery, and the LoI usurps a function of the original bill when it is unavailable. An example of how flexible the law and practice are in handling such LoI is provided by the *Zagora BD* (Comm Ct)¹⁰⁹ in which the court clearly ruled in a manner that upheld the legitimate expectations of the parties, in effect legitimising the social norms that have developed in this area. Law provided one solution (the bill of lading), practice undermined its use at the port of delivery (delays usually linked to finance and sub-sales, in effect the transferable title function being given primacy over

103 A Greif, *Institutions and the Path to the Modern Economy: Lessons from Medieval Trade* (Cambridge University Press 2006).

104 Or the group may cease to exist, the classic account of groups that adapt and persist or fail and disappear: E Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge University Press 2015).

105 W Guth and R Tietz, "Ultimatum bargaining behavior: A survey and comparison of experimental results" [1990] *Journal of Economic Psychology*, vol. 11, issue 3, 417-449.

106 M Lapinski and R Rimal, "An explication of social norms" [2005] *Communication Theory*, 15(2), 127-147.

107 F Hayek, *Individualism and Economic Order* (University of Chicago Press, 1948) vii, 271, [1].

108 E.g. Under English law both trade usage and practice usually take the effect as incorporated contractual terms because they are perceived to reflect the intention of the contractual parties: *Nelson v Dahl* (1879) 12 Ch. D. 568, 575 per Sir George Jessel; *Cunliffe-Owen v Teather* [1967] 1 W.L.R. 1421, 1437; *Rutherford v Seymour Pierce Ltd* [2010] EWHC 375 (Q.B.), [19].

109 [2016] EWHC 3212.

the document of title that gives right to possession function), and practice generated a response (the LoI), which law endorsed thereby reinforcing and rationalising the practice (*Zagora*).

2. The deterministic factor in influencing the development of the law and practice of bills of lading

We argue that the reasonable expectation of traders in international trade reflects the fundamental concern with security in the circulation of goods, and transactions that are ancillary to this circulation such as finance and insurance transactions. Therefore, a platform facilitating electronic bills of lading must be equipped with a structure under which the existing informal system of social norms can effectively work. It is not the role of such platforms to create supranational legal rules by acting as a law maker, rather their role is to facilitate the social and legal norms which constitute and support the use of bills of lading, but in an electronic format instead of a paper one.

Theoretical background of bills of lading

Some of the analytical reach of our sociological account can be appreciated if we see how it maps onto the seminal legal and economic analysis of John Commons.¹¹⁰ Commons argued that to maintain a legal institution there needed to be an ongoing transactional purpose that is expected to serve the independent (but interdependent) interest of the members of the group. The bill of lading originated out of the transactional purpose served by the sale and purchase of goods. The on-going concern of traders in the transaction of sale of goods is the profit for both seller and buyer through the exchange of goods for value. The bill of lading provided a solution to the problems posed by transporting goods with confidence requires a performance by a service provider (i.e. sea carrier) which is a third party to the transaction of sale. Hence the bill of lading supports a further transaction, one that involves new interests and its own on-going concern (serving the group of international merchants). The on-going concern for the service of carriage of goods using bills of lading is the exchange of carrying goods for money between carriers and shippers in the groups of carriage of goods by sea. Once a solution becomes an institution such as the bill of lading, the social norms that constitute the solution become more embedded in the social environment because new parties with further interests will depend on such social norms. The more the transaction, with its constituent social norms, serves various transactions the more that its social norms become embedded and powerful in the social environment. The institution of bill of lading not only serves the transaction of international sale of goods as mentioned above, but, according to a survey by the United Nation,¹¹¹ it also serves various transactions in the financial and insurance sectors as analysed below.

Context and current practice of bills of lading

The bill of lading is an institution that serves a fundamental role in international trade in providing security in the circulation of goods and facilitating provision of finance and insurance for many various traders. To justify this assertion, we need to analyse firstly the commercial context of bills of lading and secondly current practices deployed to solve the most common problems facing paper bills of lading in our era, and to illustrate briefly the role of legal norms and practices as embedded in the constituent norms of international merchants.

The bill of lading is an institution that facilitates not only sale of goods but also other various transactions. The current use of bill of lading, from the 20th century and onwards, is intertwined with documentary sales (e.g. CIF contract), documentary payments (e.g. documentary letters of credit and documentary collection) and the provision of insurance. For instance, the majority of documentary letters of credit, as a means of payment, require the presentation of bills of lading as a security for the buyer in the underlying sale contract (i.e. documentary evidence of the shipment of goods). Issuing and

110 J Commons, "The Problems of Correlating Law, Economics and Ethics" [1932] 8 Wisconsin Law Review 3.

111 United Nations Conference on Trade and Development (UNCTAD) (2003): The Use of Transport Documents in International Trade (UNCTAD/SDTE/TLB/2003/3) (New York, UNCTAD), 26 November. Available online at: http://www.unctad.org/en/docs/sdtetlb20033_en.pdf (accessed 11 January 2017). The purpose of the survey was to study 'the use of traditional transport documents in international trade'.

confirming banks in letters of credits also use bills of lading as a security for payment by, being named as the consignees or keeping the physical possession of original bill of lading until they are reimbursed by the buyer. Bills of lading are also used to raise money by being sold as the payer is confident that by taking the exclusive possession of the bill of lading as a holder he will have the exclusive right to possess and own the goods represented in the bill.¹¹²

The most common problem the transactions based upon paper bills of lading encounter is that often oil and dry cargos arrive before the arrival of paper bill of lading, because goods are resold by many various parties. Under each sale the bill is usually used as a security not only for the goods in the sale contract but also for finance and insurance. So the same bill is exchanged by different actors (e.g. bankers, insurers and buyers) via a traditional method of delivering and checking hardcopy papers which takes time (e.g. in letters of credit the bank has five working days to examine the bill of lading before delivering it to the buyer or other banks)¹¹³ rather than an online system whereby the various actors can have an instant access to the bill.¹¹⁴ This causes a significant inconvenience to carriers, as storing the goods at the port of delivery is costly and the alternative choice of keeping the goods onboard the vessel leads to the loss of potential profits from hiring an empty space. It may even cause a delay loading and carrying goods of others from the port of delivery which may result in significant damages for not delivering goods on time. The document of title function in bills of lading means that the carrier is obliged to deliver only against the presentation of original bill of lading by the holder. This is understandable in transferable (order) bills of lading as the carrier does not know the identity of the consignee, to whom the bill is transferred, until the bill is presented to the carrier. But for straight bills of lading in which the consignee is named, the carrier knows in advance the identity of the consignee. If goods arrive before the arrival of a straight paper bill of lading, it would therefore seem a reasonable practice that the carrier should be entitled to deliver to the named consignee without the need of the presentation of bill of lading (after sufficient proof of the identity of the consignee).¹¹⁵ Such a practice was rejected by the law. In *The Rafaela S*¹¹⁶ Lord Bingham, with whom the other judges in the House of Lords agreed, held that a straight bill of lading in that case was a document of title, under the Hague Visby Rules, as it was expressly stated in the carriage contract in that case that the carrier must only deliver the goods against the presentation of the bill of lading. His Lordship elaborated then, *obiter*, after surveying the leading maritime jurisdictions, that any straight bill of lading is a document of title, whether the contract expresses that or not, so the carrier must only deliver against the presentation of the bill. He acutely explained the commercial rationality behind such a position:

“[T]he shipper will not wish to part with an original bill to the consignee or buyer until that party has paid, and requiring production of the bill to obtain delivery is the most effective way of ensuring that a consignee or buyer who has not paid cannot obtain delivery”.

Security of payment is not the sole issue, straight bills of lading, like transferable bills of lading, are used to raise finance - as noted by the Singaporean Court of Appeal.¹¹⁷ Bills of lading can be pledged to a bank for a loan. Banks often refuse to pay pursuant to documentary letters of credit or documentary collections unless the transport document is a bill of lading as they can hold the bill, and hence the goods, until they are paid.¹¹⁸ Because the function as document of title of bills of lading is relied upon to

112 United Nations Conference on Trade and Development (UNCTAD) (2003): “The Use of Transport Documents in International Trade” (New York, UNCTAD), 26 November. Available online at: http://www.unctad.org/en/docs/sdtetlb20033_en.pdf (accessed 11 January 2017). The purpose of the survey was to study ‘the use of traditional transport documents in international trade’.

113 Article 14 UCP 600.

114 P Todd, *Bills of Lading and Banker’s Documentary Credits*, (4th edn, Informa Law from Routledge 2007) paras 1.114-119; L Hickson “The importance adhering to best practice when it comes to bills of lading” [2017] Shipping & Transportation, <https://www.drycargomag.com/best-practice-and-bills-of-lading> (accessed 25 October 2017).

115 *Glyn Mills Currie & Co v East and West India Dock Co* (1880) 6 QBD 475, 492; (1882) 7 App Cas 59, 603.

116 *Jl MacWilliam Co Inc v Mediterranean Shipping Co SA (The Rafaela S)* [2005] 2 AC 423; [2005] 1 Lloyd’s Rep 347 [6] 108.

117 *Peer Voss v APL Co Pte Ltd* [2002] 2 Lloyd’s Rep 707 [53]; *The straight bill of lading: past, present, and future*. Available from: https://www.researchgate.net/publication/306285814_The_straight_bill_of_lading_past_present_and_future [accessed Sep 10 2018].

118 D Lee & P Sooksripaisarnkit, “The straight bill of lading: past, present, and future” [2012] online: https://www.researchgate.net/publication/306285814_The_straight_bill_of_lading_past_present_and_future (accessed Sep 10

serve as security for payment and finance, a function that is other than its original function and is interlinked with other transactions, it has become more embedded in the commercial environment. The practice of delivery without the need to present a straight bill of lading was therefore rejected by the law. Accordingly, the law does not reflect the expectation of the immediate transacting parties (e.g. shipper and carrier) if it is in conflict with fundamental institutions in commerce which is here the security of finance. By doing so the law functionally reflects the reasonable expectation of various transacting parties in trade groups who have interdependent interests in a particular transaction. The solution of non-transferable sea waybill which is a transport document by which the carrier delivers to the consignee identified without the need for the presentation of waybill, does not effectively substitute bills of lading as one cannot envisage the use of sea waybills for chain of sales of floating goods as the holder of waybill may not have the right of disposal.¹¹⁹ Documentary sales such as CIF contract is commonly used in international trade and most banks involved in financing documentary letters of credit, and rely on transportation documents to secure their reimbursement, would refuse to accept sea waybills. Unlike bills of lading, they do not provide the necessary security of payment and delivery.¹²⁰ Hence, due to concerns with security of payment and finance, the practice around the bill of lading, as being embedded in the social environment with various transactions, has resisted a replacement by alternative practices such as the use of sea waybill.

Therefore, the most common solution amongst carriers for the problem of the late arrival of paper bill of lading is the current practice of delivering in reliance upon a Letter of Indemnity (LoI).¹²¹ Whereby, the carrier will deliver the goods to a person who claims to be the true owner of goods, but who is waiting to receive the bill of lading, against a LoI in terms that the receiver of the goods will compensate the carrier for damages if it transpires that the receiver is not the legitimate holder of the bill at the time of delivery. The practice of LoI does not aim to replace the function of the bill as a document of title, it rather intends to solve the problem posed by delay in arrival of documents, but in doing so it undermines the informal norm of demanding a bill of lading as proof of right to possession. This poses risks for carriers. In law it is the carrier who will be liable for wrongful delivery if it transpires that the provider of the LoI is not the holder of the bill of lading.¹²² The strength of the LoI depends on the financial covenant of the provider, so if he becomes insolvent legal enforcement of the letter will not be beneficial. Also, LoI may not cover all contemplated damages that the carrier may be liable for as a result of a wrongful delivery, and it may lead to unexpected legal claims and complexities. In the *Zagora* case¹²³ eight months after a delivery against a LoI the ship was arrested at the same port of delivery, and it took time to determine whether the receiver of the goods was an agent acting on behalf of the owner of goods or the shipper. In the insurance sector, the London P&I Club rules do not cover liabilities arising from wrongful delivery so the LoI is not accepted.¹²⁴ To summarise the practice of offering and relying upon LoI has become a defective norm amongst international merchants because: although it is dependent upon the bill of lading as document of title it is not consistent with it. The law does not fully support such a practice and the insurance sector undermines the practice as they provide insurance to cover liabilities towards the rightful holder of bills of lading. Given that the use of LoIs has become a recognised practice and that it requires a

2018).

119 M Goldby, *Electronic Documents In Maritime Trade: Law And Practice*, (University Oxford Press 2013) para 5.54.

120 United Nations Conference on Trade and Development (UNCTAD) (2003): "The Use of Transport Documents in International Trade" (New York, UNCTAD), 26 November. Available online at: http://www.unctad.org/en/docs/sdtetlb20033_en.pdf (accessed 11 January 2017). The purpose of the survey was to study 'the use of traditional transport documents in international trade' and it was proved in the survey that 88% use transferable bills of lading and of them 77% exclusively use bills of lading because of the security provided by transferable bills of lading for documentary credits and the security provided by bills of lading for delivery and payment.

121 L Hickson "The importance adhering to best practice when it comes to bills of lading" [2017] Shipping & Transportation, <https://www.drycargomag.com/best-practice-and-bills-of-lading> (accessed 25 October 2017).

122 *Jl MacWilliam Co Inc v Mediterranean Shipping Co SA (The Rafaela S)* [2005] 2 AC 423; [2005] 1 Lloyd's Rep 347; Gard Guidance on Bills of Lading: <http://www.gard.no/Content/20651968/Gard+Guidance+bills+of+lading+March+2011.pdf> (accessed May 2019).

123 *Oldendorff Carriers GmbH & Co KG v SCIT Services Ltd. SCIT Trading Ltd v Xiamen C&D Minerals Co Ltd. mv 'Zagora'* [2017] 1 C.L.C. 426.

124 Gard Guidance on Bills of Lading: <http://www.gard.no/Content/20651968/Gard+Guidance+bills+of+lading+March+2011.pdf> (accessed 01/03/2019).

performance between international merchants (i.e. the shipper and carrier), it has not become a transaction that it has its own on-going concern. It remains both parasitic upon, and inconsistent with, the bill of lading.

Summery of the argument and advice for electronic platforms

The above analysis examined the relation between the law, the finance sector and the insurance sector on the one hand and the new practices in relation to the norms connected with the function of document of title performed by bills of lading on the other hand. It affirms our proposition that the legal and informal norm of regarding bills of lading as document of title that proves right to possession serves the fundamental function of the security of the circulation of goods, finance and insurance, in other words the bill as document of title is an embedded norm in the commercial environment. Any reform needs to take this into account. The current practices of relying upon Lol if persisted in and rationalised must eventually undermine the role of the bill as document of title. This in turn will undermine its multiple functions that rest upon its being a transferable document of title. What is needed is a technological innovation such as DLT that leads to an efficient speed in the logistic process of the circulation of sale, finance and insurance transactions through automatic validation of digitised documents enabling peer to peer transaction. At the time of writing, the current platforms such as Bolero and essDOCS do not accommodate peer-to-peer exchange of bills of lading as there is a central administration, through which the parties exchange, which validates the transaction rather than an automatic or self-executed validation.

3- Constituent norms as principles

The constituent norms of the bill of lading operate as principles¹²⁵ that need subsidiary norms, operating as rules, to provide more details and thus certainty. For instance, the norm that a bill of lading provides a receipt for goods is supplemented by subsidiary legal rules laid down by Conventions as to what details should be inserted in the bill of lading (e.g. leading marks of goods, quality and quantity of goods and so on).¹²⁶ Platforms for electronic bills of lading should only be based on the constituent norms of bills of lading as principles (common meaning and basic function), as details should be left to the applicable law between the parties using the platform of electronic bills of lading. The users of the platform of eesDOCS are forced to agree that English law is the applicable law and English courts have the exclusive jurisdiction,¹²⁷ and so the details of the bill of lading (e.g. description of goods) are governed by Carriage of Goods by Sea Act (1971) which gives force to Hague Visby Rules.¹²⁸ This will limit the available options for traders to choose the law that they wish to apply. For instance, it could be preferable to apply the law of a state that has ratified Hamburg Rules.¹²⁹ The Hamburg Rules provide greater details of the contents of the bill of lading and the evidentiary effect of bill of lading.¹³⁰

V. CONCLUSION

The history of paper bills of lading in the first section of part one of the article provided beneficial lessons for future platforms intending to facilitate an electronic format of bills of lading. The lessons are: (1) bills of lading are means of proof and authenticity; (2) the form of bills of lading must be capable of being exclusively possessed and moveable; (3) the characteristics of bills of lading are effectively social norms that are enforced through informal distributed powers as well as being legally enforceable norms; (4) an international platform facilitating the use of bills of lading must deal with the

125 For the differences between principles and rules: D Kennedy, *Form and Substance in Private Law Adjudication*, [1976] 89 Harvard Law Review 1685.

126 E.g. Article III Hague Visby Rules (1968).

127 <https://www.essdocs.com/policies>.

128 Hague Visby Rules (1968).

129 Article 3 Hague Visby Rules (1968).

130 Articles 14-16 Hamburg Rules (1978.)

common elements, the basic functions, of each characteristic of bills of lading; (5) apart from the current lack in the market for a platform with the sound structure to facilitate electronic bills of lading, there might be current social strains affecting the use of electronic bills of lading worldwide.

For the first time in literature, the second section provided a conceptual framework for analysing the social context and practice which embody and depend upon the norms advanced through bills of lading. It clarified the meaning of social norms, identified the essential elements for a structure that is capable of producing and accommodating social norms, and applied the analytical framework to the constituent norms of bills of lading and the relationship between the law and practice of bills of lading. The essential elements of the social structure of bills of lading are: (A) The Formation of a Group for Cooperative Behaviour; (B) Necessary Features of Norm Producing and Maintaining Groups (i.e. reciprocal informal powers, network of gossip, various social roles to ensure noticeability of who defects the norm) and; (C) The Dynamic Relationship between Practice and Law. From the response of case law, finance practices and insurance practices to the solutions provided in the transportation practices for the problem of the delay of paper bills of lading, we assert that the security in the circulation of goods, finance, and insurance are fundamental requirements of international commerce. The bill of lading plays an essential role in contemporary international trade. Because the functions of document of title, and transferable document of title, embedded in bills of lading directly serves such a fundamental on-going transactional form, it has become an embedded in the norms of international merchants in ways that are connected to many various transactions and therefore very powerful.

In the second part of this article, published in the next issue of the journal, we evaluate the type of Distributed Ledger Technology that could facilitate the adoption and use of electronic bills of lading. We identify potential legal difficulties that may face the proposed DLT, and how these difficulties may shape the type of DLT suitable for electronic bills of lading.