ELECTRONIC BILLS OF LADING

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1. Introduction

The ocean bill of lading has undergone various transformations over the years, from a document of description to a document of title representing the goods it describes.[1] The marketplace has developed dramatically over the past 20 years.[2] Most of the legislation dealing with bills of lading and shipping documentation was drafted in an age well before computers, the internet and electronic data interchange.[3] This electronic revolution and the ever changing technology brings with it complexities and challenges.[4] Therefore there is some legal uncertainty with regard to the electronic transfer of the bill of lading.[5] The bill of lading has failed to adapt to the technological advancements of the modern market and the shipping industry. As a result of this, the paper – based bill of lading has to some extent lost its commercial credibility.[6]

A recent development is the electronic bill of lading. At this stage it is mostly done by the transfer of bills of lading through EDI. EDI is the interchange of commercial data structured on the basis of approved standard messages between computer systems and effected by electronic means. The Internet has also opened up new possibilities for the electronic transfer of documents.[7] These electronic transfers of the bills of lading through the EDI process and the Internet cause certain legal problems and uncertainties. These include the requirement that the document has to be in writing, and aspects like signature, negotiability and liability.[8]

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1 Hare J *Shipping Law & Admiralty Jurisdiction in South Africa* (Juta & Co Ltd 1999) 567
2 Hare *Shipping Law* 567
3 Hare *Shipping Law* 567
4 Hare J 2002 Maritime Law Update South Africa 2002 (Found on the Internet) http:www.wylie.co.za (Date of use 26 October 2005)
5 Hare *Shipping Law* 568
6 Schmitthoff CM *Scmitthoff's Export Trade: the law and practice of international trade* 10th ed (London Sweet & Maxwell 2000) 483
7 Hansson A *The Negotiability of Electronic Bills of Lading* (LLM – Thesis University of Cape Town 1999) 1
8 Hansson *The Negotiability of Electronic Bills of Lading* 12

The aim of this mini-dissertation is to investigate the reasons for the demise of the paper based bill of lading and whether it can effectively be replaced by the electronic bill of lading. Firstly the role and the function of the bill of lading in South African Law will be examined. Secondly the manner of transferring documents electronically through EDI and the Internet will be investigated. Thereafter the electronic transfer of data will be discussed with reference to South African Legislation and in particular the *Sea Transport Documents Act* 65 of 2002 and the *Electronic Communications and Transactions Act* 25 of 2002. International model rules with emphasis on UNCITRAL[9] and the CMI[10] Model Rules will also be discussed. Thereafter the various core legal issues with regard to the electronic transfer of documents, such as the principle that a bill of lading must be in writing, the formation and validity of electronic contracts, the problems regarding digital signatures, the admissibility of electronic evidence and the negotiability of electronic transferred documents will be discussed. Lastly some conclusionary remarks and proposals will be made.

9 United Nations Commission on International Trade Law
10 Comity Maritime International

2. The bill of lading

2.1. Background

The bill of lading is a distinctive instrument of international trade.[11] In ancient times the bill of lading was used as a product of mercantile convenience and the functions of the bill of lading developed with the use thereof.[12] The bill of lading operated in the sixteenth century and continued to develop as a respected document in international trade.[13] The bill of lading can be defined as:

> A document which evidences a contract of carriage by sea and the taking over or loading of the goods by the carrier, and by which the carrier undertakes to deliver the goods against surrender of the document. A provision in the document that the goods are to be delivered to the order of a named person, or the order, or to bearer, constitutes such an undertaking.[14]

The original function of the bill of lading was to acknowledge that the goods have been shipped.[15] After the bill of lading became broadly accepted growing trade eventually necessitated the transfer of title in the goods before they arrived at their destination.[16] It became imperative to endorse the bill of lading to a third party in order to affect transfer of the goods. The bill of lading therefore became a negotiable instrument.[17]

A bill of lading made out to "order" is a negotiable document which provides its owner with title to the goods. According to the Uniform Commercial Code[18] a bill of lading is negotiable if by its terms the goods are to be delivered to bearer or to

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11 Schmitthoff *Export Trade* 481
12 Schmitthoff *Export Trade* 481
13 Schmitthoff *Export Trade* 482
14 Article 1 of the *United Nations Convention on the Carriage of Goods by Sea* Hamburg 31 March 1978
15 Schmitthoff *Export Trade* 483
16 Schmitthoff *Export Trade* 484
17 Muthow E *The Impact of EDI on Bills of Lading – A Global Perspective on the Dynamics Involved* (LLM – Thesis University of Cape Town 1997) 3
18 Hereafter referred to as the UCC

the order of a named person, or where recognised in overseas trade, if it runs to a named person.[19]

There are several important differences between negotiable and non - negotiable documents of title. The most important difference according to American law is that the negotiable instruments are more definite symbols of the goods since the carrier or bailee is under a duty to deliver the goods upon the production of the document.[20]

Another advantage of the paper bill of lading system is that it is well established and has been in use for centuries. Prepared standard contract clauses are available as well as case and statutory law.[21] Furthermore there is a high degree of uniformity in the international use of paper – based bills of lading due to the Hague-Visby Rules.[22]

1.3. South African Law

Every legal system has its own principles relating to international trade. South Africa has an identifiable body of law relating to international trade.[23] Even if increasingly converging with other systems, the South African law of international

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19 Uniform Commercial Code s 7 – 104(1)(a)-(b) 1990

20 Davies GM Jackson WP Nordstrom R "Destination Bills of Lading for Interstate Commerce" 2001 American Business Law Journal 57

21 Yiannopoulos "Ocean bills of Lading: Traditional Forms, Substitutes, and EDI Systems" 1995 Kluwer Law International 17

22 Yiannopoulos 1995 Kluwer Law International 17. The 1924 Hague Rules (the International Convention for the Unification of Certain Rules of Law Relating to Bills of Lading – Brussels Convention) stated that a contract of carriage by sea included only those contracts covered by a bill of lading or any other similar document of title. Therefore the Hague Rules have defined a primary function of the bill of lading, namely that it represents a receipt for the goods actually shipped on board. The Hague Rules were altered by the Visby Amendments of 1968. The Visby Amendments changed the primary function of the bill of lading as a receipt for the goods in one significant respect. When a bill of lading, as prima evidence of the receipt by the carrier of the goods described therein, has been transferred to a third party acting in good faith, the carrier was not entitled to lead evidence to show that the goods were not as described in the bill of lading. The Hague Rules, and the Hague-Visby Rules are contained in a schedule attached to the South African *Carriage of Goods by Sea Act* 1 of 1986. This Act has the force of law and applies in respect of South Africa.

23 Van Niekerk JP Schulze WG *The South African Law of International Trade: Selected Topics* (Saga Legal Publications CC Pretoria 2000) 3

trade remains and will, for the foreseeable future, continue to display its own unique features. By the nature of the types of legal institutions involved, this part of our law finds application in an international setting.[24] South Africa's maritime law has a complex history with its roots in the arrival of the Dutch in 1652 and the implementation of the Dutch legal system.[25] The well developed Dutch maritime law became the maritime law of South Africa.[26] With the arrival of the British at the turn of the nineteenth century the Dutch rule in South Africa came to an end and the English common law system with regard to maritime law was adopted in South Africa.[27] South Africa lost its colonial status in 1910 with the formation of the Union of South Africa. It nevertheless remained a part of the British Empire until it became a Republic in 1961.[28]

Modern maritime law relating to bills of lading, as we know it today, developed primarily in England.[29] The South African maritime law developed parallel to that of English law.[30] Before the *Sea Transport Documents Act* 65 of 2002 came into effect the South African law with regard to bills of lading was described as inadequate and out of date.[31]

1.3.1 Carriage of Goods by Sea Act 1 of 1986

The *Carriage of Goods by Sea Act* 1 of 1986[32] provides that the Hague-Visby Rules subject to the provisions of COGSA, have the force of law and apply in respect of the Republic in relation to and in connection with the following;

> "Contract of carriage" applies only to contracts of carriage covered by a bill of lading or any similar document of title[33]

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24 Van Niekerk and Schulze *Selected Topics* 3
25 Surjan M 2002 Title to Sue at the dawning of the *Sea Transport Documents Act* No 65 of 2002 April 2002 (Found on the Internet) http://www.uctshiplaw.co.za (Date of use 22 July 2005)
26 Surjan 2002 http://www.uctshiplaw.co.za 22 July
27 Surjan 2002 http://www.uctshiplaw.co.za 22 July
28 Surjan 2002 http://www.uctshiplaw.co.za 22 July
29 Hare *Shipping Law* 542
30 In various South African cases with regards to the carriage of goods extensively use is made of the English law. See *The Dien Danielsen* 1982 3 SA 534 (N) and *The Atticon: Lendalease Finance Co Ltd v Corporation de Mercadeo Agricola* 1976 4 SA 464 (A).
31 Surjan 2002 http://www.uctshiplaw.co.za 22 July
33 hereafter referred to as COGSA
35 Section 1 *Carriage of Goods by Sea Act* 1 of 1986

It is not clear whether an electronic contract of carriage of goods by sea will be recognised for the purposes of the Act. It is also unclear whether a bill of lading can be electronically created.[34]

The Visby Amendments changed the primary function of the bill of lading as a receipt for the goods in one significant respect: when a bill of lading, as prima facie evidence of the receipt by the carrier of the goods described therein has been transferred to a third party acting in good faith, the carrier was not entitled to lead evidence to show that the goods were not as described in the bill of lading.[35]

The *Sea Transport documents Act*[36] came into force on 20 June 2003. Prior to the commencing of the STD Act the *Admiralty Jurisdiction Regulation Act*[37] made English law, as it stood in 1983, applicable in certain circumstances within South Africa. This act obliged the South African courts to apply the English Bills of Lading Act of 1899, where relevant to a dispute being litigated before it.[38] The STD Act applies generally to "sea transport documents"[39] issued in the Republic of South Africa and goods consigned too a destination within the Republic or landed, delivered or discharged here.[40]

The importance of the traditional bill of lading in international trade is self–evident when viewed against its functions.

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36 Gehrke F *New Attempts at Electronic Documentation in Transport Bolero – The end of the experiment, the beginning of the future?* (LLM – Thesis University of Cape Town 1997) 59 The *Carriage of Goods by Sea* Act will be discussed in more detail later in this mini – dissertation.

32 Robinson A 2002 International Bar Association Conference held on October 2002: Letters of Credit and Sea Transport Documents a South African Perspective (Found on the Internet) http://www.deneisreitz.co.za (Date of use 26 October 2005)

37 65 of 2000 hereafter referred to as the STD Act.

38 Act 105 of 1993

39 Anon *The Sea Transport Documents Act* 2003 (Found on the Internet) http://www.wylie.co.za (Date of use 26 October 2005)

40 Section 2(1)(a) of the *Sea Transport Documents Act* 65 of 2000

41 Section 2(1)(b)(i) and (ii) of the *Sea Transport Documents Act* 65 of 2000

1.3.2 Functions of the bill of lading

A basic understanding of the functions of a bill of lading is necessary in order to determine whether surrogates for paper – based bills of lading, such as EDI and the Internet can serve the same functions as traditional bills of lading. The replacing of the bill of lading as a document of title creates the greatest difficulties.[41] The bill of lading has three functions. In ascending order of complexity it stands as a receipt for the goods shipped or received for shipment by the carrier; it may be used as evidence of the contract of carriage; and it may serve as a document passing title.[42] Each function shall be considered in turn.

1.3.2.1 The bill of lading as a receipt for goods shipped

The bill of lading describes the goods that is loaded on board a carrier it states the quantity and their condition.[43] The bill of lading is therefore *prima facie* evidence that the goods shipped are in good condition and order.[44] In the absence of an exception in the contract or at law, the carrier is bound to deliver the goods at the port of discharge "in like good order and condition".[45] This prevents the carrier from claiming previous damage if the goods are in an inadequate condition when delivered to the consignee.[46] The bill of lading therefore attests to the quantity, condition and the quality of the goods shipped.[47] Where the contract of carriage is to be found elsewhere than the bill of lading, the bill of lading may be a receipt, and nothing more.[48]

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42 Williams SM "Something Old, Something new: The Bill of Lading in the Days of EDI" 2000 Transnational Law & Contemporary Problems 555

43 Hare Shipping Law 543

[43] August R *International Business Law Text, Cases, and Readings* 4ed (Pearson Education International 2002) 617

44 *Carriage of Goods by Sea Act* Art III Rule 4

45 *Carriage of Goods by Sea Act* Art III Rule 4

46 Williams 2000 TLCP 561

47 Williams 2000 TLCP 562

48 The *Dien Danielsen* 1982 3 SA 534 (N) The bill of lading was found to be only a receipt that did not affect nor evidence the contractual relationship between the parties which was

2.2.2.2 Receipt as to quantity

When the carrier issues a bill of lading upon the details furnished to it by the shipper and confirmed in the mate's receipt, the bill of lading signifies the number of packages shipped or received for shipment.[49] The bill of lading is filled out in advance by the shipper and when the goods are loaded on board the carrier's tally clerk checks that the goods comply with the listed goods. The Carrier's only duty is to check that the labels comply and that the packages are not damaged. If everything is in order then the agent signs the bill of lading and returns it to the shipper.[50] This is vital to the transferability of the bill of lading because prospective buyers need an explicit commitment to confirm the quantity of goods that they receive upon tendering the bill of lading at the port of discharge. This is the cornerstone of the transferability of the bill of lading.[51]

In English case law *The Belle: Grant v Norway*[52] the court had to consider whether the master of a ship, signing a bill of lading for goods which had never been shipped is to be considered as the agent of the owner in that behalf, so as to make the latter responsible.[53] The court held that the authority of the master of a ship is extensive, and extends to all acts that are usual and necessary for the use and enjoyment of the ship. This is however subject to several well known limitations.[54] The master may sign a bill of lading and acknowledge the nature and quality and condition of goods actually put on board. A master should not issue and sign a shipped bill of lading until the goods are in fact on board. The master has no authority to sign for goods which has not been shipped and such signature will in fact constitute a fraud against the consignee.[55]

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governed by the relevant charterparty. See also *The Menalon* 1995 3 SA 363 (D) at 367 D

49 Hare *Shipping Law* 543

50 August *International Business Law* 618

50 Hare *Shipping Law* 544

51 *The Belle: Grant v Norway* (1851) 138 ER 263

52 Hare *Shipping Law* 544

53 Hare *Shipping Law* 544

54 Hare *Shipping Law* 544

The Hague – Visby Rules[56] effectively displaced the law as set out in *The Belle: Grant v Norway*[57] in relation to the endorsee, but left it intact in relation to the shipper.[58] Therefore except in relation to an endorsee in terms of the *Carriage of Goods by Sea Act,* Article II Rule 4, a statement on the face of a bill of lading confirming a specific quantity shipped, is *prima facie* evidence of that quantity only. It may be rebutted by the carrier, who accordingly bears the onus of disproving the amount stated.[59]

1.3.1.1 Receipt as to Condition

The bill of lading confirms that the goods have been shipped in good order and condition. This too is only prima facie evidence of the condition of the cargo shipped, unless the carrier is estopped form denying the truth of its statement.[60]

1.3.1.2 Receipt as to Marks

The *Carriage of Goods by Sea Act*[61] requires that the carrier should issue to the shipper upon demand, a bill of lading showing the leading marks necessary for identification of the goods.[62] These marks should be furnished in writing by the shipper before loading, and should accord with the marks affixed to the cargo in a manner legible until the end of the voyage. This is a statutory requirement for which there is no parallel at common law.[63]

1.3.1.3 The bill of lading as evidence of the contract of carriage

International traders will almost always enter into a contract of carriage before the bill of lading is issued. The contract of carriage is then evidenced by the bill of lading.[64] The bill of lading is however not the contract itself.[65] The bill of lading

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55 The *Carriage of Goods by Sea Act* 1 of 1986 provides that the Hague – Visby Rules have force of law and apply in respect of South African Law.
56 *The Belle: Grant v Norway* (1851) 138 ER 263
57 The *Carriage of Goods by Sea Act* 1 of 1986 Art III Rule 4
58 Hare *Shipping Law* 545
59 Hare *Shipping Law* 545
60 Act 1 of 1986 Art III Rule 3(a)
61 *Carriage of Goods by Sea Act* 1 of 1986 Art III Rule 3(a)
62 Hare *Shipping Law* 549
63 Muthow *The Impact of EDI of Bills of Lading – A Global Perspective on the Dynamics*

is only issued after the contract of carriage has been entered into. In *Pearson v Goschen*[66] it was decided that the bill of lading is a record of the actual contract of carriage,[67] a shipper would be able to complain upon receiving a bill of lading that does not reflect the agreement between the parties.[68] Therefore the bill of lading is a memorandum of the contract of carriage, repeating in detail the terms of the contract which was in fact concluded prior to the signing of the bill.[69] The bill of lading would however not serve as a contract of carriage in cases of private carriage charter party agreements.[70]

When a bill of lading is transferred to a third party in good faith, the bill of lading states the rights and liabilities between the carrier and the new shipper, since any clauses from the underlying contract of carriage have to be incorporated into the bill of lading to follow transfers of the bill of lading.[71]

1.3.1.4 The bill of lading as the document with which title may be passed

This function was first recognised by the English courts in *Lickbarrow v Mason.*[72] It was stated[73] that the primary purpose of the bill of lading is to dispose of the goods while the goods are still in transit.[74] In mercantile law possession of the bill of lading is also equal to the possession of the goods and the transfer of the bill of lading has the same effect as the delivery of the goods.[75] Only the holder of a document of title can demand the goods from the ship at destination.[76]

Involved (LLM Theses University of Cape Town 1997) 3

64 Hare *Shipping Law* 549

65 *Pearson v Goschen* 1864 17 CBNS 352 see also Hare *Shipping Law* 548

66 A bill of lading normally contains the terms of the contract of carriage.

67 Hare *Shipping Law* 549

68 Hare *Shipping Law* 560

69 A charter party is the hiring of an entire ship in cases where goods require a certain type of vessel or where commodities can be shipped more cheaply in bulk.

70 Hansson *The Negotiability of Electronic Bills of Lading* 12

71 *Lickbarrow v Mason* 1794 5 TR 683

72 See p 2.2

73 Hare *Shipping Law* 560

74 Hare *Shipping Law* 549

75 Hansson *The Negotiability of Electronic Bills of Lading* 12

In South African law the delivery of possession of goods with the *animus possidendi* is a prerequisite for the passing of ownership of goods.[77] In *The Mariannina*[78] the court found that, for the shipper to part from his possession of the goods through the endorsement of a bill of lading, it must abandon its *animus possidendi* in favour of the endorsee.[79] A bill of lading that is transferred by endorsement may effect transfer of either possession, or both possession and ownership of the goods.[80] A consignee, who, as legal holder of a bill of lading, is thereby entitled to claim delivery of the goods from the carrier, is not necessarily the owner of the goods if the parties have intended otherwise.[81] However this transfer of the bill of lading is only a symbolic transfer of the possession of the goods and only the rights in the goods can be transferred to another party as are intended by the parties.[82] In *Garavelli and Figli v Gollach and Gomperts*[83] it was held that:

> During the period of transit and voyage the bill of lading is, by the law merchant, recognised as the symbol of the goods described in it, and the indorsement and delivery of the bill of lading operates as a symbolic delivery of the goods. The property would pass by actual delivery of the goods. The older of the bill of lading is entitled as against the shipper to have the goods delivered to him to the exclusion of other persons. He is thus in the same commercial position as if the goods were in his physical possession.[84]

Only the holder of a bill of lading is entitled to claim delivery of the goods from the carrier.[85] If the carrier delivers the goods to the holder of a first original bill of lading presented to him (one in a set) he is under no obligation to enquire into the

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76 Hare *Shipping Law* 550 also see *The Mariannina* 1976 4 SA 464 (SCA)
77 *The Mariannina* 1967 4 SA 464 (SCA)
78 Hare *Shipping Law* 550
79 Hare *Shipping Law* 550
80 In *The Mariannina* 1967 4 SA 464 (SCA) the Supreme Court of Appeal found that, for the shipper to divest itself of possession of the goods through the indorsement of a bill of lading, it must relinquish its *animus possidendi* in favour of the indorsee. In *The Great Eagle: Sunnyface Marine Ltd v Hitoroy Ltd (Trans Orient Steel Ltd intervening); Sunnyface Marine Ltd v Great River Shipping* 1992 (2) SA 653 (C) the court took into account that the bill of lading remained with the carrier and that legal possession of the cargo had not yet passed to the buyer as a result.
81 Hare *Shipping Law* 551
82 *Garavelli and Figli v Gollach and Gomperts (Pty) Ltd* 1959 1 SA 816 (W)
83 *Garavelli and Figli v Gollach and Gomperts (Pty) Ltd* 1959 1 SA 816 (W) at 821/2
84 Hansson *The Negotiability of Electronic Bills of Lading* 13

title of the holder of the bill or the whereabouts of the other parts of the bill of lading.[86] Under a bill of lading a shipowner is obliged to deliver goods upon the original bill of lading. Delivery without production of the bill of lading constitutes a breach of contract even when made to the person entitled to possession. The English Courts found: (a) that it is accepted practice of the bill of lading contract that delivery is to be effected only against the bill of lading,[87]

(b) a bill of lading maintains its character of a document of title until the contract of carriage is fulfilled by delivery of the goods against the bill.[88]

Upon acceptance of the bill of lading by the carrier, and upon complete delivery of the cargo, the bill of lading is said to be "accomplished" and it ceases to have effect as a document of title.[89]

Consequently a bill of lading provides a legal substitute for physical delivery of the goods. Without it the parties have to await the arrival of the goods at the port of destination. A bill of lading can transfer title from the moment it is issued by the carrier up until it is presented to the carrier for delivery.[90]

The bill of lading as a document of title results in three further uses of the bill: firstly a bill of lading can be used in the course of passing ownership of the goods; secondly it is confirmation of the right of possession and of physical control over the goods; and lastly a bill of lading can be used as security for lenders.[91]

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85 Hare *Shipping Law* p549

86 *Kuwait Petroleum Corp v I & D Oil Carriers Ltd* (The Houda) Court of Appeal 1994 2 Lloyd's Rep 541

87 Hare *Shipping Law* 551

88 *Barclays Bank Ltd v Commissioners of Customs and Excise* 1963 1 Lloyd's Rep 81

89 Hare *Shipping Law* 551

90 Sundaram J 2000 Paperless trading in shipping practice (Found on Internet) HYPERLINK http://www.maritimelegal.com (Date of use 14 May 2005)

91 Hansson *The Negotiability of Electronic Bills of Lading* 13

2.2.2.7 Negotiable bill of lading

The most important function of the bill of lading relates to its negotiability.[92] The "negotiability" of the bill of lading means transferability. Transferability relates to the transfer of title to the goods accompanying the transfer of the bill of lading.[93] A straight bill of lading is a bill of lading that cannot transfer title and it must contain the words "non-negotiable" on its face.[94] The paper – based bill of lading serves as negotiable commercial paper thereby enabling the transfer of title of the goods while they are in transit.[95] This facilitates the holder to either re-sell the goods or to pledge them with a bank to raise money on their security.[96] Thus transfer of the document can effect dealings in the cargo itself.[97]

For a bill of lading to be effective as a negotiable document, the following requirements need to be met:

(a) The carrier should not be required to deliver except against production of a document of title. He should, however, be under an obligation to deliver to the holder.
(b) The carrier who delivers against a document of title should incur no liability towards anybody else.
(c) The carrier who delivers without production of a document of title should be liable to the person entitled to the goods.[98]

When a number of consecutive sales are possible the negotiability of a bill of lading is important since the document represents the goods. It enables the goods to be resold while in transit.[99] When security of a document of title is required, as in a letter of credit transaction, the bill of lading serves as a security function because its holder has the right to possess the goods if payment is not tendered according to the contract.[100]

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92 Williams 2000 TLCP 562

93 Williams 2000 TLCP 562
94 Muthow *The Impact of EDI of Bills of Lading* 3
95 Muthow *The Impact of EDI of Bills of Lading* 3
96 Hansson *The Negotiability of Electronic Bills of Lading* 14
97 Hare *Shipping Law* 551-553
98 Williams 2000 TLCP 563
99 Williams 2000 TLCP 563

The fact that the bill of lading is a document of title presents the biggest obstacle in the implementation of the electronic bill of lading. The effect will be examined later in this paper.

3. Electronic Media

3.1. Disadvantages of the paper – based bill of lading

There are various events that contributed to the loss of credibility of the paper – based bill of lading.[101] The most important of these are the swift progressions made in respect of technology, coupled with the introduction of containerised shipping.[102]

The main disadvantage of the paper - based bill of lading is the costs incurred by this form of sea transport documentation.[103] In the event of cargo or container vessels hundreds of bills of lading can be issued, the paper trail that is generated using the paper – based bill of lading is extremely costly.[104] The paper trail in shipping transactions involving cargo, evidenced by a bill of lading involves several steps.[105] First, the buyer's bank opens a letter of credit with the seller's bank. When the carrier receives the goods, the carrier issues the bill of lading.[106] The seller takes the bill of lading to his bank where the buyer's letter of credit was previously opened and offers the bill for money.[107] The seller's bank sends the bill of lading to the buyer's bank and receives money in exchange. Once the buyer's bank has received the bill of lading it notifies the buyer who then claims it by cash payment. [108] The buyer in possession of the bill of lading has legal title to the goods and, upon producing it, takes delivery from the carrier.[109]

The volume of paper documentation makes the process of the transferring title very slow.[110] Changes in ship design and navigation as well as containerisation have significantly improved the speed and efficiency with which goods can be

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100 Kozolchyk 1996 JMLC197
101 Greiner *EDI and the Traditional Bill of Lading* 2
102 Kozolchyk 1996 JMCL 197
103 Kozolchyk 1996 JMCL 197
104 Williams 2000 TLCP 564
105 Kelly RB "The CMI Charts a Course on the Sea of Electronic Data Interchange: Rules for Electronic Bills of Lading" 1992 Tulane Maritime Law Journal 352
106 Kelly 1992 TMLJ 353
107 Kelly 1992 TMLJ 353
108 Kelly 1992 TMLJ 353

transported.[111] In recent years containerised shipping has simplified and accelerated the handling of cargo. Containerised goods are transported in 20 to 40 foot metal boxes.[112] These boxes are labeled to facilitate identification and the individual goods inside are insulated from potential damage during shipping. Containerised shipping is desirable to shippers and buyers who save money because cargo can be loaded and unloaded quickly.[113] Multimodal transport further accelerates the pace at which goods move.[114] Shipowners have established integrated transport systems between themselves and enterprises representing other modes of transport such as rail, road and air.[115] In these systems the goods remain on the same vehicle, or in the same container. This result in less damage to the goods, greater speed, improved reliability of service, and simplified documentation because fewer parties are involved.[116] In respect of bulk cargo, such as oil, it is common that the cargo will be sold many times over while still in transit. [117] This requires vast amounts of documents to be couriered around the world for endorsement.[118] The outcome is that the goods might arrive at the port of destination prior to the relevant documentation. This results in delays, deterioration of the cargo and demurrage costs as the cargo will not be released to the consignee unless the relevant documents are presented.[119]

The issuing of fraudulent bills of lading has become a matter of international concern. Normally bills of lading are issued in sets of three. There is therefore

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109 Williams 2000 TLCP 564
110 Todd P *Cases and Materials on International Trade Law* 1st ed (London Sweet & Maxwell 2003) 375
111 Todd *Cases and Materials* 375
112 Williams 2000 TLCP 564
113 Muthow *The Impact of EDI on Bills of Lading* 2
114 Williams 2000 TLCP 564
115 Williams 2000 TLCP 565
116 Williams 2000 TLCP 566
117 Myburgh P "Bits, Bytes and Bills of Lading: EDI and New Zealand Maritime Law" 1993 New Zealand Law Journal 324
118 Myburgh 1993 NZLJ 324

the possibility for the fraudulent use of more than one original to sell cargo while still in transit.[120]

The failure of the paper-based bill of lading to be transformed into an electronic format has lead to its decreased usage.[121] It is disadvantages like these that have led to the loss of confidence in the bill of lading within the commercial world. It is necessary that an acceptable electronic format be created.[122]

1.3. The electronic bill of lading through EDI

1.3.1 *What is EDI?*

Electronic commerce is the exchange of electronic messages that have a commercial meaning.[123] EDI is a central part of Electronic Commerce because it enables businesses to exchange business information electronically much faster, cheaper and more accurately than is possible using paper-based systems.[124] It is, however, very important to differentiate between EDI and electronic commerce.[125] Electronic commerce encompasses all aspects of electronic business exchanges, including person-to-person interaction, money transfers, data sharing and exchange.[126] EDI is only a part of electronic commerce that encompasses the exchange of business information in a standardised electronic form. Standard form defines things like the layout of information of an invoice or purchase order.[127]

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119 Muthow *The Impact of EDI on Bills of Lading* 7
120 Greiner *EDI and the Traditional Bill of Lading* 3
121 Greiner *EDI and the Traditional Bill of Lading* 3
122 Mitrakas A *Open EDI and Law in Europe a Regulatory Framework* (Kluwer Law International The Hague 1997) 22
123 Anon 2005 Basic Information on Electronic Data Interchange (EDI) (Found on the Internet) http://www.onlinewomansbusinesscentre.co.za (14 May 2005)
124 Yiannopoulos 1995 KLI 13
125 Sheldon T 1999 EDI Electronic Data Interchange (Found on the Internet) http://www.linktionary.com (Date of use 14 May 2005)
126 Sheldon 1999 http://www.linktionary.com 14 May

EDI can be defined as:

> The interchange of commercial data structured on the basis of approved standard messages between computer systems and effected by electronic means.[128]

In EDI the electronic equivalents of common business documents are transmitted electronically between the computers of trading partners.[129] These electronic documents are given standardised electronic formats and numbers so that everyone involved can correctly interpret the information that is sent to them.[130] These structured and standardised formats are for example the customer's name, the address, quantity of the goods and the reference code of the goods.[131]

A lack of telecommunications facilities is a big obstacle to business.[132] EDI is a means that can significantly influence trade facilitation and business procedures by allowing EDI users to transmit commercial information to the destination before the goods arrive.[133] The advantages of EDI multiply with its deeper incorporation in business performance.[134] EDI increases the speed with which business is conducted by eliminating the delay caused by paper based documentation.[135] Messages sent by EDI are accurate since the information is structured to an agreed format. Lastly digital encryption ensures that the message is authentic, fraud would therefore be reduced.[136] EDI improves the performance of businesses as a whole and it offers substantial advantages to the EDI users.[137] EDI facilitates international commercial transactions irrespective of distance and time differences through the practically instantaneous transmission

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127 Sheldon 1999 http://www.linktionary.com 14 May
128 A Trading Partner is a business that has agreed to exchange business information electronically; they are also companies that have an already established working relationship.
129 Sheldon 1999 http://www.linktionary.com 14 May
130 Anon 2005 www.onlinewomansbusinesscentre.co.za 14 May
131 Mitrakas *Open EDI* 22
132 Mitrakas *Open EDI* 24
133 Mitrakas *Open EDI* 24
134 Kelly 1992 TMLJ 353
135 Muthow *The Impact of EDI on Bills of Lading* 5
136 Muthow *The Impact of EDI on Bills of Lading* 5

of messages.[138] Furthermore EDI helps to ensure the integrity of the documents by decreasing the number of middlemen.[139]

Formats, rules and procedures used for carrying out international trade are highly regulated and standardised; these requirements also transfer to EDI in foreign trade.[140] For computer-to-computer interchange to take place across international borders, international coordination in the development of uniform communication protocols needs to be ensured.[141] There are different forms of standards for EDI.[142] The best known is the ANSIX12[143] and EDIFACT.[144] There are three basic ways in which EDI can travel between computers: firstly it can travel directly form the sender's to the receiver's computer; secondly through a link through the telephone or some other telecommunication system; and lastly EDI can travel through an intermediary computer network, called a VAN (Value-Added Network).[145] Value-Added Network service providers, provides technical support and assists in data security and in the configuration of the required software.[146] Therefore the type of Value-Added network chosen is critical to the operation of the EDI transmission. This network will control the communication between the various parties and will hence be responsible for the smooth operation of the electronic transfer of the relevant documentation.[147]

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137 Mitrakas *Open EDI* 25
138 Kelly 1992 TMJL 353
139 Mulligan RM "EDI in foreign trade: a perspective on change and international harmonization" 1999 Logistics Information Management Volume 12 Number 4 300
140 Mulligan 1999 Logistics Information Management 300
141 Mulligan 2004 Logistics Information Management 300
142 The ANSIX12 is developed by American National Standards Institute, Accredited Standards Committee X12
143 EDI for Administration, Commerce and Transport developed by the United Nations.
144 Wright B The Law of Electronic Commerce EDI, Fax, and E-mail: Technology, Proof, and Liability (Little, Brown and Company Boston 1991) 12
145 Anon 2005 Electronic Data Interchange (Found on the Internet) http://www.va.gov/publ/standard/edifaq/vans.htm 14 May
146 Muthow *The Impact of EDI on Bills of Lading* 6

This service provider may be an affiliate or subsidiary of one of the trading partners, or a completely separate entity.[148] The two parties can even use different third party providers, who in turn exchange information between themselves.[149] As a result there may be multiple contractual relationships involved in the ultimate transfer of information.[150] First there is the relationship between the two parties, the trading partners or users of electronic services. It involves two aspects the relationship involving the decision to exchange information electronically, and the trading relationships which may arise from the informational exchange. Interchange agreements or trading partner agreements are used to regulate the rights and obligations of both parties.[151]

EDI is used in a broad range of industries including manufacturing, transportation, banking, natural resources extraction and health services.[152] The functions of the bills of lading that might be affected by the use of EDI communications includes the following: it serves as a receipt for the cargo by the carrier; is evidence of the contract of carriage with regard to its general terms; the particular details of vessel, loading and discharge ports, the nature, quantity and conditions of the cargo and a document giving the holder a number of rights.[153] This includes the right to claim and receive delivery of the goods at the port of discharge and the right to dispose of the goods in transit.[154]

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147 Boss 1992 Electronic Data Interchange Agreements: Private contracting Toward a Global Environment" 1992 – 1993 Journal of International Law & Business 37

148 Muthow *The Impact of EDI on Bills of Lading* 6

149 Boss 1992 Northwestern Journal of International Law & Business 37

150 Boss 1992 Northwestern Journal of International Law & Business 37

151 Grayton BD "Canadian Legal Issues Arising From Electronic Data Interchange" 1993 U.B.C. Law Review p 261

152 Angel J "Why use Digital Signatures for Electronic Commerce?" 1992 The Journal of Information Law and Technology (JILT) Volume 2 p3

153 Report of the Working Group on Electronic Data Interchange (EDI) on the Work of its Thirtieth Session United Nations Commission on International trade Law Vienna 26 February – 14 June 1996 (Found on Internet) HYPERLINK http:www.uncitral.org (Date of use 22 July 2005)

The EDI message has numerous components or parts incorporated into what is known as a message framework.[155] In its purest form, an EDI message is a compilation of alpha numeric code constructed into a grammatical structure through which the code is organised.[156]

Various fundamental legal problems have arisen through transacting international business in electronic form.[157] The obstacles connected to the use of EDI for electronic bills of lading are the legal requirement of paper-based documentations.[158] A related issue is in what way electronic messages must be conveyed in order to meet the requirements of bills of lading which, for example, must be signed documents.[159]

3.2.2. *Advantages of EDI*

The traditional bill of lading has evolved over time to reflect the problems that arise in international trade.[160] The international maritime community has been at the forefront of the advantage of new technology to simplify and maximise the efficiency of cross-border trades.[161] The international maritime community has been at the forefront of the advantage of new technology to simplify and maximise the efficiency of cross-border trade.[162] Therefore the shipping industry has embraced the concept on an electronic bill of lading.[163]

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154 Ash 2001 HYPERLINK http://www.deneysreitz.co.za 14 May Ash M 2001 7th National Maritime Conference – May 2001: The Removal of "Legal Impediments" to the Full Implementation of EDI in the Maritime Sphere in South Africa (Found on the Internet) HYPERLINK http://www.deneysreitz.co.za (Date of use 14 May 2005)

155 Ash 2001 HYPERLINK http://www.deneysreitz.co.za 14 May

156 Ash 2001 HYPERLINK http://www.deneysreitz.co.za 14 May

157 Mulligan 2004 Logistics Information Management p301

158 Livermore J & Euarjai K 1998 Electronic Bills of Lading and Functional Equivalence Journal of Information, Law and Technology 1998 2 (Found on Internet) HYPERLINK http://www.warwick .ac.uk (Date of use 14 May 2005) p2

159 Ash 2001 HYPERLINK http://www.deneysreitz.co.za 14 May

160 Ash 2001 HYPERLINK http://www.deneysreitz.co.za 14 May

162 Ash 2001 HYPERLINK http://www.deneysreitz.co.za 14 May

The electronic bill of lading is a recent development when it is taken into account how slow the international community is in setting suitable standards for the electronic transfer of documents.[164] This transfer of documents through electronic format is better known as the transfer of bills of lading through electronic data interchange (hereafter referred to as EDI)[165]

The electronic bill of lading is the functional equivalent of a conventional paper-based bill of lading, but the legal principles on which the electronic bill rests are primarily different from those governing the conventional bill.[166] This is simply because the electronic bill is not paper-based. To this end the electronic bill of lading may not fit all the legal definitions of a conventional bill of lading.[167]

The main reason EDI was introduced to shipping documentation is because of the containerisation revolution.[168] Furthermore computers made it possible for shipping documents to be processed faster and more effectively than the traditional paper - based bill of lading.[169]

An EDI system enables the parties to reduce the volume of documentation and the delay caused in transferring the documents. It is beneficial for commercial carriers to adopt the EDI practice, as in doing so it greatly reduces the abovementioned problems with regard to the paper bill of lading and in particular to the late arrival of the bill of lading and it also dramatically reduces costs.[170]

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161 Faber D "Electronic Bills of Lading" 1996 LMCLQ Part 2 p232
162 Faber 1996 LMLQ p232
163 Muthow *The Impact of EDI on Bills of Lading – A Global Perspective on the Dynamics Involved* p4
164 Muthow *The Impact of EDI on Bills of Lading – A Global Perspective on the Dynamics Involved* p4
165 Ash 2001 HYPERLINK http://www.deneysreitz.co.za 14 May
166 Faber 1996 LMCLQ p232
167 Faber 1996LMCLQ p232
168 Myburgh 1993 New Zealand Law Journal p324

In essence an electronic bill of lading is an electronic document.[171] Like its paper-based equivalent it is issued by the carrier to the shipper and then transferred down to successive holders through endorsement thereof.[172] Each holder ads it's digital signature to the endorsement and thereby creates a chain of digital signatures.[173] The eventual holder can prove the route by which the document reached him as well as its content. The holder can therefore prove title, and also the contents of the bill of lading when it was issued.[174]

There are very few problems involved when implementing EDI to substitute non-negotiable bills of lading. It is the transferability of the document that can present problems.[175] The aim of the EDI system is the duplication of the functions of a negotiable bill of lading and therefore authorising successive sales of the goods while the goods are still in transit.[176]

1.4 *The electronic bill of lading through the Internet*

There has been a remarkable increase of Internet users in the past few years.[177] More businesses are turning to the Internet for their trading needs.[178] Although the Internet is very important in international trade little has been written about the legal aspects thereof for electronic bills of lading. This simple introduction to the Internet is by no means comprehensive. It is merely intended to focus

169 Myburgh 1993 New Zealand Law Journal p324
170 Myburgh 1993 New Zealand Law Journal p324
171 Todd *Cases and Materials* p818
172 Todd *Cases and Materials* p818
173 Yiannopoulos 1995 Kluwer Law International p 13
174 Wilson JF *Carriage of Goods by Sea* 4th ed (Longman 2001) p172
175 Electronic Data Interchange (Found on the Internet) HYPERLINK http://www.va.gov.publ/standard/edifaq/general.htm#q2 (Date of use 14 May 2005)
176 Electronic Data Interchange HYPERLINK http://www.va.gov.publ/standard/edifaq/general.htm#q2 14 May

attention on the possible use of the Internet to transfer maritime documents electronically.[179]

Although it is not easy to define the Internet it can loosely be defined as

> the inter – working of existing corporate and government networks using commonly used telecommunications standards.[180]

Trading on the Internet has certain advantages like the adoption of common standards; a distributed directory service capable to electronically contact any organisation in the world; omnipresent network coverage from service providers and widely accepted public domain software.[181] The Internet is however not very secure.[182] It would be necessary to take certain measures to provide adequate security and privacy. It would be necessary to obtain passwords and to establish "firewalls".[183]

It is clear that the Internet will expand dramatically over the next few years.[184] If wide scale international trade is to be conducted on the Internet, drastic measures will have to be taken to rectify the real lack of security.[185] Unless this issue is resolved the Internet cannot reach is full potential. A solution for this problem would be that trading partners would have to agree on an encryption protocol which would then form part of the trading partner agreement.[186] This would only be a solution where the trading partners are known to each other. Difficulties might arise where there are multiple users who would not always be

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177 Wright *The Law of Electronic Commerce* p10
178 Electronic Data Interchange HYPERLINK http://www.va.gov.publ/standard/edifaq/general.htm#q2 14 May
179 Muthow E *The Impact of EDI of Bills of Lading – A Global Perspective on the Dynamics Involved* p5
180 Muthow *The Impact of EDI of Bills of Lading – A Global Perspective on the Dynamics Involved* p5
181 Wright *The Law of Electronic Commerce* p26
182 Muthow *The Impact of EDI of Bills of Lading – A Global Perspective on the Dynamics Involved* p5
183 Muthow *The Impact of EDI of Bills of Lading – A Global Perspective on the Dynamics Involved* p6
184 Electronic Data Interchange HYPERLINK http://www.va.gov.publ/standard/edifaq/general.htm#q2 14 May
185 Wright *The Law of Electronic Commerce* p12

known to each other. It would make such an agreement a practical impossibility.[187]

1.4.1 *The difference between EDI and the Internet*

For many years companies have exchanged business data over a range of communication networks but now there is accelerated expansion and radical changes, driven by the exponential growth of the Internet[188].

Technically, EDI messages are transmitted in very much the same way that e-mail messages are transmitted through the Internet.[189] EDI can be distinguished from the Internet in that the exchange is computer-to-computer whereas the Internet is person-to-person via a computer.[190] Furthermore EDI implies that the receiver's computer will be able to integrate and process the documented messages without the need to re-key information.[191] EDI's unique feature is that its messages are structured and coded in accordance with a standard agreed upon by the sender and receiver.[192] The Internet, to a lesser extent are unstructured in that the author is free to incorporate virtually any desired text and symbols, subject only to the ability of the receiving machine to print or display them.[193] EDI is machine-readable, whereas the Internet is human-readable, text based means of communication.[194] The advantage of structured and coded data is that the receiving computer can automatically transfer it into diverse application programs such as inventory management software.[195] Structured data means that the basic elements of paper based forms remain in essence intact. This means that the name of the customer, the address, the quantity of the goods and the reference code of the goods will remain intact.[196] This is unlike data in paper,

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186 Angel 1992 JILT p1
187 Wright *The Law of Electronic Commerce* p10
188 Wright *The Law of Electronic Commerce* p11
189 Mulligan 2004 (Logistics Information Management) p299
190 Wright *The Law of Electronic Commerce* p10
191 Wright *The Law of Electronic Commerce* p11
192 Grayton 1993 (U.B.C. Law Review) p260
193 Wright *The Law of Electronic Commerce* p10
194 Mitrakas *Open EDI* p22

fax, telex or the Internet that must be re-keyed in order to reach application programs.[197] The elimination of human interference reduces data entry errors.[198]

Lastly the question is raised if the Internet can be seen as a substitute for EDI.[199] Many traders see e-mail and the Internet as a cost-effective alternative to EDI.[200] This means that EDI and the Internet would be used in conjunction with CGI.[201] The computer would process the script and an order would be placed electronically.[202] This is a viable and cost effective means to transmit documents electronically, especially where the level of security required is not too severe.[203] E-Mail would prove itself useful where companies seek to establish relationships which in turn might lead to contractual negotiations. Once the transfer of the actual documents is required, the trader might prefer to make use of a more secure network.[204]

4. Legal aspects of electronic transfer of data

Electronic transfers do not only refer to EDI but also the internet. EDI requires a common set of standards to be accepted for communication to be effective.[205] In the early days of EDI, electronic message formats were designed to meet the needs of individual organisations.[206] The different companies using EDI connected their computers together based on proprietary standards. These standards had certain limitations and the need arose to not only communicate

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195 Wright *The Law of Electronic Commerce* p10
196 Mitrakas *Open EDI* p22
197 Buttigieg M Electronic Bills of Lading (Found on Internet) HYPERLINK http://www.webcom.com/pjones/ediema (Date of use 22 July 2005)
198 Buttigieg 2005 HYPERLINK http://www.webcom.com/pjones/ediema 22 July
199 A CGI script would mean a computer program that runs on the host computer and with which the client's computer can interact. CGI scripts can be used to provide security example a password program would allow only certain authorised users to access the information.
200 Buttigieg 2005 HYPERLINK http://www.webcom.com/pjones/ediema 22 July
201 Bittigieg 2005 HYPERLINK http://www.webcom.com/pjones/ediema 22 July
202 Muthow *The Impact of EDI of Bills of Lading – A Global Perspective on the Dynamic Involved* p10
203 EDI Standards – UN/EDIFACT (Found on Internet) HYPERLINK http://www.un.org (Date of use 14 May 2005)

with trading partners but also with other players within the industry.[207] This need guided the way to the development of industry standards such as ODETTE[208] for traders in the automobile industry. Although there were industry standards in place, companies and organisations became involved in cross-industry trading and the need for a national standard became evident.[209]

Therefore if EDI is to succeed like the paper-based system, international harmonisation and standardisation must be achieved across al functional groups and industry sectors on message standards and structures.[210] EDI will have to be incorporated into an acceptable legal framework.[211] Hereafter South African law will be considered and thereafter the various international model rules will be discussed. Model rules have been promulgated by several international organisations as a result of the growing interest in EDI.[212]

The following is not a comprehensive study of the various Model rules but rather a brief discussion of the Model rules focusing on issues with regard to electronic bills of lading. In this discussion the focal point will be UNCITRAL and the CMI[213] rules for electronic bills of lading.

1.3. South African Legislation

1.3.1 Carriage of Goods by Sea Act 1 of 1986

The *Carriage of Goods by Sea Act*[214] provides that the Hague-Visby Rules subject to the provisions of COGSA, have the force of law and apply in respect of

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204 Mulligan RM "EDI in foreign trade: a perspective on change and international harmonization" 1999 Logistics Information Management Volume 12 Number 4 p 299

205 Mulligan 2004 Logistics Information Management p299

206 Organization for Data Exchange by Teletransmission in Europe

207 EDI Standards – UN/EDIFACT (Found on Internet) 2005 HYPERLINK http://www.un.org 14 May

208 Mulligan 2004 Logistics Information Management p299

209 Yiannopoulos 1995 Kluwer Law International p15

210 hereafter referred to as the Hague Rules

213 The Comite Maritime International[213] published in 1990 a set of model rules that are in fact an extension the United Nations Rules for Electronic Data Interchange.[213] The CMI rules are available to any party that is willing to abide by them.

220 Act 1 of 1986 hereafter referred to as COGSA

the Republic in relation to and in connection with the following:[215] The carriage of goods by sea in ships where the port of shipment is a port in the Republic, whether or not the carriage is between ports in two different states within the meaning of article X of the rules;[216] a bill of lading if the contract contained in or evidenced by it expressly provides that the rules govern the contract;[217] a receipt which is a non-negotiable document marked as such if the contract contained in it or evidenced by it or pursuant to which it is issued is a contract or the carriage of goods by sea which expressly provides that the rules are to govern the contract as if the receipt were a bill of lading.[218]

In section 1 it is stated that

> "Contract of carriage" applies only to contracts of carriage covered by a bill of lading or any similar document of title[219]

It is not clear whether an electronic contract of carriage of goods by sea will be recognised for the purposes of the Act. It is also unclear whether a bill of lading can be electronically created.[220]

The International Convention for the Unification of Certain Rules of Law Relating to Bills of Lading – Brussels Convention stated that, for the purposes of the rules, a contract of carriage by sea included only those contracts covered by a bill of lading or any other similar document of title.[221] Article III of the Hague Rules provided that:

> (g) a shipper could demand that a carrier who has received the goods, issue a bill of lading;
> (h) the bill of lading identify the goods shipped as described in writing by the shipper;

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221 Butterworths p160
222 Butterworths p160
223 Butterworths p161
224 Butterworths p163
225 Article 1 *Carriage of Goods by Sea Act* 1 of 1986
226 Gehrke F *New Attempts at Electronic Documentation in Transport Bolero – The end of the experiment, the beginning of the future?* (LLM – Thesis University of Cape Town 1997) p59
211 *International Convention of the Carriage of Goods by Sea Act for the Unification of Certain Rules Relating to Bills of Lading*, August 25, 1924 (hereafter referred to as the Hague Rules)

(i) the bill of lading evidence the number of packages or pieces alternatively the quantity or weight, as the case bay be, as described, in writing by the shipper;

(a) the bill of lading reflect the apparent order and condition of the goods at the time they were received by the carrier;

(k) the shipper be entitled to request that the bill of lading so issued by reflected as a "shipped" a bill of lading;

(a) once a bill of lading had been issued, it would be regarded as being prima facie evidence of the marks, quantity and apparent good order and condition of the goods.[222]

The Hague Rules defined a primary function of the bill of lading, namely that it represents a receipt for the goods actually shipped on board.[223] Therefore by issuing a bill of lading it was intended that the bill of lading bear the signature of the person who issued the bill and that the date on the bill of lading represent the date when the goods were loaded on board the ship.[224]

In 1968, a Protocol to the 1924 Convention was agreed at Brussels and the Rules as amended by that Protocol is called the Hague – Visby Rules.[225] The Hague – Visby Rules were designed to amend certain provisions of the Hague Rules that caused particular problems. The Visby Amendments changed the primary function of the bill of lading as a receipt for the goods in one significant respect: when a bill of lading, as *prima facie* evidence of the receipt by the carrier of the goods described therein has been transferred to a third party acting in good faith, the carrier was not entitled to lead evidence to show that the goods were not as described in the bill of lading.[226] A major change was also made to Article IV rule 5[227], dealing with limitation of liability. There was an increase in

212 Rule III of the Hague Rules
213 Robinson A 2002 HYPERLINK http://www.deneisreitz.co.za 26 October
214 Robinson A 2002 HYPERLINK http://www.deneisreitz.co.za 26 October
215 Gaskell N Asariotis R Baatz Y *Bills of Lading Law and Contracts* (London: LLP Professional Publishing 2000) p5
216 Robinson A 2002 HYPERLINK http://www.deneisreitz.co.za 26 October
217 of the Hague Rules

the package limit,[228]an introduction of an alternative limit based on weight, and a specific provision dealing with limitation of liability in respect of containers.[229]

1.3.2 Sea Transport Documents Act 65 of 2000

The *Sea Transport documents Act*[230] came into force on 20 June 2003. Prior to the commencing of the STD Act the *Admiralty Jurisdiction Regulation Act*[231] made English law, as it stood in 1983, applicable in certain circumstances within South Africa. This act obliged the South African courts to apply the English Bills of Lading Act of 1899, where relevant to a dispute being litigated before it.[232] The STD Act applies generally to "sea transport documents"[233] issued in the Republic of South Africa and goods consigned too a destination within the Republic or landed, delivered or discharged here.[234] The definition of "sea transport documents" includes bills of lading.[235] It further applies to all documents with regard to which proceedings are to be taken in any court or arbitration in the Republic of South Africa.[236] The act therefore excludes the otherwise applicable legal system in favour of its own provisions.[237]

This act was designed to regulate not only the traditional "to order" bills of lading, but also the numerous other similar documents including electronic bills of lading.[238] In many ways the Act has achieved that purpose but unfortunately other Acts such as COGSA which incorporates the Hague – Visby Rules, have not been amended in line with the STD Act.[239] This means that certain

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218 to around £500

219 Gaskell *Bills of Lading: Law and Contracts* p 5

227 65 of 2000 (STD Act). This Act was assented to by the President and published by the Government Gazette No. 21884 (Vol 426) of December 2000.

228 Act 105 of 1993

229 *The Sea Transport Documents Act* 2003 (Found on the Internet) HYPERLINK http://www.wylie.co.za (Date of use 26 October 2005)

230 Section 2(1)(a) of the *Sea Transport Documents Act* 65 of 2000

231 Section 2(1)(b)(i) and (ii) of the *Sea Transport Documents Act* 65 of 2000

232 Section 2 of the *Sea Transport Documents Act* 65 of 2000

233 Section 2(1)(c) of the *Sea Transport Documents Act* 65 of 2000

234 Neels JL 2003 Recent Developments in Private International Law (Found on the Internet) HYPERLINK http://www.rau.ac.za (Date of use 26 October 2005)

235 Gehrke *New Attempts at Electronic Documentation in Transport Bolero – The end of the experiment, the beginning of the future*? p6

236 Gehrke *New Attempts at Electronic Documentation in Transport Bolero – The end of the experiment, the beginning of the future*? p6

documents dealing with the carriage of goods by sea will be governed by the STD Act but they will fall outside the provisions of COGSA.[240]

The STD Act's influence on the situation of electronic transfer of documents is however limited.[241] The STD Act is intended to be open for electronic documents. Section 3(1)(b) states that a sea transport document may be transferred through the use of a telecommunication system or an electronic or other information system.[242] The definition of a sea transport document does not include any electronic form of documents.[243] The Minister of Transport may by regulation extend the definition to electronic forms of such documents.[244] It is a debatable point whether such regulations are in fact still necessary, given that the *Electronic Communications and Transactions* Act[245] lays the foundation and effectively provides for the use of the equivalent of an electronic bill of lading.[246]

Sea transport documents may also be transferred by the holder by delivery of the document, endorsed as may be necessary.[247] The holder of a sea transport document is a person that is in possession of the original sea transport document, or possession of that document is held on that person's behalf, and that person is:

(b) the person to whom the document was issued;
(n) the consignee named in the document; or
(a) a person to whom the document has been transferred in accordance with subsection (1)[248]

The question of whether a transfer of a document should release the transferor from his obligations has been answered.[249] The STD Act deems the holder of a

237 Hartwell M *Sea Transport Documents Act 2000* 2005 at (Found on the Internet) HYPERLINK http://www.deneysreitzattorneys.co.za (Date of Use 22July 2005)
238 Hartwell 2005 HYPERLINK http://www.deneysreitzattorneys.co.za 22 July
239 Section 3(1)(b) of the *Sea Transport Documents Act* 65 of 2000
240 Section 1(a)-(e) of the *Sea Transport Documents Act* 65 of 2000
241 Hartwell 2005 HYPERLINK http://www.deneysreitzattorneys.co.za 22 July
242 Act 25 of 2002
243 International Transport & Trade Department E - mail Flyer 2003 (Found on the Internet) HYPERLINK http://www.wylie.co.za (Date of use 26 October 2005)
244 Section 3(1)(a) and (b) of the *Sea Transport Documents Act* 65 of 2000
245 Section 3(2)(a),(b) and (c) of the *Sea Transport Documents Act* 65 of 2000

sea transport document to have ceded his rights and delegated his obligations to the new holder unless the transferor has bound himself to perform a particular obligation personally.[250] Therefore a transferor of rights will be released from his obligations unless he has bound himself to perform a particular obligation personally.[251]

Where a document represents goods to have been shipped on board and is signed by a duly authorised person on behalf of the carrier, such representation will be regarded as *prima facie* evidence that the goods have in fact been shipped *"in apparent good order and condition"*. The carrier can however lead evidence to the contrary.[252]

Unlike the United Kingdom's *Carriage of Goods by Sea Act* of 1992, the South African *Sea Transport Documents Act*[253] does not distinguish between the rights to delivery transferred to the person who becomes the holder of the bill of lading[254] and any obligations or liabilities under the bill.[255] The STD Act provides that merely a holder of a bill of lading is subject to the same obligations and entitled to the same rights as the person to whom the bill was originally issued.[256]

The act removes any doubt about whether or not in South African law a consignee of goods shipped by bill of lading or other shipping contract has title to sue the carrier.[257]

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246 International Transport & Trade Department E - mail Flyer 2003 HYPERLINK http://www.wylie.co.za 26 October
247 *delectus personae*, Section 4 of the *Sea Transport Documents Act* 65 of 2000
248 International Transport & Trade Department E - mail Flyer 2003 HYPERLINK http://www.wylie.co.za 26 October
249 Section 6 of the *Sea Transport Documents Act* 65 of 2000
250 Act 65 of 2000
251 as does section 2 of the UK Act
252 Where the UK Act provides in section 3 that these only arise if demand to delivery or a claim is made.
253 International Transport & Trade Department E - mail Flyer 2003 H YPERLINK http://www.wylie.co.za 26 October
254 Hare J 2002 HYPERLINK http://www.wylie.co.za 26 October

1.3.3 Electronic Communications and Transactions Act 25 of 2002

Legally protected electronic transactions have become a reality in South Africa.[258] The *Electronic Communications and Transactions Act* 25 of 2002 came into effect[259] on 30 August 2002.[260] This act is a very welcome piece of legislation. It addresses the more important and pressing e-commerce issues including the validity of electronically concluded agreements, the legal validity of electronic data, the admissibility of electronic documents in courts of law and the legal status given to electronic signatures.[261] It is the absence of such legislation in South Africa that led to much confusion and speculation as to the legal implications of various e-commerce activities.[262] The object of ECTA is to facilitate electronic transactions and communications, to inspire confidence in the use of such medium, and to encourage universal accessibility of e-commerce by all sectors of the population.[263] ECTA seeks to address the following policy imperatives: bridging the digital divide by developing a national e-strategy for South Africa; ensuring legal recognition and functional equivalence between electronic and paper-based transactions; promoting public confidence and trust in electronic transactions; and providing supervision of certain service providers.[264] Various lofty ideals are set out in the act. There are also various public interest aims listed in the preamble of the act. They include: the promotion of universal access to electronic transactions; the removal and prevention of barriers to electronic transactions in the Republic; and ensuring that electronic transactions in the Republic conform to the highest international

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255 *Commentary on the Electronic Communications and Transactions Act,* 2002 (Found on the Internet) HYPERLINK http://www.cliffe&dekker.co.za (Date of use 14 May 2005)

256 Zondo-Kabini H "Application of the Electronic Communications and Transactions Act to Online Merchants From Other Jurisdictions" 2003 Northwestern Journal of Technology and Intellectual Property Volume 1 Issue 1 p1

257 *Commentary on the Electronic Communications and Transactions Act,* 2002 HYPERLINK http://www.cliffe&dekker.co.za 14 May

258 *Commentary on the Electronic Communications and Transactions Act,* 2002 HYPERLINK http://www.cliffe&dekker.co.za 14 May

259 *Commentary on the Electronic Communications and Transactions Act,* 2002 HYPERLINK http://www.cliffe&dekker.co.za 14 May

260 as per regulation 68 of 2002, signed by president Mbeki on 31 July 2002 (hereafter referred to as "ECTA")

261 *Commentary on the Electroni c Communications and Transactions Act,* 2002 HYPERLINK http://www.gov.co.za 14 May

standards.[265] Furthermore this act is applicable to any electronic transaction or data message.[266]

Chapter III of the Act marks a revolutionary development in the South African law of contract. [267] The act provides recognition to electronic documents and electronic signatures and facilitates the use of electronic communications in the business environment.[268] This is achieved through a number of useful provisions that afford legal effect to information, documents and signatures constituted in an electronic form.[269]

Firstly legal recognition is given to data messages in that information is not without legal force and effect merely on the grounds that it is wholly or partly in the form of a data message.[270] This merely confirms the common-law position.[271] Section 11(3) of ECTA makes provision for incorporation by reference only when a reasonable person would have noticed the reference and when the incorporated information is "accessible in a form in which it may be read, stored and retrieved."[272] The act also provides that an electronic document may be regarded as an original where its integrity is assured.[273] The requirement of writing is also dealt with in the act. When a specific law requires a document to be in writing, the writing formality is met if the document is in the form of a data message and accessible in a manner usable for subsequent reference.[274] Roman-Dutch common law is sufficiently flexible to allow the creation of valid online contracts.[275] Legislation such as the *Credit Agreements Act*[276] prescribes

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262 *Commentary on the Electronic Communications and Transactions Act,* 2002 HYPERLINK http://www.cliffe&dekker.co.za 14 May
263 Section 4 of the *Electronic Communications and Transactions* Act 25 of 2002
264 Chapter III of the Electronic Communications and Transactions Act 25 of 2002
265 Zondo-Kabini 2003 Northwestern Journal of Technology and Intellectual Property p1
266 *Commentary on the Electronic Communications and Transactions Act,* 2002 HYPERLINK http://www.cliffe&dekker.co.za 14 May
267 Section 11 of the *Electronic Communications and Transactions* Act 25 of 2002
268 Neels JL HYPERLINK http://www.rau.ac.za 26 October
269 Section 11(3)(b) of the Electronic Communications and Transactions Act 25 of 2002
270 Section 14 of the *Electronic Communications and Transactions* Act 25 of 2002
271 Section 12 of the *Electronic Communications and Transactions* Act 25 of 2002
272 Rens A "*Electronic Communications and Transactions Act* 25 of 2002 – Approach with

a formal requirement that a particular type of agreement be written. Therefore, when a party enters into an agreement such as a credit agreement, by means of data messages the legal requirements that it be in writing is met.[277]

ECTA deals with the problem of electronic signatures by the providing for deemed validity to a defined class of advanced electronic signatures creating a shift, by operation of law, of the onus of proof onto the person seeking to dispute the authenticity of such a signature.[278] Advanced electronic signatures are defined as:

> An electronic signature which results from a process which has been accredited by the Authority as provided for in section 37.[279]

And an electronic signature is defined as:

> Data attached to, incorporated in, or logically associated with other data and which is intended by the user to serve as a signature.[280]

ECTA states further that an electronic signature is not without legal force and effect merely on the grounds that it is in electronic form,[281] and an electronic signature is regarded as being valid if it was applied properly.[282] Data will be admissible in court proceedings if it is the best available evidence. The rules of evidence must not be applied so as to deny the admissibility of a data message.[283] ECTA repeals the much criticised *Computer Evidence Act* 57 of 1987 and replaces it with a provision that allows for the production in evidence of a copy or printout or extract of a data message.[284] Where the Computer Evidence Act required a complex and comprehensive affidavit from the person in control of the computer network, the new provision requires merely that "an

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caution" 2003 DeRebus p 1- 17
273 75 of 1980
274 Rens 2003 DeRebus p 1
275 Rens 2003 DeRebus p 1
276 Section 1 of the *Electronic Communications and Transactions* Act 25 of 2002

277 Section 1 of the *Electronic Communications and Transactions* Act 25 of 2002
278 Section 13(2) of the *Electronic Communications and Transactions* Act 25 of 2002
279 Section 13(4) of the *Electronic Communications and Transactions* Act 25 of 2002
280 Section 15(1) of the *Electronic Communications and Transactions* Act 25 of 2002

officer in the service" of the entity wishing to tender into evidence the computer printout or extract should certify the extract to be correct.[285] There is no longer any requirement that the officer has to have any knowledge of or supervision over the functioning of the computer system. The section also provides for the admissibility in evidence of such computer extracts but then goes much further in making these certified computer extracts rebuttable proof of the facts that they contain.[286] The application of the old computer Evidence Act was restricted to civil proceedings whereas the new section applies to all proceedings of any nature and including criminal, civil and administrative proceedings.[287]

Several provisions in ECTA is relevant for private international law. Chapter 7 of ECTA contains far reaching consumer protection measures applicable to electronic transactions.[288] Section 44 makes provision for a cooling – off period of seven days after delivery of the goods. The consumer may cancel the contract without reason during that period and will be entitled to a full refund. The only charge that may be levied on the consumer is that of the direct cost of returning the goods.[289] Section 47 contains the provision that is relevant in the context of private international law:

> The protection provided to consumers in this Chapter, applies irrespective of the legal system applicable to the agreement in question.[290]

Of particular importance to banks and other business dependent upon databases, is a provision[291] permitting the use of electronic means of storing statutorily required records.[292] Furthermore an agreement is not without legal force and effect merely because it was concluded partly or in whole by means of

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281 Rens 2003 DeRebus p 4
282 Rens 2003 DeRebus p 4
283 Rens 2003 DeRebus p 4
284 Rens 2003 DeRebus p 5
285 Neels JL HYPERLINK http://www.rau.ac.za 26 October
286 Neels JL HYPERLINK http://www.rau.ac.za 26 October
287 Section 47 of the *Electronic Communications and Transactions* Act 25 of 2002
288 Section 16 of the *Electronic Communications and Transactions* Act 25 of 2002
289 Hare J 2002 HYPERLINK http://www.cliffe&dekker.co.za 26 October

data messages.[293] Section 22 and 23 contain provisions on how to determine the time when and the place where an electronic contract was concluded. The lex *loci contractus* is relevant for determining internal jurisdiction in an international case. It is also one of the factors that will be taken into account when determining the proper law of a contract.[294] An agreement concluded between the parties by means of data messages is concluded at the time when and place where the acceptance of the offer was received by the offeror.[295] An acknowledgement of receipt of a data message is not necessary to give legal effect to that message.[296]

In section 4(4) it is however stated that

> This Act must not be construed as giving validity to any transaction mentioned in Schedule 2

Schedule 2 lists certain exclusions from the act's writing and signature provisions such as an agreement for alienation of immovable property as provided for in the *Alienation of Land Act No* 68 of 1981. The list of exclusions includes leases longer than 20 years, wills and bills of exchange.[297] The act does not state in so many words that an agreement for the sale of land recorded only by means of data messages is invalid, however this seems to be an inescapable conclusion.[298]

The biggest challenge facing ECTA is the provision of a system that creates confidence in e-commerce.[299] Internationally, the legislatures seeking to regulate e-commerce looked to the use of public key cryptography and the regulation of

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290 Section 22 of the *Electronic Communications and Transactions* Act 25 of 2002
291 *Standard Bank of SA Ltd v Efroiken and Newman* 1924 AD 171 Also see *Guggenheim v Rosenbaum* 1961 4 SA 21 (W); *Laconian maritime Enterprises Ltd v Agromar Lineas Ltd* 1986 3 SA 509 (D) and *Henry v Branfield* 1996 1 SA 244 (D) 294F.
292 Section 22 of the *Electronic Communications and Transactions* Act 25 of 2002
293 Section 26 of the *Electronic Communications and Transactions* Act 25 of 2002
294 Schedule 2 of the Electronic Communications and Transactions Act 25 of 2002
295 Rens 2002 De Rebus p 7
296 *Commentary on the Electronic Communications and Transactions Act*, 2002 HYPERLINK http://www.cliffe&dekker.co.za 22 July

an authentication infrastructure as the best means to ensure such confidence.[300] ECTA is admirable in its attempts to regulate this aspect of e-commerce. Cryptography can by used by the sender or recipient of electronic messages as a means for a number of important purposes. The cryptography ensures that messages can only be accessed by specific persons that the message is authentic and has not been tampered with, and that the sender of the message can be properly identified.[301] However, cryptography presents a challenge to security conscious governments in that it permits the concealment of message content from authorities. It is therefore not very surprising that the act contains several provisions which aim to balance the rights to privacy with national security and public interest considerations.[302] The first provision is the keeping of a register, maintained by the Department of Communications in which all providers of cryptographic techniques and products must be registered in order to ply their trade in South Africa.[303] This ensures that state authorities will be entitled to access the private key of cryptography users in order to decrypt their electronic communications.[304] The information contained in the register provided for in section 29 must not be disclosed to any person other than to employees of the Department of Communications who is responsible for the keeping of the register.[305]

ECTA covers a very wide spectrum of legal issues. The benefit of having an overarching set of legal provisions is that most of the critical issues relating to e-commerce are dealt with simultaneously.[306] The disadvantage is that many of the areas covered by the Act are only really dealt with at a very high level and

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297 *Commentary on the Electronic Communications and Transactions Act*, 2002 HYPERLINK http://www.cliffe&dekker.co.za 22 July
298 *Commentary on the Electronic Communications and Transactions Act*, 2002 HYPERLINK http://www.cliffe&dekker.co.za 22 July
299 *Commentary on the Electronic Communications and Transactions Act*, 2002 HYPERLINK http://www.cliffe&dekker.co.za 22 July
300 Section 29 of the *Electronic Communications and Transactions* Act 25 of 2002
301 *Commentary on the Electronic Communications and Transactions Act*, 2002 HYPERLINK http://www.cliffe&dekker.co.za 22 July
302 Section 31 of the *Electronic Communications and Transactions* Act 25 of 2002
303 Mulligan 2004 Logistics Information Management p300

therefore only address the most important issues in an incomprehensive manner.[307]

304 *Commentary on the Electronic Communications and Transactions Act,* 2002 HYPERLINK http://www.cliffe&dekker.co.za 22 July

2. International Instruments

The relationship between international law and municipal law troubles both theorists and courts.[308] Section 231(4) of the Constitution[309] states that an International agreement or treaty does not become part of domestic law until it is enacted into law by national legislation.[310] This term also includes:

(a) subordinate legislation made in terms of an Act of Parliament; and
(b) legislation that was in force when the Constitution took effect and that is administered by the national government.[311]

Resolutions of international organisations are not treaties and they are not binding on member states. If South Africa wishes to translate such a resolution into municipal law it must do so by legislation.[312]

The transport industry operates under highly standardised procedures developed via international conventions. Essentially such procedures alleviate international conflict should disputes arise.[313] Therefore the process of conducting international trade is highly regulated, complex and standardised internationally and these aspects work to the benefit of the exporter and importer in the elimination or mitigation of international risk.[314]

In order for EDI to function effectively in an international trading environment, it has to be incorporated into an acceptable legal framework. Model rules have been promulgated by several international organizations as a result of the growing interest in EDI. Model rules make EDI messages legally binding on the parties. Specific attention is given to the UNCITRAL Model Law on Electronic

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305 Dugard J *International Law a South African Perspective* 2nd ed (Juta 2001) p43
306 *Constitution of the Republic of South Africa* Act 108 of 1996
307 Dugard *International Law* p 57

308 Section 239 of the *Constitution of the Republic of South Africa* Act 108 of 1996
309 Dugard International Law p 59 see also *Masureik and another (T/A Lotus Corporation) v Welkom Municipality* 1995 4 SA745 (O)
310 Mulligan 2004 Logistics Information Management p300
311 Mulligan 2004 Logistics Information Management p300

Commerce and the CMI Rules because they are the benchmark law in international trade, especially with regards to the electronic transfer of data.[315]

5.1 UNCITRAL

UNCITRAL is the United Nations Commission on International Trade Law.[316] It was established by the United Nations in 1966 to harmonise the law of international trade, it is a core legal body of the United Nations system that works to create accessible, predictable and unified commercial laws.[317]

UNCITRAL focuses on law reform and creating model commercial laws that are both accessible and predictable. This is accomplished through conventions, model laws and rules which are acceptable worldwide.[318]

UNCITRAL created a Model Law on Electronic Commerce[319] in 1996 to enhance the use of paperless communication. In 2001, it created a Model Law on Electronic Signatures. Future electronic commerce work will focus on: electronic contracting, with a view to creating a draft convention; online dispute settlement; dematerialisation of documents of title; and a convention to remove legal barriers to the development of electronic commerce in international trade instruments.[320]

After receipt of a report of the Secretary-General of UNCITRAL on the Legal Aspects of Automatic Data Processing, UNCITRAL identified the legal issues of automatic data processing, in 1984, for international trade as a priority concern.[321] Several legal issues were identified involving electronic communications technology, some of them are: the legal value of computer records as evidence; the requirements of writing; and the electronic

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312 Mulligan 2004 Logistics Information Management p300
354 Hereafter referred to as UNCITRAL
355 Geist M A 2003 Guide to Global E – Commerce Law (Found on the Internet) HYPERLINK http://www.itu.int (Date of use 11 November 2005)
356 Geist 2003 HYPERLINK http://www.itu.int (Date of use 11 November 2005)
357 hereafter referred to as the Model Law
358 Geist 2003 HYPERLINK http://www.itu.int (Date of use 11 November 2005)
359 Mulligan 2004 Logistics Information Management p306

transmissions of bills of lading which have traditionally been represented by a piece of paper.[322]

A year later the Secretariat submitted a report that minimised the problems involved with the use of electronic data as evidence in litigation.[323] Legal insecurity were created when this report emphasised that a more serious obstacle were created in the use of electronic data transmission in international trade, because it was presented that certain legal requirements stated that certain transactions be in paper form, or be "signed" by one or more of the parties.[324] UNCITRAL responded to the Secretariat's report by recommending that governments review legal rules and requirements affecting electronic trade.[325] This recommendation was endorsed by the General Assembly.[326] Further reports were received by UNCITRAL in 1986[327], 1987[328] and 1990.[329] As a result of the growth foreseen for e-commerce as an international phenomenon the United Nations Commission for International Trade Law drew up a model law to be used world wide by legislatures in order to promote legal unity as far as possible in regard to e-commerce law.[330] In 1995, UNCITRAL adopted the draft Model Law on Legal Aspects of Electronic Data Interchange and Related Means

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360 Mulligan 2004 Logistics Information Management p306
361 Boss 1991 The Business Lawyer p1788
362 Boss 1991 The Business Lawyer p1788
363 See also *Legal Value of Computer Records: Report of the Secretary-General* 82 U.N. Doc A/CN.0/265 (1985)
364 General Assembly Resolution 40/71 40 UN Doc .A 40/17 (1985)
365 *Legal Implication of Automatic Data Processing: Report of the Secretary-General* U.N. Doc. A/CN.9/279 (1986)
366 *Legal Implication of Automatic Data Processing: Report of the Secretary-General* U.N. Doc. A/CN.9/292 (1987)
367 *Electronic Data Interchange Preliminary study of Legal Issues Related to the Formation of Contracts by Electronic Means: Report of the Secretary-General*, U.N. Doc. A/CN.9/333 1990, better known as UNCITRAL EDI report.

368 Eiselen GTS 3rd Annual Conference on World Wide Web Applications 5, 6 and 7 September 2001 (Found on the Internet) HYPERLINK http://www.docweb.pwv.gov.za (Date of use 26 October 2005)

of Communication.[331] This Model law is intended to serve as a model to countries in order to create uniform law and practice involving the use of computerised systems in international trade.[332] The objectives of the Model Law are essential to improve the efficiency in international trade since it will enable and facilitate the use of EDI and the related means of communication and providing equal treatment to users of paper-based documentation and to users of computer-based information. The Model Law on Electronic Commerce was finalised and approved in the UNCITRAL 29th session, 28 May to 14 June 1996.[333]

The Model Law on Electronic Commerce applies to any kind of information that is transferred in the form of a data message used in commercial activities. Ocean bills of lading are one kind of document within the scope of the Model Law. [334]

The purpose of UNCITRAL Model Law on Electronic Commerce that was adopted by UNCITRAL in 1996 is to offer national legislators a set of international acceptable rules in terms of which a number of legal obstacles to electronic commerce may be removed, and a more secure legal environment may be created for electronic commerce.[335] Accordingly the regulations of the Model Law can only be taken as a model set of rules for electronic commerce and will only have the force of law if adopted in national legislation.[336] This Model Law relies on a "functional equivalent" approach that is based on an analysis of the functions and purposes of the traditional paper-based requirement with a

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369 *Electronic Data Interchange Preliminary study of Legal Issues Related to the Formation of Contracts by Electronic Means: Report of the Secretary - General*, U.N. Doc. A/CN.9/333 1990, better known as UNCITRAL EDI report.

370 Livermore J Euarjai K 1998 HYPERLINK http://www.warwick .ac.uk 14 May

371 Livermore J Euarjai K 1998 HYPERLINK http://www.warwick .ac.uk 14 May

372 Livermore J Euarjai K 1998 HYPERLINK http://www.warwick .ac.uk 14 May

373 Report of the Working Group on Electronic Data Interchange (EDI) on the Work of its Thirtieth Session United Nations Commission on International trade Law Vienna 26 February – 14 June 1996 (Found on Internet) HYPERLINK http:www.uncitral.org (Date of use 22 July 2005)

374 Report of the Working Group on Electronic Data Interchange (EDI) on the Work of its Thirtieth Session United Nations Commission on International trade Law Vienna 2005 HYPERLINK http:// www.uncitral.org 22 July

view to determining how those purposes or functions could be fulfilled through electronic commerce techniques.[337] Basic functions of paper-based requirements are identified, with a view to providing criteria that, once they are met by data messages, give such data messages the same level of legal recognition as corresponding paper documents that fulfill the same function.[338]

Article 16 defines the scope of application for the chapter carriage of goods by defining a "contract of carriage of goods" by a non-exclusive list of actions.[339] In this list all three functions of the paper bill of lading can be found and even if the list is found to be insufficient to cover any contract of carriage, it can be relied on the fact that it is not exclusive.[340]

5.2 *CMI rules for electronic bills of lading*

The UNCITRAL Model law provides the legal foundation for the application of the CMI Rules for Electronic Bills of Lading. The Comite Maritime International[341] published in 1990 a set of model rules that are in fact an extension the United Nations Rules for Electronic Data Interchange.[342] The CMI rules are available to any party that is willing to abide by them.[343] The CMI's work on bills of lading began in 1880 where the CMI sought to create a waybill that would be acceptable in those jurisdictions where the law did not favour non-negotiable bills.[344] In order for the CMI rules to be applicable the parties have to agree thereto expressly.[345] Although there is no specific format of messages that have to be used, the procedure for implementation contained in the CMI rules

375 Le Roux F "E-commerce – the legal framework" 2000 DeRebus p 15
376 Le Roux 2000 DeRebus p 15
378 Article 16 of UNCITRAL Model Law
379 Gehrke New Attempts at Electronic Documentation in Transport Bolero – The end of the experiment, the beginning of the future? p54

380 Hereafter referred to as the CMI
381 Gehrke New Attempts at Electronic Documentation in Transport Bolero – The end of the experiment, the beginning of the future? p56
382 Kozolchyk B "Evolution of the Ocean Bill of Lading from a Banking Law Perspective" 1996 Journal of Maritime Law and Commerce p229
383 Ash 2001 HYPERLINK http://www.deneysreitz.co.za14 May
384 Surjan 2002 HYPERLINK http://www.uctshiplaw.com 22 July

stipulates that in instances in which they do not conflict with the CMI rules, the Uniform Rules of Conduct for Interchange of Trade Data by teletransmission, 1987 (UNCID) should govern the conduct between the parties.[346] Furthermore the suggested computer format for transmission is the UN/EDIFACT standards.[347] The CMI rules also have a default provision that, unless otherwise agreed, the parties must conform the United Nations Layout Key, which is a model bill of lading.[348] Another unique requirement is that all transmissions must be confirmed before they are acted upon.[349] Therefore once a bill of lading is sent electronically, no action may be taken on it until the sender receives a confirmation that the content of the transmission was correct and complete.[350]

The CMI rules provide for the use of an "Electronic Monitoring System" which is optional.[351] This enables the users to trace and monitor the information actually transmitted by the computer in case of discrepancies between the parties as to what information was sent and received.[352] The final procedural requirement is one of confidentiality.[353] Any transfer of rights to the goods in question are confidential and shall mot be released to any outside party not connected to the transport or clearance of the goods.[354] The system the CMI rules proposes is that of direct communication between carrier and shipper without making use of a central depository. The carrier is intended to act as the registry carrying out the instructions of the shipper to give effect to an electronic transfer of the bill of lading.[355]

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385 CMI Rule 3(a)
386 CMI Rule 3(b)
387 CMI Rule 3(c)
388 CMI Rule 3(d)
389 CMI Rule 2(e)

390 Ash 2001 HYPERLINK http://www.deneysreitz.co.za
391 CMI Rule 3(e)
392 Ash 2001 HYPERLINK http://www.deneysreitz.co.za 14 May
393 CMI Rule 3(f)
394 CMI Rule 4 and 7

The CMI rules are not meant to be comprehensive in their handling of EDI and bills of lading. They are merely intended to govern electronic transfers of bills of lading documents. Substantive bills of lading provisions will continue to be controlled by the applicable law.[356]

An agreement for the CMI rules to be applicable does not have to be in the contract of carriage but may be in a separate accord between the parties. Such agreement usually governs nothing but their EDI relationship.[357]

The procedures that are set out in the CMI rules are very similar to the transactions of paper based systems, therefore maintaining the current procedures. An example of a straightforward procedure is as follows: Firstly the parties have to agree to adopt the CMI rules;[358] secondly the shipper must deliver the goods to the carrier; thirdly the carrier notifies the shipper electronically of such receipt: this includes the shippers name, a description of the goods along with any reservations, the location and date that the goods were received, the terms of the contract of carriage and the "Private Key" that will allow the holder thereof to endorse the bill of lading and therefore conclude future sales. Lastly the shipper confirms to the carrier that he received the message.[359]

Negotiability of the bill of lading is carried out by notification from the holder of the private key,[360] the carrier transmits all the information except the private key to the prospective new holder. After the new holder confirms the message the previous key is cancelled and a new one is issued.[361]

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395 Kelly RB "The CMI Charts a Course on the Sea of Electronic Data Interchange: Rules for Electronic Bills of Lading" 1992 Tulane Maritime Law Journal 16 p 361

396 Kelly 1992 Tulane Maritime Law Journal p361

397 CMI Rule 1

398 Kelly 1992 Tulane Maritime Law Journal p360

399 The "Private Key" is simply a method of verifying or authenticating the message. Other means of security, such as passwords and access codes would still be necessary.

400 Chandler G *The Electronic Transfer of Bills of Lading* Journal of Maritime Law and Commerce 20 1989 p574

The CMI rules are a simple and cost effective system and the carrier is party to each transfer.[362] Furthermore this system is beneficial to especially companies because it is easier to maintain privacy.[363] The CMI rules do not have force of law, but are voluntarily adopted by parties seeking a set of rules to govern their respective rights and obligations when transacting "on-line." The CMI rules set out the minimum requirements for the creation of an electronic bill of lading and for the transfer of title to goods by this means. These rules are not intended to govern EDI legal issues in general, nor all issues that may arise in connection with bills of lading generally.[364]

The CMI rules are, at the moment the best attempt at establishing a procedural basis for the use of EDI bills of lading.[365] These rules deal with the inherent difficulties arising form the elimination of a written contract. There is however a lack of provisions dealing with the issues of what constitutes an actual receipt of an offer and subsequent acceptance, as well as provisions which address the procedures to be followed in determining the parties intent to contract.[366] This means that the contracting parties must have a master agreement covering the various possible situations that can arise. This agreement must also take into consideration the applicable national laws.[367]

5.3 Incoterms

Numerous international institutions have facilitated the use of electronic commerce.[368] They recognise EDI and create rules for its implementation in commercial settings, including its function as a replacement for the traditional bill of lading.[369] A very important part of international trade is the *International*

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401 Chandler 1989 Maritime Law and Commerce p575
402 Kelly 1992 Tulane Maritime Law Journal p361
403 Ash 2001 HYPERLINK http://www.deneysreitz.co.za 14 May
404 Kelly 1992 Tulane Maritime Law Journal p366
405 Kelly 1992 Tulane Maritime Law Journal p366
406 Kelly 1992 Tulane Maritime Law Journal p366
313 Hare *Shipping Law* p578
314 Hare *Shipping Law* p578

Chamber of Commerce.[370] The ICC has largely embraced EDI use by recognising it in its Incoterms.[371] EDI is recognised as a replacement for traditional documentation throughout Incoterms.[372] Incoterms[373] was written to provide uniformity in the interpretation of trade terms used in current international trade practice. The ICC's purpose was to help parties avoid uncertainties in the interpretation of these terms. Incoterms are shorthand expressions which detail the rights and obligations of parties involved in the transportation of goods.[374]

Bills of lading are required when shipped goods are to be sold during transit. This legal function is not attached to data in the document, but to the document itself as a symbol of the goods it represents.[375] Under Incoterms CFR[376] and CIF[377] the only acceptable document in a negotiable transport situation

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315 hereafter referred to as the ICC. The International Chamber of Commerce is a world business organisation that speaks on behalf of enterprises from all sectors in every part of the world. ICC promotes an open international trade and investment system and the market economy. It often works with its member companies to develop global business codes of conduct. Within a year of the creation of the United Nations, ICC was granted consultative status at the highest level with the United Nations and its specialised agencies. The ICC is involved in e-commerce law issues on several fronts., It has adapted for e-commerce its leading international trade rules, such as the Incoterms and the Uniform Rules for Documentary Credits (UCP 500). The organisation has also become involved in jurisdictional negotiations, privacy and electronic contracting.

316 *International Chamber of Commerce Guide to Incoterms* 1990

317 For example, in Incoterms CFR and CIF, it is stated that where the seller and the buyer have agreed to communicate electronically the transport document may be replaced by and equivalent electronic date interchange message.

373 Sales contracts involving transportation contains abbreviated terms describing the time and place where the buyer is to take delivery. These trade terms, like free on board (FOB) and cost, insurance, and freight(CIF) defines a variety of matters including the time and place of payment, the price, the time when the risk of loss shifts from the seller to the buyer, and the costs of freight and insurance. Incoterms are well known throught the world and their use in international sales is encouraged by trade councils, courts, and international lawyers. First published in 1936, the current version is *Incoterms 2000.*

318 *International Chamber of Commerce Guide to Incoterms* 1990

319 Williams 2000 Transnational Law & Contemporary Problems p578

320 Cost and Freight: The seller must provide the buyer with the transport document for the port of destination. This document must cover the contract goods, be dated within the period agreed for shipment, enable the buyer to claim the goods from the carrier ant destination and enable the buyer to sell the goods in transit by the transfer of the document to a subsequent buyer or by notification to the carrier.

321 Cost, Insurance and Freight: Mostly the same obligations exist as under CFR by the seller also must insure the goods against the buyer's loss during the voyage. The CIF term also contains the same paragraphs relating to documentation as contained in the CFR term

traditionally has been the bill of lading.[378] The recognition of the use of EDI as a valid documentation in maritime transport is a significant step. The ICC has sanctioned the use of electronic documents through its recognition of EDI in Incoterms.[379] This important body which has standardised trade terms has recognised the use of EDI.[380]

1.3. UNCID

Alongside the development of the UNCITRAL Model Law on Electronic Commerce and the CMI Rules, the International Chamber of Commerce itself has developed uniform rules to regulate the conduct of parties making use of EDI.[381] These are known as Uniform Rules of Conduct for Interchange of Trade Data by teletransmission[382] , and are very similar to the CMI rules, the essential difference is that the UNCID rules are not as specifically targeted as the CMI rules, but are of more general application to al forms of electronic transactions.[383]

Although the first draft of UNCID was based on the idea of creating a model communication agreement, the rules ultimately took the form of non - mandatory rules which users of electronic communication technology and suppliers of network services could incorporate by reference into their communication agreements.[384]

In section 3 of the CMI rules for electronic bills of lading it states that when the UNCID, is not in conflict with the CMI rules it shall govern the conduct between the parties.[385]

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322 Williams 2000 Transnational Law & Contemporary Problems p578
323 Williams 2000 Transnational Law & Contemporary Problems p579
324 Williams 2000 Transnational Law & Contemporary Problems p579 also see
325 *International Chamber of Commerce, Uniform Rules of Conduct for Interchange of Trade Data by Teletransmission* ICC Pub No 452 (1988) hereafter referred to as UNCID
326 *International Chamber of Commerce, Uniform Rules of Conduct for Interchange of Trade Data by Teletransmission* ICC Pub No 452 (1988)
327 Ash 2001 HYPERLINK http://www.deneysreitz.co.za 14 May
328 Boss AH "The International Commercial Use of Electronic Data Interchange and Electronic Communications Technologies" 1991 The Business Lawyer Vol 46 August p1792
329 Section 3 of the CMI Rules for Electronic Document Interchange

UNCID rules do not have force of law and only operates where parties specifically agreed to their application.[386] The rules are available to those who wish to regulate the framework of electronic transactions. The rules provide for uniformity and are useful in eliminating the potential for disputes surrounding electronic transactions.[387] Although UNCID is brief it deals with a number of topics like protection of information,[388] identification of the parties,[389] acknowledgement of receipt of a message[390] and verification of the completeness of a received message.[391]

UNCID represents a major step in the development of a legal framework for EDI, both because it furnished a basis for preparing individual communication agreements and because it served as a first effort that could later be used to reach a higher level of refinement. Both within the ICC and outside, it is recognised that there is a need for more than the UNCID rules.[392]

5.4 UN/EDIFACT

The United Nations Electronic Data Interchange for Administration Commerce and Transport[393] is an international set of EDI standards that are published by the United Nations Trade Data Interchange Directory.[394] The standards include rules and implementation guidelines; message design guidelines, directory sets defining messages, data elements, and code sets, among other definitions.[395] With paper-based documents, the United Nations had a major influence of the development of international EDI standards to such an extent that its

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330 Ash 2001 HYPERLINK http://www.deneysreitz.co.za 14 May
331 Ash 2001 HYPERLINK http://www.deneysreitz.co.za 14 May
332 Article 9 of UNCID
333 Article 6 of UNCID
334 Article 7 of UNCID
335 Article 8 of UNCID
336 Boss 1991The Business Lawyer p1792
337 hereafter referred to as UN/EDIFACT
338 UNTDID
339 Sheldon 1999 HYPERLINK http://www.linktionary.com 14 May

UN/EDIFACT rules now form the dominant international standard.[396] In 1987 the United Nations, through the Economic Commission for Europe, launched EDI for Administration, Commerce and Trade (hereafter referred to as EDIFACT) in an attempt to standardise EDI messaging.[397] Although the different national standards met the domestic needs there were still difficulties for international transactions.[398] In trying to find a solution for this barrier for international communication this problem was brought to the attention of the United Nations Working Party on the Facilitation of Trade Procedures. [399] This committee was responsible for streamlining procedures and developing standard documentation.[400] In 1985 the United Nations Joint Electronic Data Interchange[401] group was formed to develop an international standard, this led to the establishing of UN/EDIFACT.[402]

EDIFACT is a single international standard that is flexible enough to meet the needs of government and private industry. Furthermore EDIFACT is gaining popularity in Europe because it defines the rules for the transmission of messages that can be used across industries and country borders for both government and in the private sectors.[403]

EDIFACT covers standardisation in five main areas: the syntax rules; data elements; segments; messages and codes.[404]

There are certain benefits when using EDIFACT as an international model rule. EDIFACT is a combination of European and American national standards.[405] It

340 Mulligan 2004 Logistics Information Management p301
341 Sheldon 1999 HYPERLINK http://www.linktionary.com 14 May
342 Mulligan 2004 Logistics Information Management p302
343 Mulligan 2004 Logistics Information Management p302
344 Sheldon 1999 HYPERLINK http://www.linktionary.com 14 May
345 UN-JEDI
346 EDI Standards – UN/EDIFACT (Found on Internet) HYPERLINK http://www.un.org (Date of use 14 May 2005)
347 EDI Standards – UN/EDIFACT 2005 HYPERLINK http://www.un.org 14 May
348 EDI Standards – UN/EDIFACT 2005 HYPERLINK http://www.un.org 14 May
349 Mulligan 2004 Logistics Information Management p306

retains the essence of the two national standards characterised by its flexibility and efficiency while not compromising its functionality.[406] EDIFACT is also adaptable enough to be used across industries and international borders for both governments and the private sector.[407] EDIFACT is internationally functional and is endorsed by the United Nations. In order for this standard to be effective it has to be accepted by various states, EDIFACT is fast gaining popularity not only in the United States and Europe but also in Australia, Asia and many developing countries.[408] The CMI rules should also conform with the relevant EDIFACT standards.[409]

350 Boss 1991 The Business Lawyer p1792
351 Boss 1991 The Business Lawyer p1793
352 EDI Standards – UN/EDIFACT 2005 HYPERLINK http://www.un.org 14 May
353 Section 3 of the CMI Rules for Electronic Document Interchange

6. Core issues of electronic bills of lading

It is a general rule in South African law that no special formalities are required to enter into an enforceable contract.[410] A contract can also be brought about by conduct.[411] This however can create uncertainty of whether a contract actually exists.[412] In this respect a written contract offers certain obvious advantages. Firstly, the preparation of the contract gives the parties time to consider their positions before committing themselves by their signatures. Secondly proof is simplified. Thirdly, the scope for subsequent disagreement about the terms of the contract is narrowed, since the terms are in writing for all to see.[413] It is for these reasons that the law requires some contracts to be in writing.[414] Once the parties have decided that they will reduce their contract to writing and that they will be bound by their written contract after signature but not by any earlier informal contract, then the contract comes into existence when, and only when, the written document containing it has been signed by all the parties.[415] There are however certain exceptions to this rule. It is clear that there are certain types of contracts, such as promissory notes and mortgage bonds that are fully effective as written contracts although signed by only one party.[416] If the parties have not contemplated some form of signature any sign or mark made with the intention of signifying agreement to the document will suffice.[417] Initials have been held sufficient, and there is no reason why a properly authenticated mark made by an illiterate party should not be accepted.[418]

Before paperless transactions totally replace the traditional document as a record of the contents of an agreement, several legal issues must be addressed. The bill of lading document currently functions as proof of the contract of carriage

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407 Christie RH *The Law of Contract* 4th ed (Butterworhts Durban 2001) p119
408 *Ally v Dinath* 1984 2 SA 451 (T)
409 Christie *The Law of Contract* p120
410 Christie *The Law of Contract* p120
411 Christie *The Law of Contract* 4 p120
412 *Patrikios v The African Commercial Co Ltd* 1940 SR 45
413 Christie *The Law of Contract* p122
514 Christie *The Law of Contract* p122
415 Christie *The Law of Contract* p122

agreement, and in a sense, proof that its holder is entitled to receive the goods.[419] Without an actual document, how will this function be served? A computer printout is only a copy of the original agreement contained in the computer.[420] Several legal issues must be resolved before EDI and the Internet use will be confidently accepted by the shipping industry.[421] Law reform is necessary since the paperless transaction now made possible through EDI and the Internet does not correspond within the model conceived by the drafters of outdated commercial laws and laws of evidence.[422] The primary legal issues raised by electronic transactions include contract formation and the formalities of contracts such as writing and signatures and also admissibility of computer records in evidence. EDI is still relatively new and much time has been spent developing standards. As a general rule only a small number of civil suits are reduced to reported judgments, and it can take some time for a lawsuit to get to trial. There may be cases in process but not yet decided.[423] Finally it is likely that most transactions undertaken by way of EDI and the Internet are, individually, insignificant in the context of the overall relationship between the trading partners. When something goes wrong with a particular order, the parties are more likely to come to a practical solution or arbitrate a dispute rather than to incur the costs of a highly technical lawsuit to clarify a fine legal point. [424]

1.3 Electronic contracts

The exchange of business information between computers does not necessarily give rise to contractual issues.[425] EDI and the Internet is used in the purchase, sale and movement of goods in circumstances where the parties intend to be legally bound and in this respect, EDI raises interesting questions relating to

416 Williams 2000 Transnational Law & Contemporary Problems p567
417 Williams 2000 Transnational Law & Contemporary Problems p568
418 Williams 2000 Transnational Law & Contemporary Problems p568
419 Williams 2000 Transnational Law & Contemporary Problems p569
420 Kelly 1992 Tulane Maritime Law Journal p 367
421 Grayton U.B.C. Law Review p 262
422 Kelly 1992 Tulane Maritime Law Journal p367

contract formalities, such as the writing requirement and the problem of digital signatures.[426]

It is trite law that a contract must reflect the real intentions of the parties.[427] The question is raised whether computer generated messages and responses fulfill the requirements of offer and acceptance.[428]

The CMI rules states as follows:

> Unless otherwise agreed a recipient is not authorized to act on a transmission unless he has sent confirmation.[429]

Therefore according to the CMI rules all messages must be verified, and in doing so eliminates the possibility of error messages.[430] The different promulgations of the abovementioned model rules state the conditions under which EDI messages will be considered as legally binding contracts, they also state the various legal effects of EDI contracts on the parties. This is accomplished by two different methods. The first method expressly states that the CMI model rules will have a legally binding effect on the parties. The second method as stated in the CMI rules, prevents parties who adopt the CMI rules from raising the defense that the contract is not in writing.[431]

1.4 Writing

A fundamental difficulty is that many of the legal principles applicable in an electronic environment are based upon the contract between the parties being *in writing.*[432] This is an important requirement as the bill of lading is a document of title, this entitles the holder thereof to take delivery of the goods. [433] The requirement of a written agreement vary between countries. There is no

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423 Grayton U.B.C. Law Review p263
424 Christie *The Law of Contract* p120
425 Kelly 1992 Tulane Maritime Law Journal p358
426 CMI Rule 2(d)
427 CMI Rule 2(d)
428 Kelly 1992 Tulane Maritime Law Journal p354
429 Kelly 1992 Tulane Maritime Law Journal p355
430 Hare *Shipping Law* p550

international writing requirement but barriers can be created by individual countries and this can impede the free use of EDI.[434]

The Hague-Visby Rules[435] do not state whether the bill of lading must be in writing or not. The Rules however do require a "*document*" to be "*issued*".[436]

An investigation by UNCITRAL in 1985 focused on issues considered to be the most serious obstacles to the use of EDI.[437] According to this report a simple method of dealing with the paper requirement was to specifically state that EDI transmissions have the same legal effect as if the documents were in writing.[438] The UNCITRAL studies noted that the requirement of writing serve three functions in contract law. Firstly, writing is required to show that an agreement exists. Secondly, writing serves an evidentiary function. Thirdly writing can serve a legal function.[439]

UNCITRAL Model Law requires that the agreement must be "*legible*" to allow for "*reproduction*"[440] so that each party would hold a copy of the same data, and requires that authentication of data must be by means of signature.[441] The clear implication is that, in order for an international contract to comply with the UNCITRAL Model Law such a contract must be in written form.[442] The UNCITRAL Model Law has sought to establish an internationally acceptable set of principles that provide a legal framework for the conduct of electronic commercial activity. Articles 16 and 17 of the UNCITRAL Model Law specifically

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431 Williams 2000 Transnational Law & Contemporary Problems p568
432 Rule III Hague-Visby Rules
433 Rule III of the Hague-Visby Rules
434 *Legal Value of Computer Records: Report of the Secretary-General* 82 U.N. Doc A/CN.0/265 (1985)
435 *Legal Value of Computer Records: Report of the Secretary-General* 82 U.N. Doc A/CN.0/265 (1985)
436 Kelly RB *The CMI Charts a Court on the Sea of Electronic Bata Interchange: Rules for Electronic Bills of Lading* Tulane Maritime Law Journal p 356
437 UNCITRAL Model Law
438 Ash 2001 HYPERLINK http://www.deneysreitz.co.za 14 May
439 Ash 2001 HYPERLINK http://www.deneysreitz.co.za 14 May

deal with contracts pertaining to the carriage of goods which obviously encompass bills of lading. Article 17 states that:

> Where the law requires that any action referred to in Article 16 be in writing or by using a paper document, that requirement is met if carried out by using one or more data messages.[443]

Rule 11 of the CMI rules states that:

> The carrier and the shipper and all subsequent parties utilizing these procedures agreed that any national or local law, custom or practice requiring the Contract of Carriage to be evidenced in writing and sighed, is satisfied by the transmitted and confirmed electronic data residing on computer data storage media displayable in human language on a video screen or as printed out by a computer. In agreeing to adopt these Rules the parties shall be taken to have agreed not to raise the defense that this contract is not in writing.[444]

1.5 Signature

The EDI system will only be effective if the users have confidence in it. One of the biggest user concerns relate to the authenticity of the electronic message and the security and integrity thereof.[445] The most common form of authentication required by domestic and international law is a manual signature.[446] The function of a signature is very significant, not only because it authenticates parties to a contract, but also evidences an intention to be legally bound.[447] These concerns are addressed through the concept of the digital signature. One of the fundamental requirements of a secure e-commerce transaction is the digital signature.[448] Digital signatures address concerns such as authentication, privacy and integrity. From a legal perspective it is important to know how a digital signature is issued, therefore creating an enforceable digital contract.[449]

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440 Article 17 of UNCITRAL Model Law
441 CMI Rule 11
442 Christianson G Mostert W "Digital Signatures" 2000 De Rebus p 26
443 Christianson 2000 De Rebus p 26
444 Livermore 1998 HYPERLINK http://www.warwick.ac.uk 14 May
445 Christianson 2000 De Rebus p28
446 Christianson 2000 De Rebus p28

Paper-based signatures serve two customary and essential functions: Firstly the physical signature links a document to its author and the signatory thereby authenticating the document as purporting to have been at least issued by a person having a distinctive mark; and secondly the signature to a document makes modification of that document more difficult and therefore the integrity or security of the document is enhanced.[450] A hand written signature is physically tied to a carrier (the paper) which gives border lines and structure to the information in an immediately readable format.[451] Digital signatures are not immediately readable and the signature, carrier and the signed object are not physically related to each other in the same locked and durable form.[452] Furthermore the hand written signature furnishes the information with a physically unique sign of authenticity. These signed objects may be in a person's possession and can thus be a carrier of authority or a certain right like bills of lading and other negotiable instruments.[453]

International law is moving towards acceptance of electronic data in satisfaction of signature requirements. The *Hamburg Rules* of 1978 and the *Geneva Multimodal Convention* of 1980 stated that:

> Signature on the bill of lading may be in handwriting, printed in facsimile, perforated, stamped, in symbols, or made by any other mechanical or electronic means, if not inconsistent with the law of the country where the bill of lading is issued.[454]

According to the UCC section 1-201 a signature includes:

> Any symbol executed or adopted by a party with present intention to authenticate writing.[455]

EDI communications require the same intent to produce a record as do other electronic messages.[456] In all instances a message is composed and the

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447 Ash 2001 HYPERLINK http://www.deneysreitz.co.za 14 May
448 Christianson 2000 De Rebus p28
449 Angel 1992 JILT p17
450 Angel 1992 JILT p16
451 *Convention on International Multimodal transport of Goods* May 24 1980
452 section 1-201 of the *Uniform Commercial Code* 1990
453 Angel 1992 JILT p16

message is entered for transmission. The message or the context surrounding its transmission usually identifies the source, the EDI transmission is usually accompanied by a name, access code, or other identifier which documents the source evidences intent to authenticate the transmission.[457] Therefore EDI can fulfill the intent and authentication requirements of the UCC's signature standard.[458]

The digital signature seeks to fulfill the same duty of electronic documents but the process is entirely different.[459] The paper-based hand written signature involves pen and paper whilst the digital signature involves cryptography. Cryptography can be defined as:

> The science of converting data into apparent nonsense and later translating it back again into its original form, all in a controlled way.[460]

A digital signature can be defined as:

> A data item which accompanies a digitally encoded message and which can by used to ascertain both the originator of the massage and the act that the message has not been modified since it left the originator.[461]

Digital signatures enable the unambiguous confirmation of the identity of the sender and the authenticity and integrity of electronic documents. Unique to the sender and unique to the message sent, digital signatures are verifiable and non-reputable.[462] Copyright protection mechanisms also based on secure technologies such as the abovementioned cryptography, and smart cards, help to ensure the protection of digital material and is a crucial factor in the emergence of a mass-market in electronic content.[463]

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454 Angel 1992 JILT p16
455 Williams 2000 Transnational Law & Contemporary Problems p573
456 Williams 2000 Transnational Law & Contemporary Problems p573
457 Ash 2001 HYPERLINK http://www.deneysreitz.co.za 14 May
458 Christianson 2000 De Rebus p28
459 Angel 1992 JILT p3
460 Angel 1992 JILT p2

There are several different methods in existence to sign documents electronically. These electronic signatures vary from very simple methods to very advanced methods.[464] Cryptography is a highly advanced and important instrument for achieving secure electronic commerce.[465]

In order to obtain a legally acceptable digital signature the user will have to apply for the issuing of a digital certificate.[466] The digital certificate enables the user to sign an electronic document. A prerequisite for a digital certificate is that the certification authority has to be certain that the user meets the criteria for positive identification. The certification authority will issue a digital signature to both parties, which is installed on their respective computers.[467]

When a user applies for a digital signature he is issued two "keys", a public and a private key.[468] The public key is available to anyone who needs it but the private cryptographic key is available only to the user himself. The private key is stored on the user's browser or on a cryptographic smart card. Only the person with the appropriate key can access the information.[469] With a private key the sender places a digital signature on electronic documents. A digital signature is a mark that is unique to the sender and it is impossible to forge. Furthermore a digital signature assures that any changes made to the date that have been digitally signed cannot go undetected.[470] In order to sign a document digitally the sender crunches down the date into a few lines by a process called hashing. These lines are called a message digest. The sender's software than encrypts the message digest with his private key, this results in a digital signature. The sender then attaches the digital signature to the document.[471] This message is then sent to the receiver whose software decrypts the signature using the

461 Angel 1992 JILT p3
462 Angel 1992 JILT p4
463 Also called a digital ID
464 Christianson 2000 De Rebus p26
465 Christianson 2000 De Rebus p27
466 Christianson 2000 De Rebus p27
467 Christianson 2000 De Rebus p27
468 Christianson 2000 De Rebus p28

sender's public key and therefore changing it back into a message digest.[472] Decryption takes place by the message recipient using a public key that precisely confirms that the matching private key was used to create the digital signature.[473] The receiver's software than hashes the document into a message digest and compares it to the message digest received form the sender if the two are the same then the signed data has not been changed.[474]

The electronic document's security is ensured by virtue of the fact that it is practically impossible to duplicate the encryption without access to the private key.[475] The private key in itself is an extremely long number practically impossible to memorise.[476] Once a person has received his public and private key, it is very important to keep the private key free from access by others. If someone gains access to the private key, that person will be able to counterfeit the key and, thus to create digital signatures. Protection of the private key is, however, for the user a local matter under his control or the control of a responsible site security officer.[477] Every person bears responsibility for his own signature and should protect it from loss, theft or illegal use. Neither should the user forward his private key to other people such as his secretary or colleague.[478]

The user needs the public key of the sender in order to check the authenticity of his digital signature. This public key can be delivered by the sender himself but can also be retrieved from a data base which is publicly accessible.[479] This authentication of the electronic signature is based on the presumption that the public key really belongs to the signer.[480] This presumption is however not always fool proof and there are the risk that somebody creates a key pair, places

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469 Christianson 2000 De Rebus p28
470 Ash 2001 HYPERLINK http://www.deneysreitz.co.za 14 May
471 Christianson 2000 De Rebus p28
472 Christianson 2000 De Rebus p28
473 Ash 2001 HYPERLINK http://www.deneysreitz.co.za 14 May
474 Angel 1992 JILT p4
475 Angel 1992 JILT p4
476 Angel 1992 JILT p5
477 Livermore 1998 HYPERLINK http://www.warwick.ac.uk 14 May

the public key in a public directory under somebody else's name and thus signs electronic messages in the name of somebody else. In order to resolve this problem parties have to rely on third parties called "Certification Authorities" [481]. These CA's guarantee the relationship between the identity of the sender and the public key. This association is achieved in a certificate that binds the public key to an identity.[482]

Therefore like the signature used on written documents today, digital signatures are now being used to identify authors of e-mail or other information objects of electronic data.[483] Digital signatures can provide three important functions:

1. Authentication: to authenticate the identity of the person who signed the data so it is known who participated in the transaction;
2. Integrity: to protect the integrity of the data so it is possible to know the message read has hot been changed, either accidentally or maliciously; and
3. Non-repudiation: to allow it to be proved later who participated in a transaction so that it can not be denied who sent or received the data.[484]

In order to create a signed message it is not necessary to send the message itself in encrypted form. The digital signature can be appended to the message and can be verified irrespective of the form of the message itself.[485]

The most important way of promoting the development of electronic commerce is by ensuring that the law does not discriminate between traditional and electronic ways of doing business.[486] Therefore the law should be technology neutral in its

478 hereafter referred to as CA's
479 Angel 1992 JILT p6
480 Livermore 1998 HYPERLINK http://www.warwick.ac.uk 14 May
481 Angel 1992 JILT p3
482 Angel 1992 JILT p16
483 Livermore 1998 HYPERLINK http://www.warwick.ac.uk 14 May

application. In most cases however, it is doubtful whether a requirement in law of a signature can be met legally using an electronic signature.[487]

It is uncertain as to which digital signatures technology is appropriate for electronic bills of lading.[488] The UNCITRAL Model Law explicitly gives appropriate technical solutions the same legal validity as a traditional signature and allowed the parties to agree on specific means.[489] The Model Law further provides:

> Where a rule of law requires a signature, or provides for certain consequences in the absence of a signature, that rule shall be satisfied in relation to a data message if:
> - method is used to identify the originator of the data message and to indicate the originator's approval of the information contained therein; and
> - that method is reliable as was appropriate for the purpose for which the data message was generated or communicated, in the light of all circumstances, including any agreement between the originator and the addressee of the data message.[490]

According to this article the Model Law does not require specific technique of signature, any electronic signature technologies can be introduced in the future is appropriate without changing the law.[491]

1.6 Negotiability

A bill of lading entitles the holder to take delivery of the goods. As has already been mentioned, the holder of the bill of lading might want to transfer ownership of the goods.[492] This is done by endorsing the bill of lading to a third party, who then becomes the legal holder of the bill of lading.[493]

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484 Angel 1992 JILT p16
485 Angel 1992 JILT p17
486 Article 6 of UNCITRAL Model Law
487 Article 6 of UNCITRAL Model Law
488 Livermore 1998 HYPERLINK http://www.warwick.ac.uk 14 May
489 Schmitthoff *Export Trade* p509
490 Schmitthoff *Export Trade* p509

Bills of lading can therefore be regarded as negotiable instruments. As mentioned previously[494] this term reflects on the transferability of the bill of lading and should not be interpreted as the true negotiability in the sense that the endorsee can obtain better title than the original holder.[495]

Problems arise when it is attempted to replace a negotiable instrument with electronic data.[496] Solutions to the problems associated with the electronic transfer of documents of title can be approached from two angles: Firstly extensive legislative reform will be required to facilitate the electronic transfer of negotiable documents or the focus has to shift away from the formalities associated with the transfer of the negotiable instrument to the actual process.[497] Negotiability of an electronic bill of lading is dealt with by the provisions of Article 17(3) of UNCITRAL Model Law on Electronic Commerce, which provides that the legal requirement for transfer of a right or obligation is met if such transfer or right is conveyed by means of data message.[498] Therefore it is possible and technically realistic for an endorsement of the electronic bill to be attached into the electronic data message, duly verified by way of digital signature and thereafter transmitted to the endorsee in the same way as the endorser received the electronic bill from the original holder. In doing so the requirements of negotiability would be satisfied.[499]

1.7 Admissibility of evidence

If a written contract is not required than surely there should be no objection to the admissibility of electronic evidence to prove the existence of the contract.[500] UNCITRAL recommends that states amend their legislation to allow computer records to be admitted as evidence in litigation, that when possible computer

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491 paragraph 2.3.3.1
492 Williams 2000 Transnational Law & Contemporary Problems p562
493 Williams 2000 Transnational Law & Contemporary Problems p563
494 Williams 2000 Transnational Law & Contemporary Problems p563
495 Ash 2001 HYPERLINK http://www.deneysreitz.co.za 14 May
496 Ash 2001 HYPERLINK http://www.deneysreitz.co.za 14 May
497 Sundaram 2000 HYPERLINK http://www.maritimelegal.com 14 May

readable forms be allowed to substitute for written documents, and any signature requirements be reviewed with a view to permitting electronic authentication.[501] Therefore information should not be denied effectiveness, validity or enforceability solely on the grounds that it is in the form of a data message.[502] Nothing in the application of the rules of evidence shall apply so as to prevent the admission of a data message in evidence on the grounds that it is a data message.[503]

The only difference between a paper document that can be visually inspected and electronically processed data, is that electronic data must be converted to allow visual inspection.[504] Telegrams and telex transmissions, both formed from a series of electrical impulses resulting eventually in communication on paper, have been acceptable evidence of a contract.[505] EDI transactions possess characteristics which make them as reliable and accurate as transactions involving other electronic technologies.[506]

Most countries have complicated rules of evidence governing what is needed to introduce certain types of information into the record of a judicial or administrative proceeding.[507] UNCITRAL stated in a report from the Secretariat that there were fewer problems in the use of electronic data as evidence than might have been expected. Interchange agreements can state that where the original of a document be introduced in court as evidence, the model agreements provide that the electronic transmission constitutes an "original"[508]

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498 Kelly 1992 Tulane Maritime Law Journal p354
499 Article 4 of the UNCITRAL Model Law
500 Article 8 of UNCITRAL Model Law
501 Sundaram 2000 HYPERLINK http://www.maritimelegal.com 14 May
502 Sundaram 2000 HYPERLINK http://www.maritimelegal.com 14 May
503 Williams 2000 Transnational Law & Contemporary Problems p571
504 Boss 1992 Northwestern Journal of International Law & Business 1992 p62
505 Boss 1992 Northwestern Journal of International Law & Business 1992 p62

1.8 The future of the electronic bills of lading

The International Standards Organization[509] and the International Electrical Committee[510] are developing an EDI reference model under a joint committee called Open-EDI.[511] The goal of Open-EDI is to allow electronic transactions among "multiple autonomous organisations" that may or may not have any prior relationships.[512] In other words, businesses should be able to establish trading partners over networks like the Internet without any pre-agreement.[513]

1.8.1 XML

Because EDI is proving too costly and complex for most small businesses a new data language is being developed. This new development is called XML, which stands for extensible-Markup Language.[514] XML is more cost effective for smaller companies because the only software needed to create XML is an off the shelf software package. In reality XML is a metalanguage[515] that was created to make better web documents. It is a set of rules, guidelines and conventions for manipulating data.[516]

There is a great deal of ambivalence amongst professionals regarding the future of EDI. When EDI first appeared it was used to automate transaction processing, exchange information in a computer - readable form, and do it in a secured environment.[517] Big companies remain very enthusiastic about EDI. They say it allows them to share large amounts of sensitive information with suppliers on a computer-to-computer basis. Problems arise when the cost factor is taken into

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506 ISO
507 IEC
508 Open EDI is an application of electronic commerce that can be used to conduct short term commercial transactions between trading partners who do not necessarily have an established business relationship. For more information see Mitrakas A *Open EDI and Law in Europe* Kluwer Law International 1997
509 Boss 1992 Northwestern Journal of International Law & Business 1992 p62
510 Sheldon 1999 HYPERLINK http://www.linktionary.com 14 May
515 Boss 1992 Northwestern Journal of International Law & Business 1992 p66
516 Metalanguage is a language used to create other languages.
517 Adams EJ "Goodbye EDI, Hello XML" 2000 World Trade Magazine February p5
511 Morgan JP 2000 EDI's very cloudy future, Purchasing Magazine December 22 2000 p 104-106 (Found on Internet) HYPERLINK http://www.purchasing.com (Date of use 14 May

account. For small to medium sized businesses it is not always financially viable to implement EDI because of the cost factor.[518] In order to implement EDI, senders and receivers must use standardised language and protocols, something that is typically accomplished using translation software. The purchasing and installation as well as the training of personnel to use the software can be too costly for the small to medium sized business. Therefore while larger companies love to use EDI smaller companies appear to be at a loss in dealing with EDI.[519]

Indications of a movement away from EDI or at least a slowing in its use may be under way. The main reason for this appears to be cost based.[520]

The true commercial capability of XML is apparent when the flexibility of XML is combined with the structure of EDI.[521] XML/EDI documents are created quickly whilst still adhering to predefined business rules and definitions before being sent of. To this effect XML/EDI promises to be the standard framework for exchanging everything including bills of lading. Every digital appliance has the capacity to share and manipulate XML/EDI messages.[522] Furthermore XML/EDI documents include embedded instructions on how the transaction should be processed or displayed, in addition to the data to be manipulated. The document will automatically route itself to the correct point in a predetermined workflow process, even trigger events on its own, like generating shipment orders.[523]

XML/EDI is built upon the legacy of EDI systems, so companies using EDI won't have to abandon their expensive and well-established systems. XML/EDI is an open standard no single company can own the code or demand prohibitive

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512 Morgan 2000 HYPERLINK http://www.purchasing.com 14 May
513 Morgan 2000 HYPERLINK http://www.purchasing.com 14 May
514 Morgan 2000 HYPERLINK http://www.purchasing.com 14 May
518 Boss 1992 Northwestern Journal of International Law & Business 1992 p67
519 Adams 2000 World Trade Magazine p55
520 Adams 2000 World Trade Magazine p55

licensing fees. This is a relatively cheap and easy way to conduct business with anyone anywhere, in an industry.[524]

521 Adams 2000 World Trade Magazine p54

2 Conclusion

The role of documents of title like the bill of lading, in modern commerce is very real and obvious. The law has unfortunately been slow to adapt to the fast changing world of business technology, and this is noticeable in several ways and with a variety of implications.[525] The international transport industry operates under highly standardised procedures developed via international conventions. These procedures mitigate international conflict should disputes arise. The process of conducting international trade is complex, highly regulated and standardised internationally. These aspects work to the benefit of the exporter and importer in the elimination or mitigation of international risks.[526] If the electronic bill of lading is to succeed then a similar degree of international harmonisation and standardisation needs to be accomplished.[527]

It is important that the bill of lading retain its functions when it is electronically transferred. The paper – based bill of lading is one of the most respected documents in International trade. It is therefore difficult to renounce this document in favour of an electronic form. It is clear that new challenges and possibilities is brought by advancements in technology. Full scale implementation of electronic bills of lading is possible when taken into consideration the International Model Rules together with the new South African Legislation. [528]

International model rules such as the UNCITRAL Model Law on Electronic Commerce and the CMI rules for electronic bills of lading can be incorporated by agreement between two parties, making those rules applicable to that specific transaction. In South Africa legislation such as the *Electronic Communications and Transactions Act*[529] lays the foundation and effectively provides for the use

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522 Robinson 2002 HYPERLINK http://www.deneisreitz.co.za 26 October
523 Mulligan "EDI in foreign trade: a perspective on change and international harmonization" 1999 Logistics Information Management" p 300
524 Mulligan "EDI in foreign trade: a perspective on change and international harmonization" 1999 Logistics Information Management" p 300
525 Sundaram 2000 HYPERLINK http://www.maritimelegal.com 14 May
526 Act 25 of 2002

of the equivalent of an electronic bill of lading.[530] Parties therefore do not have to regulate the many technical and legal requirements in and underlying an interchange agreement.

The swift progressions made in respect of technology made the electronic transfer of documents such as the bill of lading a necessity. Therefore it is a necessity that an acceptable electronic format be created. The substitution of the paper - based bill of lading with the electronic bill of lading through EDI and the Internet is still however fraught with real problems. It is therefore advisable that parties that wish to trade through EDI and the Internet regulate many of the technical and legal requirements in the underlying trading partner agreements.[531] Such an agreement can provide a reasonable answer when the legal position is doubtful.

In the near future the electronic bill of lading will co - exist with the traditional bill of lading because the expenses of setting up an EDI network might prove too costly for everybody to acceed. Traders and the legislature should create a system in which they both feel comfortable, this will take a global effort from all the parties involved.[532]

The use of EDI and the Internet in international trade could revolutionize and simplify our documentation procedures. This new technology, with all its potential benefits will not fit neatly into the traditional framework we have built around the bill of lading. If we choose to see electronic commerce fulfill its potential we must fully embrace its use and develop new law to fit the new shape of technology. The law that is already in place should be administered properly and effectively.[533]

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527 International Transport & Trade Department E - mail Flyer 2003 (Found on the Internet) HYPERLINK http://www.wylie.co.za (Date of use 26 October 2005)

528 International Transport & Trade Department E - mail Flyer 2003 (Found on the Internet) HYPERLINK http://www.wylie.co.za 26 October 2005

529 Livermore 1998 HYPERLINK http://www.warwick.ac.uk 14 May

530 Williams "Something Old, Something New' 2000 Transnational Law & Contemporary

It is clear that the electronic bill of lading will become a reality. There are to many advantages attached thereto to prevent it form not being used. Before this can happen the electronic bill of lading will have to offer the same advantages and level of security offered by the paper – based bill of lading.

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