Shipping E-Bills of Lading and the Blockchain Technology Revolution

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Due to recent technological developments and widespread interest in blockchain technology, electronic bills of lading have once again been thrust onto the mainstage of international trade.

Background

Since the 1980's the realisation that international trade would benefit from the introduction of paperless transactions and a contemporary electronic replacement of the bill of lading, also referred to as an e-bill of lading, has noticeably grown. Recent technological developments, such as the introduction of blockchain technology, appear to have created new possibilities for the nurturing of widespread acceptance of the e-bill of lading. Despite the increased interest, paper bills of lading remain the 'go to document' in international shipping. Most of the international projects and initiatives, such e-UCP, BPO, Bolero, Electronic Shipping Solutions (ess-DOCS) and e-title™ haven't led to the true replacement of the paper bill of lading, yet.

Advantages of the e-bill of lading

The e-bill of lading can provide a solution to several of the problems identified with the paper bill of lading. With a paper bill of lading, the original documents need to be couriered to the recipient, and in many cases need to pass by a financial institution so documentary credit can be obtained. This can result in serious delays, in some cases leading to the demurrage and storage costs being due if the bill of lading is not presented in timely manner at the destination port. When an e-bill of lading is used, no original documents need to be transferred between parties involved. Large commodity traders are already attempting to downsize their working capital by increasing the use of the e-bill of lading. In doing so, they can provide their customer with the transport documentation faster and thus receive payment sooner, particularly when the payment term CAD (*cash against documents*) is used.

There are also other advantages, if the e-bill of lading is fully accepted, it would no longer be possible to 'lose' an original bill of lading and delivery of the cargo without presentation of the original bill(s) of lading would become a relic of the past. The (e-)bill of lading would also be easier to amend since the original documents no longer need to be collected and returned before the can be corrected, which is clearly a time consuming exercise.

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Several legal issues facing the e-bill of lading

One of the major issues why the e-bill of lading has not yet become mainstream is the fact that all the functions of the paper bill of lading would need to be replicated. An e-bill of lading is adequately able to fulfil the first two functions of paper bills (i.e. (1) a receipt for the goods shipped and (2) evidence of the contract of carriage) for relatively obvious reasons. The main issue, however, is whether it can also fulfil the third function and be a document of title. The functionality as a document of title allows for the easy trading of goods and for financing to be obtained from financial institutions by using the bill of lading as collateral. As such, this is an important pivotal point for whether or not the e-bill of lading will thrive and be accepted by the international trade.

Another challenge is the transferability of the negotiable e-bill of lading. The transfer requires that the document is negotiable; this can only be achieved by using a bill of lading that is 'to order'. Transfer of such a bill of lading is effected by the delivery (i.e. the physical handover) thereof to the intended recipient. Delivery of a paper bill of lading therefore varies from the delivery of an e-bill of lading by its very nature. Several other aspects also require consideration. For instance, can an electronic signature be treated as the equivalent of a 'physical' signature and can an electronically generated message be treated as the equivalent of a paper document? Furthermore, the rightful holder/possessor of the original paper bill of lading has title to sue in most jurisdictions. Does the same apply to the holder/possessor of an e-bill of lading? Cyber security and prevention of tampering also need to be adequately addressed. Some of the existing systems already do so in a practical sense. The question arises how these issues should be addressed legally and whether current legislation adequately facilitates the use of e-bills of lading.

International law

The most commonly applicable international legal framework for the carriage of goods by sea is the International Convention for the Unification of Certain Rules of Law relating to Bills of Lading of 1924 (the 'Hague Rules') and the amendments to this convention in the Brussels Protocol of 1968 (the 'Hague Visby Rules'). Since the Hague (Visby) Rules predate the technological developments that would enable the use of e-bills of lading by far, they were not drafted with the development of an e-bill of lading in mind. This results in the undesirable situation that carriage under an e-bill of lading on a voyage that would normally be governed by the Hague (Visby) Rules could be considered carriage without documents.

The Rotterdam Rules do provide the possibility of using an electronic equivalent for the bill of lading; the Electronic Transport Record (ETR). Several general definitions and ground rules for the ETR are given, thus allowing for further technological developments. The property-law aspects of the document of title functionality of the e-bill of lading are not regulated by the Rotterdam Rules, but left to the discretion of member states in their national law. The Rotterdam Rules have unfortunately not reached the number of ratifications necessary in order to enter into force.

The conclusion is therefore that a uniform international framework governing e-bills of lading is not in place. Several attempts have therefore been made to regulate e-bills of lading (or ETR's) by 'soft law'. The first attempt was made by the Comité Maritime International (CMI) on 29 June 1990, when it adopted its 'Rules for Electronic Bills of Lading'. The Rules' application is to be agreed upon by the contracting parties, which hardly ever happens, meaning that the Rules' have not gained the

popularity that was hoped for. Another attempt was very recently made by the United Nations Commission on International Trade Law (UNCITRAL). The 'Model law on Electronic Transferable Records (ETR)' was published in September 2017 and contains some guidelines for the use of negotiable ETR, thus providing guidelines for national legislators to apply in their national law. The Model Law epitomises the recent developments in law for the ETR. As such, they should be offered due consideration by national legislators considering amendment of their national law.

Blockchain technology

The web is buzzing with blockchain technology. The technology behind Bitcoin is heralded by some as the revolution and future of smart contracts and the global supply chain. Blockchain is often compared to a very particular ledger with lists of transactions that are accessible to everyone and joint accounting can take place globally via the internet. Both public and private blockchains can be created. What makes blockchain special is that mutations can only be made at the bottom of the list of transactions; previous entries cannot be altered. Since blockchain is based on a system of distributed trust and faith – control is spread out over participants globally – expert view blockchain as a breakthrough in broadly accessible, safe and reliable digital transactions.

Blockchain technology could be used to further the use of e-bills of lading. Recent experiments have revealed that blockchain can create unique and secure e-bills of lading. A major advantage of blockchain in comparison to technology in the existing systems, is that blockchain is globally accessible. A blockchain e-bill of lading could also potentially meet the requirements of the ETR as provided by the Rotterdam Rules, as follows from the recent publication of Professor Takahashi from Japan. The downside however is that extensive new legal infrastructure is necessary to regulate blockchain, whereas such a system is already (albeit partially) in place for some of the existing systems, such as ess-DOCS. Another drawback is that the International Group of P&I Clubs limits cover for carriage under e-bills of lading to those used with approved systems such as ess-DOCS, Bolero and e-title™. It is however very likely that blockchain technology will be implemented in these systems in the near future.

Conclusion

The fact of the matter is that it is no longer a question of whether e-bills of lading will become a staple in the international shipping trade, the question is when. It is quite likely that – in hindsight – blockchain technology will turn out to be the stepping stone for the further development and realisation of widely accepted systems for e-bills of lading and will prove to be the staging ground for the development of an internationally uniform legal framework that allows for the secure use of e-bills of lading and endows the e-bill of lading with the same functions as the paper bill of lading. The lacuna's in (inter)national law therefore appear to be all that is holding back the widespread acceptance of the e-bill of lading.