

Digitalization in Shipping from Legal Perspective

In the age of electronic revolution, secure and efficient data exchange is the key to a better future. In order to adapt to this challenge, the shipping industry and its linked businesses are undergoing tremendous transformations to embrace this technological trend. One of the responses is the digitalization of transport documents in the carriage process of goods by sea and in the supply chain. Despite the fact that electronic transport documentation is much more efficient, timesaving and cost-effective than the paper-based alternatives, the efforts of the industry in dematerialization has failed and the tangible documents are still used more frequently than their electronic counterparts are.

EU and the US entered different paths despite the U.S. - EU Joint Statement on Electronic Commerce in 1997. Confronting the current legislation process, it is indispensable to figure out the legal issues concerning the digitalization of maritime transport documents, and it is even more important now to harmonize the traditional territorially based legal systems in light of the borderless nature of digital documents. Thus, greater uniformity can be achieved in law and more certainty can be given to the participants of digitalization.

Research Question

This research attempts to figure out why the shipping industry has failed to make its transition to electronic transport documents so far, and what could be the feasible solution. To make things clear, it is essential to have a deeper understanding of the essence of maritime transport documents before addressing the core issues. Therefore, with the help of historical research method, a reasoned analysis of the principle types of maritime transport documents with a focus on their legal characteristics should be first conducted. Through this in-depth examination, we can deduct the form and functions of maritime transport documents in the age of digitalization.

Afterwards, this research looks into the issues relating to the digitalization process, including formation of electronic documents, electronic signature and authentication. By reviewing the legislations of the UN, this research is able to answer the legal principles in applying digitalized documents. In addition, this research conducts further examination on the established electronic transport documentation platforms, such as the SEADOCS, the Comité Maritime International Model and the Bolero Project. By examining the shortcomings of these systems, we are able to deepen our understanding of maritime transport documents, and therefore design a better solution. Next, using functional comparison method, this research is able to make a comparison between both common law and civil law jurisdictions.

ROLES OF A BILL OF LADING



By looking into the efforts of the industry in the past decades, it is easily noticeable that the resistance comes primarily from technological and legal aspects. In fact, technological impediments are more promising to conquer than the legal problems. While various technologies such as the EDI (Electronic Data Interchange), Public-key cryptography, Block chain, etc., are reshaping and ameliorating the digitalized system, the legislatures have made little progress. Following the success of two model laws, namely the UNCITRAL Model Law on Electronic Commerce (1996) and the UNCITRAL Model Law on Electronic Signatures (2001), new approaches from the UN seem to be barely satisfactory. Not only had the United Nations Convention on the Use of Electronic Communications in International Contracts (2005) failed to enter into force, but also lawmakers in the



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By finding out how judicial decisions respond to real-life situations, this research is able to reveal the tight relationship between law and society, and therefore discover the intention of respective lawmakers. Finally, discussion about the future legislative approaches, principles and instruments should start and direct the possible future path.

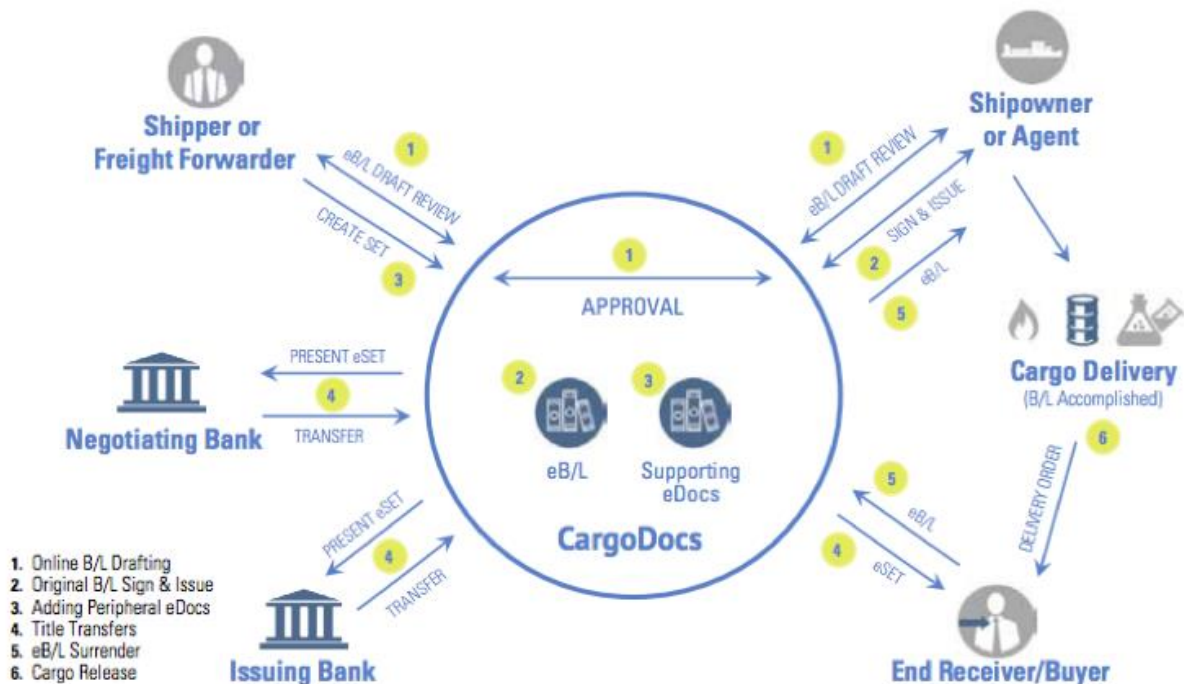
Possible Contribution to Praxis or Application

Paper documents are expensive. For each voyage, various documents must be issued for the sake of exportation, importation, cargo receipt, warehouse receipt, invoice, certificates of origin, manifest, etc. Not to mention that there is also a need to store these documents, verify them and file them. According to a client case-study of the electronic platform, CargoDocs, a quarter of a million dollars could be saved per year by replacing their paper-based documents with electronic equivalents. Secondly, paper documents are slow. Despite the increase in the use of non-negotiable documents, such as sea waybills, negotiable documents are still commonly used. According to a survey from UNCTAD, 88 percent of the respondents mainly use the negotiable bill of lading in practice as a security measure, which can be used in letter of credit or other finance-related requirements. Therefore, at least four parties are involved in a typical international transaction: a seller, a buyer, a carrier

and a bank. It is extremely time-consuming to transfer the documents from the seller to the bank, then again from the bank to the buyer. In fact, the time-consuming nature of paper documents has rendered them obsolete in short distance seaborne trade.

Meanwhile, in a digital atmosphere, documents will be issued, processed and verified automatically with little possibility for mistakes. Thirdly, paper documents are insecure. Frauds in shipping have been causing great loss, especially under the circumstance of delivery of goods without the original bills of lading. Paper documents are also easy to forge. But with the latest encryption technologies, such as the public-key or block chain, there is no room for fraud anymore.

It is quite clear that we are in a transitional period from paper to electronic documents, and the shipping industry is no exception. Willingly or not, the acceptance and the growing use of electronic transport documents is inevitable. In spite of the laws reacting slowly, the shipping industry cannot afford to sit by idly. By conjecturing on the possible direction of future legislation, the industry is likely to influence the rule-making process, and seize various opportunities in this new market.



Workflow CargoDocs Platform, Source: www.essdocs.com