

THE PROBLEM OF INTEROPERABILITY

There is neither a common set of rules, nor a legislation that regulates the principles, obligations, liabilities of above-mentioned platforms. As explained in the previous sections, every platform creates its own rules, collecting data within their own ecosystem, thus, creating their so-called digital islands. There are plenty of shipowners', ICT providers', supply chain operators' projects. All platforms claim that their system is the most efficient one and offer different kinds of services with different kind of technologies, programs in order to convince and attract clients. To this end, different groups of users are divided among various platforms which best suit them.

However, a single transaction in an international sale of goods involves many actors including buyers, sellers, carriers, banks, insurers and regulatory bodies, with distinctive interests. These actors may be subscribed to different networks even though they will be involved with the same goods and representative documents.¹ The fragmentation of user groups makes it more difficult to transfer rights interactively across diverse platforms. Lee states that *'This impedes free trade rather than facilitates it, a far cry from the current paper B/L practice where parties freely transfer rights by transferring B/Ls to any trade partner they choose'*.²

Therefore, it is crucial that users can transfer and render data, document and/or other information across systems, applications or components. This can only be possible if everyone who touches BBe-B/L, is using the same data format and communication standards so that it can be transported seamlessly regardless of pre-existing relationships between stakeholders³ in a free environment just like paper B/L can circulate, in other words in an

¹ Hwaidi, 105.

² Lee, 26.

³ 'DCSA takes on eBill of Lading standardisation, calls for collaboration' DCSA <<https://dcsa.org/initiatives-old/ebill-of-lading/>> accessed 12.11.2020

interoperable way, since interoperability provides, autonomy, flexibility between industries, freedom of choice, access, freedom to change the service provider.

Marxen states that, *'If e-B/L were to replace B/L printed on paper, one of the conditions will arguably be universal, or at least near universal, acceptance of a certain common system, or failing that, interoperability with sufficient reliability based on common standards'*.⁴ Lee support this approach by stating *'Uniform rules can vitalize the use of e-B/Ls by allowing interactive transfer between different user groups while enhancing foreseeability and lowering risks in legal disputes'*.⁵

However, as Hileman and Rauchs point out *'Making networks that are based on different protocol specifications interoperable constitutes a significant challenge, as no clear standards have emerged yet and most implementations are attempting to establish their own specification as an industry standard'*.⁶

Currently, there are a few suggestions in order to achieve interoperability. One of them is the unilateral design approach which means that the market participants should design their products or services enabling the other participants to offer interoperable products or services. Another way is through intellectual property("IP") licensing, where one party grants others access to technology, specifications, and/or rights associated with the technology's use. This way is more flexible; therefore, it is accepted it suits better to future technologies.⁷ Furthermore, the states may play active role in creating an interoperable environment. They can regulate mandating standards or oblige the service providers to implement transparency rules about their technologies by setting up a centralized organization that manages data and processes. Another regulatory approach can be through independent systems which support

⁴ Karl Marxen, 'Electronic bills of lading in international trade transactions - critical remarks on digitalisation and the blockchain technology' (2020) 25(1) CovLJ 31.

⁵ Lee, 26.

⁶ Hileman, 102.

⁷ Urs Gasser, 'Interoperability in the Digital Ecosystem' (Research publication, The Berkman Center for Internet&Society Harvard University 06.07.2015).

services for achieving interoperation by providing suitable conditions to exchange data and synchronize processes acting as intermediate agencies or access points, likewise the working principles of internet.

On the other hand, the drawbacks of interoperability should not be ignored. It is a fact that it will increase the security risks as the security level of the platforms may not be the same. In an interoperable ecosystem, the liability arisen from a damage cannot be easily allocated. With the implementation of IoT devices and AI, this uncertainty may augment. It is essential to have high level of security, however, in case of a breach the users may suffer from this ambiguity because it may not be possible to determine from where the algorithm obtained the inaccurate data. Furthermore, the implementation of such clearing houses or technologies may increase the cost that prevent the new parties to enter into the ecosystem while strengthen the existing ones, causing a monopoly behalf of the dominant participants.

Within this scope, all industries are seeking for standardisation. International organisations are working hard on this issue. UN/CEFACT proposes its data models to create an interoperable environment and has developed a recommendation numbered 34 on data simplification and standardization, while the World Customs Organization has developed its own data model.⁸ Meanwhile, ICC launched a working group on digitalisation in trade finance in order to provide electronic compatibility of ICC rules.⁹ Moreover, the International Telecommunications Union¹⁰, the International Electrotechnical Committee, the Blockchain Research Institute and the Blockchain Interoperability Alliance are working on this issue, whereas International Organization for Standardization(“ISO”) is working on a series of

⁸ Emmanuelle Ganne, ‘*Can Blockchain revolutionize international trade?*’ (World Trade Organization 2018).

⁹ ‘Digitalisation in Trade Finance’ ICC
<<https://iccwbo.org/global-issues-trends/banking-finance/icc-digitalisation-of-trade-finance/>> accessed 12.11.2020.

¹⁰ ‘Internet of Things Global Standards Initiative’ ITU
<<https://www.itu.int/en/ITU-T/gsi/iot/Pages/default.aspx#:~:text=IoT%2DGSII%20aimed%20to%20promote.Things%20on%20a%20global%20scale>> accessed 12.11.2020.

blockchain and DLT standards by its technical committee ISO/TC 307,¹¹ some of them is regarding terminology and concepts, privacy and personally identifiable information protection, security risks and vulnerabilities, legally binding SC, interactions between SC in blockchain and DLT systems.¹² Furthermore, the European Commission announced the launch of the EU Blockchain Observatory and Forum in order to accelerate blockchain innovation and development of blockchain ecosystem within the EU¹³. Lastly but not the least, the Digital Container Shipping Association was established in order to promote common information technology standards for digitalisation and interoperability in the sea shipping industry.¹⁴

Meanwhile, there are several projects that attempt to define methods to facilitate cross-chain communications including data sharing and value transfer, such as Ripple's Interledger Protocol, the Cosmos and Polkadot projects. Such projects' purpose is to create a chain of chains. However, it is likely that the emergence of a common cross-chain protocol will take some time.¹⁵

Eventually, such standards will not be legally binding, but will create a common practice and understanding in private sector that will guide the nations in regulating blockchain afterwards.

All in all, the industries are in need of further standardisation, especially in maritime industry as currently, it is the clients who are trying to evaluate the effectiveness and trustiness of platforms within their own knowledges. In my point of view, an international certification system can satisfy such a need.

¹¹ Technical Committees ISO/TC 307, 'Blockchain and distributed ledger technologies' ISO, 2016 <<https://www.iso.org/committee/6266604.html>> accessed 12.11.2020.

¹² Nicky Morris, 'ISO blockchain standards planned for 2021' Ledger Insights, <<https://www.ledgerinsights.com/iso-blockchain-standards/>> accessed 12.11.2020.

¹³ EU Blockchain Observatory & Forum <<https://www.eublockchainforum.eu/>> accessed 12.11.2020.

¹⁴ N Wagner B Wiśnicki, 'Application Of Blockchain Technology In Maritime Logistics' (2019) 4(1) Dubrovnik International Economic Meeting 155.

¹⁵ Hileman, 102.

MLETR art 12.1.iv enable a certification system that will supervise the reliability of the methods used for ETRs. Within this scope, an internationally reliable and independent body, should publish a set of rules, analyse the compliance of the platforms' systems to these rules upon platform's application, provide certificates to the ones who comply with the rules and make audits from time to time while updating the rules in line with technological developments. Such a method has been successfully implemented for information security by ISO under the standard 270001 for instance.

The rules should aim to unify the terminology, oblige the usage of natural language in the clients' interface, set certain security and privacy rules considering the implementation costs, determine obligations on the service providers as well as the rights and obligations of the users, allocate the risks and liabilities and enable data transportation. This authority should supervise the constitutions and/or multilateral agreements of the platforms. The rules may forbid, non-liability clauses drafted behalf of the service providers, - for instance regarding liability arisen from coding errors; clickwrap alike agreements and/or any other kind of provision that disturb the balance between the parties and even among the service providers which may cause the abuse of dominant position under the competition law. In my point of view, such a system would lower the barriers to entry, making it difficult for dominant parties to lock users into bad deals. I believe that a certification system will create trust and reputation for the service providers and will protect the participants, organize the processes, provide users freedom to choose and change the platform they use and most importantly, enable interoperability.

It seems that, due to the need for an interoperable environment, lawmakers do not think that the technology is sufficiently mature to be regulated. It should be emphasized here many countries have specific regulations regarding cryptocurrencies¹⁶ which also functions through

¹⁶ 'Legality of bitcoin by country or territory' <https://en.wikipedia.org/wiki/Legality_of_bitcoin_by_country_or_territory> accessed 12.11.2020.

blockchain technology. This proves that lawmakers wait until technologies reach certain level of understanding and adoption in the public, in order to find worth regulating. It seems that the interoperability problem prevents the lawmakers regulating BBe-B/L and that they wait until necessary standards are created and implemented by the market. In my point of view, substantive law regulations will follow the establishment of a certification system and its adoption by significant number of service providers.

On the other hand, even though interoperability between the platforms is essential for international trade, as well as BBe-B/L systems to function fluently, it is not all. Public sector must collaborate with the platforms and integrate their usage in their national system which can be realised through a single window environment.