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INTERNATIONAL & INDUSTRY LIAISON UNIT

TRADE BEAT

Facilitating International Trade and Customs Clearance through

Blockchain Technology

What is a Blockchain?

In simple terms, a blockchain is a transaction ledger that stores information in blocks that cannot be changed. The chain is created when new information is added to the ledger by appending the block. The previous information stored in the blocks cannot be edited, adjusted or changed. The contents of the newly added block is then linked with each preceding block, in such a way that any change to the contents of a previous block would invalidate the data in all the blocks after it. This is done through cryptography, where a code is generated through the linking process, allowing the information to be kept secret, otherwise called encryption.

Blockchain Technology

Blockchain is a decentralized and consensus driven technology, where a mathematical proof must be given to the network to facilitate additions to the block. Computers connected to the network are also referred to as nodes. The results of the mathematical proof are then shared with all nodes connected to the network which must agree on the solution, thereby achieving consensus.

Consensus Driven

Achieving consensus is necessary in order to reduce the risk of malicious transactions being added to the block. The system of consensus also serves to decentralize the ledger as information is added, making it impossible for a single entity to control the information in the blockchain. Because information is based on the consensus of multiple entities related to the information, transactions recorded in the blockchain can be publicly published and verified, such that anyone can view its contents and verify that events recorded therein, actually took place.

Characteristics of the Blockchains

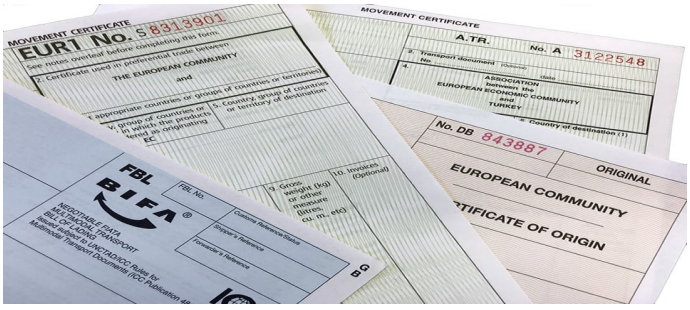
- Transaction ledgers
- Immutable (unchangeable)
- Consensus-driven
- Decentralized
- Distributed trust network
- Secured by cryptography
- Can be made public

Inside this issue:

Blockchain Technology

Barriers to Cross-Border Trade

The cross-border movement of goods, services, technology and capital, or simply international trade, has experienced exponential growth over the years, and has facilitated the interdependence of national economies across the globe. However, the international trading system has been susceptible to significant trade barriers, creating higher costs and lengthier processes. A significant contributor to costly and lengthy procedures is the volume of documentary requirements and the cost of handling such documents associated with a single shipment. Documents subject to traditional import/export mechanisms may be subject to fraudulent manipulations or simple human error, that may lead to mishandling of shipments, resulting in further costs and delays.



Documentary Requirements relating to a single shipment may consist of the documents listed below:

Commercial Documents:

- Quotation
- Sales Contract
- Pro-forma Invoice
- Commercial Invoice
- Packing List
- Inspection Certificate
- Insurance Policy
- Insurance Certificate
- Standards Testing Certificate
- Health Certificate
- Phytosanitary Certificate
- Fumigation Certificate

Transport Documents:

- Shipping Order
- Dock Receipt
- Sea Waybill
- Air Waybill
- Packing List

Government Customs Documents

- Certificate of Origin
- Import/Export Declaration
- Import/Export Licence
- Customs Invoice

Trade Facilitation through Blockchain Technology

Traditionally, trust in international trade was established via relationships with known trade partners. With the increase in globalization and the growth of e-commerce, trust based on personal relationships when conducting international trade, has become largely impractical and has subsequently been conferred to trusted intermediaries and legal guarantees. These guarantors of trust, however, come at a cost. With each international trade transaction requiring multiple guarantors, such as banks, notaries, insurance companies and certification bodies, the cost of trade becomes understandably significant.

Trade facilitation focuses on reducing delays and costs created by the use of trust services, and seeks to increase the transparency and efficiency of the international trading process. However, trade facilitation measures that have been implemented, are still subject to time and cost constraints associated with trust services. Blockchain technology has the potential to provide trust, via a digital platform, that traders require at a much lower cost, using fewer trust guarantors.

This innovative technology, otherwise called Digital Ledger Technology (DLT), is best known as the underlying technology for the cryptocurrency known as Bitcoin. Blockchain technology allows for the creation of electronic originals, where sellers and purchasers can transfer ownership of the bitcoin, after the transaction is completed. This creation of electronic

originals can be used to notarize any electronic document or agreement with a time stamp and a guarantee that no changes have been made since that time. As a result it can be used to create original electronic documents such a contracts, certificates and licences. Due to the use of cryptography, the network records the creation of the initial transaction and does not know the identities of the participants in the transactions. However, the network is able to ascertain and record that the transaction took place and the respective time it occurred. Dependent on the design of the particular blockchain and associated applications, an audit trail can be created for multi-party and multi-location transactions occurring over time. As Blockchain technology is refined and enhanced, the network can be used to support a range of trade processes including the creation of original electronic trade documents, such as bills of lading and the ability to record and store their transfer. This information can be then accessed by regulatory authorities, like customs administrations, that will facilitate the trade process, making it more efficient. Blockchain technology also assists trade regulatory bodies in the prevention of fraud. Documents such as standards testing certificates or export licences can be generated within the network once the regulator is a partner to the blockchain network. Such initiatives are already underway and have been garnering international interest from a host of international trade entities.

Utilizing Blockchain in cross-border trade

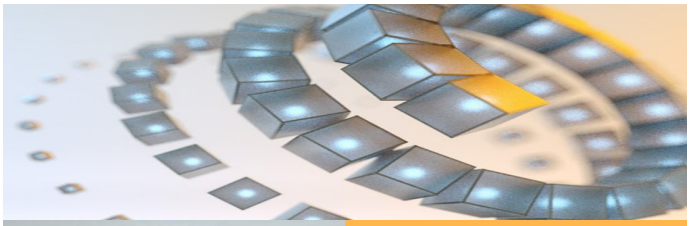
- ***The Maersk-IBM Blockchain Collaboration***

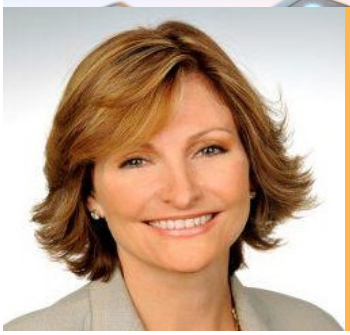
Transport and Logistics conglomerate A.P. Moller-Maersk and IT giant IBM, have collaborated on a blockchain based global platform aimed at digitizing global trade. This joint collaboration has recently been dubbed TradeLens, and has been attracting a wide variety of global entities, ranging from customs authorities, port operators, logistic companies and even competing ocean carriers. With the pilot phase of the platform now complete, TradeLens is expected to be fully commercially available by the end of 2018.

TradeLens

TradeLens is a blockchain based cross-border supply chain programme that manages and tracks the paper trail of a host of shipping containers across the world. It is built on the Hyperledger Fabric and designed for use by the entire global shipping ecosystem. According to its website, "Hyperledger is an open source collaborative effort created to advance cross-industry blockchain technologies. It is a global collaboration, hosted by The Linux Foundation, including leaders in finance, banking, Internet of Things, supply chains, manufacturing and technology." This global shipping ecosystem already contains more than 20 port and terminal operators across the globe, such as the Port of Rotterdam and other global container carriers such as Hamburg Süd. Customs authorities have also joined on as partners, and include the Customs administrations of Australia and Saudia Arabia.

With more than 154 million shipping events captured on the platform, the rate of data being recorded per day averages close to one million events per day. TradeLens has the capacity to capture a plethora of information such as data on arrival times of vessels, container gate in and gate out information, as well as documentary information capturing customs releases, commercial invoices and bills of lading.





"Our work with Maersk and other enterprises in the shipping ecosystem has shown that blockchain can be used to form a strong, connected network in which all members gain by sharing important data and that together we can transform a vital part of how global trade is conducted."

Bridget van Kralingen
SVP, IBM Global Industries, Solutions and Blockchain.

Blockchain Technology

Blockchain for Customs

Blockchain technology has already become a part of the international Customs landscape. As such, Customs Administrations across the globe will become:

- **More Data-driven** - Through participation in the blockchain, Customs administrations can require and collect all necessary data attached to the trading process in an accurate and timely manner. All data associated with the commodity being traded on the platform, such as information from the seller, buyer, price, quantity, carrier, finance, insurance, status, and location will be available to Customs. This will allow for improved capacity for risk analysis and targeting, thus improving trade facilitation.

- **Part of the Blockchain Network** - Customs will become embedded in the trading process as data conveyed by the blockchain will be automatically integrated into Customs systems and checked against the data submitted by traders and transporters. In a more integrated version, customs clearance within the blockchain would be a possibility.

- **Better equipped to combat financial crimes** - Due to regular updates to the system of banking events that would otherwise be used to conceal illicit financial flows. Trade data submitted by operators could be compared to capital transfer recorded by financial institutions, leading to a greater probability of detecting financial crimes.

- **More Cooperative with Tax and other Customs administrations** - The blockchain network provides automated access by Customs to data lodged into the system of exporting countries, which will encourage revenue compliance in import countries. This would help Customs with issues around valuation and transfer pricing, and underpin further cooperation between Tax and Customs authorities.

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The International and Industry Liaison Unit is committed to raising the level of awareness on topics relating to the Caribbean Community, as well as issues concerning the wider topic of international trade, to both our internal and external stakeholders. Our monthly newsletter seeks to highlight global trade topics and their importance to Customs Administrations worldwide and specifically how they affect the Jamaica Customs Agency. As we realize our vision of becoming a modern Customs administration delivering excellent service, we recognize the importance of knowledge transfer in delivering our objectives and use this forum as our way of contributing to the vision of the JCA. The International Liaison Unit is located at the Myers Wharf head office and our officers are available to respond to your queries and clarify any points of concern.

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