

BLOCKCHAIN: THE POTENTIAL TO CHANGE THE ENTIRE ECONOMIC WORLD

The shipping industry has been given a fresh opportunity to strengthen the security of their data that could spell the end of paper documentation. Blockchain technology promises to revolutionize container logistics by connecting the supply chain in a way the industry has never seen before. Should the technology enter operation it could also bring annual cost savings, eliminate time-consuming processes, as well as create trust and partnership to all parties involved. Blockchain establishes a shared, immutable record of data which is encrypted and inherently resistant to modification, requiring confirmation from all participants in the network before any changes can be made.

What is blockchain?

A blockchain is a database that is used to store digital assets or transactions which is then replicated and shared across a network. There is now wider interest from the maritime industry in the potential uses of this technology to streamline maritime transactional processes.

Its ability is to create “mutual distributed ledgers,” which are self-governing, tamper-free, online databases that no one owns but that everyone has access to and can trust. It promises the potential of mass disintermediation of trade and transaction processing.

Container logistics is rooted in a byzantine world of legacy IT systems, massive amounts of data-entry-type paperwork and milestone management processes. Each process requires a different set of documents, typically done by humans interacting with multiple parties, whether that's with legacy computer systems, email, phone calls or sometimes even faxes.

Each of these interactions represents a potential point of failure, vulnerable



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to illicit manipulation or simply human error.

The money spent on processing documents that are not digitized is astronomical.

The introduction of blockchain in the marine shipping environment eliminates much of the problem in today's cargo logistics process. Each blockchain consists of records, called “blocks,” which reference and identify the previous block using a cryptographic function. This forms an unbroken, verifiable chain of custody. Old transactions are preserved forever and new transactions are irreversibly



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added to the ledger. The beauty of this process is that it's distributed, meaning it can live on multiple computers at the same time, accessible to anyone with an interest in that particular transaction. So it literally could enable smaller companies to be more agile within the global trade environment.

Blockchain Benefits

A blockchain has three main characteristics that lend itself to improving transactions. It is distributed, immutable and permissioned. As the information within a blockchain is duplicated throughout a network it is not stored in a centralized location,

which allows anyone to access an up-to-date version of the information (distributed). The information is protected as old blocks cannot be tampered or altered, and new blocks of information must be verified by consensus of other members in the network before it is appended to the previous block (immutable). Which, in the maritime example as it uses a private blockchain, can only be done by those within a set network that have the correct read/write approval (permissions). This creates a tamper-proof and time-stamped digital paper record of the origin and journey of all the transactional documents.

For the maritime industry, the cost and efficiency benefits of blockchain technology are noticeable in the context of cargo management, as the safety of cargo transportation requires considerable logistical and administrative investments. In the case of paperwork, these include Bills of Lading, Letters of Indemnity and Charters. To complicate matters, cargo, like oil, can be sold multiple times in rapid concession during short voyages. The final paperwork must be signed and approved by a multitude of entities within the transaction before the cargo can be discharged. This, in turn, would mean it must be couriered between these entities, which is both time-consuming and

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