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Supply Chain Adoption of Blockchain Continues to Gain Steam and Generates Many Legal Issues

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While there has been a great deal of attention being paid lately to the use of blockchain for the issuance and investment (or speculation) in cryptocurrencies, other enterprise-based applications of blockchain continue to be deployed with increasing frequency but less fanfare.

One of the more recent deployments of blockchain – viewed as a milestone in the world of supply chain logistics – is based on Easy Trading Connect ("ETC"), a blockchain-based system developed by a consortium of companies led by Dutch financial institution ING. The system was initially designed to manage commodity trading funds transactions. The most recent transaction, involving a shipment of soybean cargo, is believed to be the first agricultural commodity sale processed completely "on chain" (*e.g.*, on a blockchain-based system). The ETC was used to process all steps of the transaction, and reportedly no paper contracts, certificates or other similar documents changed hands. According to ING, the system reduced what is traditionally a process of 11-14 days to only four days.

This is not the first deployment of ETC – in 2017, it was used to handle the sale of an oil consignment. The shipment at issue was resold three times through the system before it actually left its departure point. The banks involved reportedly reduced the cost typically associated with these types of transactions by thirty percent.

Another recent collaboration in the supply chain area is the joint venture announced earlier this month by IBM and Danish shipping giant Maersk, which are working together to build a blockchain-based platform to streamline global trade transactions. The platform will be designed for use by the global shipping ecosystem and incorporate cloud-based open source technologies based on artificial intelligence and the "Internet of things". The joint venture is expected to reduce transactional costs by at least ten percent. A number of large multinational chemical and consumer goods companies, customs and government authorities, and terminal operators are reported to be participating in the collaboration. Solutions from the joint venture are awaiting regulatory clearance and may be available in as soon as six months. According to the new company, on its first day of operation, it will track 18 percent of ocean containerized trade.

Benefits of Blockchain Deployment in the Supply Chain

It is not surprising that we are seeing increasing deployment of blockchain in the supply chain space, as benefits that it could bring include:

- Improved tracking and faster shipping times
- Lowering costs associated with documentation and bureaucracy: The cost of trade documentation required for processing and administering consumer goods carried by the ocean shipping industry may be as high as one-fifth of the actual transportation costs
- Reduction of fraud and error in processing transactions
- Improving security of transactions
- Increased ability to understand and utilize data (including big data) and analytics, which could optimize distribution and logistics networks and improve forecasting and development of new services

Legal Issues

Notwithstanding the rapid evolution of the technical and business aspects of blockchain in supply chain, many legal issues still need to be resolved in connection with these types of transactions, including some of the following:

- Assuming that most supply chain blockchain implementations will be of a permissioned nature, how will their deployment be governed? For example, how will the ability to participate be determined? What are each participant's rights and obligations? What are the antitrust issues associated with forming a closed and

permissioned implementation, which may involve competitors in the same industry?

- How will the validity and enforceability of “on chain” transactions be viewed by a court or regulators?
- The relevant portions of the Uniform Commercial Code (“UCC”), the set of legal rules governing sales and commercial transactions adopted by many U.S. states, were drafted well before blockchain was even a twinkle in the eye of Satoshi Nakamoto. As a result, the UCC’s definitions and provisions are mismatched to this new way of processing supply chain transactions. How will this mismatch be resolved?
- How will choice of law, jurisdictional and similar issues be resolved in the world of global transactions where records are kept on a decentralized basis on every node in the network, wherever they may be located?
- What will a platform provider’s obligations be with respect to adherence to international standards to ensure interoperability and integration with third party systems?
- With respect to the “rush to patent the blockchain”, how will the inevitable onslaught of patent litigation in the area impact business? Who will bear that risk?
- How will the concern about cybersecurity impact these implementations? What precautions and certifications will be needed to address these concerns?
- Will there be a “master” record keeper in this process? How will litigation issues around discovery be addressed? How would audits, subpoenas and investigations be handled?
- If the technology fails, who is responsible, and would it be considered a force majeure event?

Regardless of what happens in the world of cryptocurrency, enterprise adoption of blockchain is real. As usual, while technology and business models race ahead at breakneck speed, law lags well behind with many issues to think through, negotiate and, in some cases, litigate.

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