

Clients & Friends Memo

Will Blockchain Render the Bill of Lading a Relic?

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A bill of lading is an old form of legal document. As merchants in the seventeenth and eighteenth centuries ceased accompanying their goods on ships and entrusted their proper delivery to the carrier, a need arose for a tangible and transferable document evidencing which party was entitled to receive the goods at their destination. The merchants developed a system in which the sender would obtain a receipt from the ship's master and convey it to the intended recipient of the goods, who would subsequently present the receipt to the carrier upon delivery to prove his title to the goods.

Today, hundreds of years after the introduction of the bill of lading, technological innovation—and of particular interest, the emergence of blockchain technology—is raising new questions about the future of this venerable document of title. Recent media accounts report collaborative ventures between traders and financial institutions using blockchain solutions to serve the functions of bills of lading.¹ Modern bills of lading still perform the same basic functions as their ancient ancestors: they evidence the title to the goods being shipped, the contract of carriage, and the right to receive and direct the disposition of those goods. The blockchain solutions emerging in commodities trading seem to have the same functions. It is fair to ask, then, whether blockchain is a new kind of bill of lading – or is something different that will render the bill of lading a relic.

What is Blockchain and How Does It Work?

While there are various potential applications of blockchain technology,² it may generally be described as a decentralized, automated system for storing information about transactions among its members. For our current purposes, we envision a hypothetical blockchain (the “Model Blockchain”) that has the following qualities:

1. It would be “permissioned”—that is, participants in the Model Blockchain must be admitted by the existing members and the general public would not have access. The members would

¹ See, e.g., “What’s cooking in the blockchain kitchen?” (2017), <https://www.ing.com/Newsroom/All-news/Whats-cooking-in-the-blockchain-kitchen.htm>; and Denis Balibouse, *Mercuria Introduces Blockchain to Oil Trade with ING, SocGen*, REUTERS, Jan. 19, 2017, <http://www.reuters.com/article/us-davos-meeting-mercuria-idUSKBN1531DJ>.

² For examples of recent endeavors, see *Blockchain: A Better Way to Track Pork Chops, Bonds, Bad Peanut Butter?*, N.Y. TIMES, <https://www.nytimes.com/2017/03/04/business/dealbook/blockchain-ibm-bitcoin.html>.

presumably include the relevant merchants buying and selling the goods, the carriers responsible for their shipment and the financial institutions that finance such transactions.

2. The Model Blockchain would not be anonymous. Each member would be identifiable by its applicable digital signature, which a computer could match to such member's name.
3. The system would be decentralized and "trustless," in that no single party would validate a transaction. Rather, transactions would be validated by the Model Blockchain's members collectively. For example, each member would verify (via computer) basic facts about the transaction to protect against fraud or double spending. After validation, a transaction would be written into a block in the Model Blockchain. Data in a block would be encrypted such that it is nearly impossible to modify. This decentralized verification system—referred to as a distributed ledger—is the fundamental characteristic common to all blockchain systems.

In practice, the data for any particular transaction in the Model Blockchain would identify the transferor, the transferee, the carrier, the time of the transaction, what is transferred, and any miscellaneous data the transferor decides to include as "metadata." Further, we imagine that the legal title to real-world, tangible assets being transferred via the Model Blockchain would be represented as digital coins ("Blockcoins"). A Blockcoin would be analogous to a Bitcoin, but would have no monetary value and instead would represent the goods themselves.³ Blockcoins and the Model Blockchain would work in tandem to identify electronically who controls the Blockcoin and thus has title to the goods.

Will Blockchain Supplant the Bill of Lading?

As the breadth of the potential applications of blockchain becomes increasingly clear and the technology becomes more widely accepted, the next step is to determine how blockchain can be implemented within the existing legal framework governing bills of lading. Under U.S. state law, the rules governing bills of lading and other documents of title are housed mainly in Article 7 of the Uniform Commercial Code ("UCC").⁴ A gating question, therefore, becomes whether the Model Blockchain system constitutes a bill of lading under the UCC.

As you may expect, the vast majority of the applicable UCC provisions were drafted with paper bills of lading in mind. While new concepts, such as "electronic documents of title," have been incorporated into the UCC over time to accommodate technological advances, the basic structure still largely employs concepts foreign to the electronic frontier, such as "bearer," "issuer," or "copy." The challenge will be to structure the blockchain and draft the accompanying legal documentation in a manner that preserves the parties' rights and property interests under the UCC. It appears

³ Bitcoins used for such purposes are called "colored coins." Nicolas Dorian, PROGRAMMING THE BLOCKCHAIN IN C# 95, <https://www.gitbook.com/download/pdf/book/programmingblockchain/programmingblockchain>.

⁴ Unless otherwise noted, this article generally refers to the Uniform Commercial Code as in effect in New York.

that, properly designed, a blockchain system can be accommodated in existing UCC provisions governing bills of lading, as discussed in more detail in our two-part article, "[From Bills of Lading to Blockchain Structures](#)," published recently by *Law360*.

Benefits of Blockchain Being Bills of Lading

If blockchain transactions are bills of lading under the UCC, the benefits to transacting parties could be many. A classification under the UCC would provide clear legal answers regarding how to receive a perfected security interest in the bill of lading (and the underlying assets covered thereby). We believe that the Model Blockchain bill of lading could be negotiable or non-negotiable, if properly designed. There are well-understood risks of holding or lending against negotiable or non-negotiable instruments, and corresponding well-developed business practices in the trade and trade finance markets. For example, the UCC contains various rules on the rights of competing claimants (whether they are direct owners, transferees or secured parties) claiming an interest to a document or the underlying goods. To the extent that a blockchain transaction fits into an existing paradigm, the legal benefits and risks to transacting parties and creditors will be embedded in, and consistent with, existing frameworks and business considerations, thereby significantly reducing friction when migrating to an electronic blockchain system.

The use of blockchain in lieu of bills of lading remains largely hypothetical at this time, but offers real benefits to market participants (e.g., cost-savings, reduction in fraud, etc.) and appears attainable from a legal perspective. Indeed, it may very well become the industry standard sooner rather than later.

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If you have any questions, please contact any of the following attorneys or your Cadwalader contact:

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