

WHITE PAPER: SPIREON - BLOCKCHAIN

Blockchain & Fleet Management: Revolution or Riot?

WHAT'S ALL THE FUSS?

Blockchain represents a huge opportunity for the global economy. According to Deloitte, 10% of the global GDP will be stored on blockchain by 2025. To put that into perspective, the global economy is projected to be about \$120 trillion in 2025. This means that the blockchain industry or applications store on blockchain will represent \$12 trillion dollars.

The potential impact is massive. In 2017, only \$2 trillion dollars were processed through an e-commerce model. Even if you fast forward to projected e-commerce sales levels in 2020, the number rises to only \$4 trillion. That's still only a fraction of the opportunity blockchain represents.

Blockchain impact is also estimated to be larger than China's current National GDP of \$11.8 trillion, and larger than all the payments processed by MasterCard's Global Payment Network (\$10.7 trillion) in 2016.



LOADING . . .

80%

REVOLUTION

WHAT IS BLOCKCHAIN?

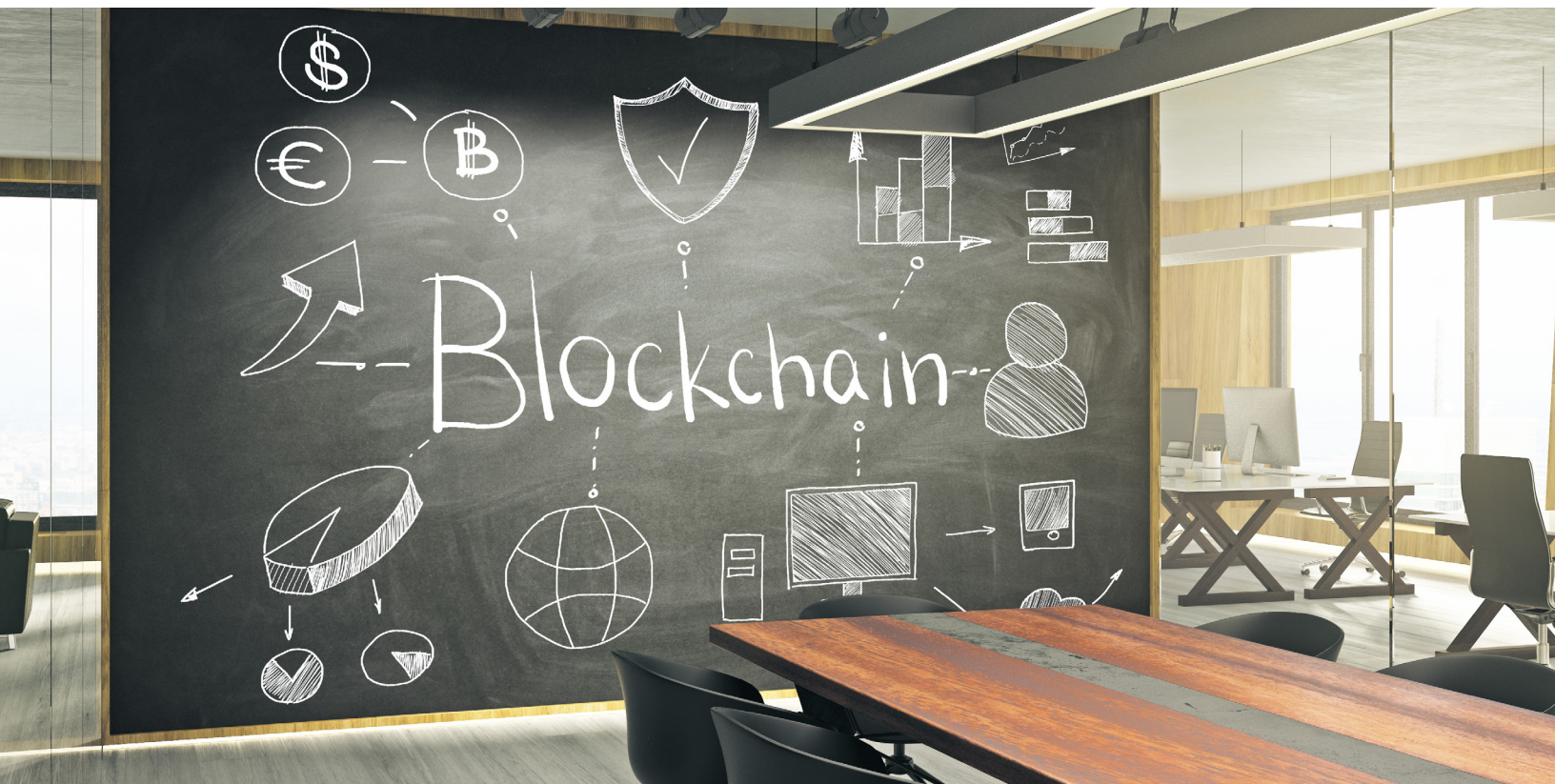
Blockchain is a decentralized and distributed digital ledger to record transactions across many computers so that the record cannot be altered retroactively without the alteration of all preceding and subsequent blocks and the collusion of the interconnected network. It ensures transactions between two parties are not only efficient, but transparent, visible, and protected from deletion, tampering and revision.

With blockchain it is possible to envision a world where every agreement, every process, every task, and every payment would have a digital record and signature that could be identified, validated, stored, and shared. This ensure accuracy by providing both parties with identical information, and could also potentially eliminate the need for intermediaries like lawyers, brokers, and bankers which would accelerate business and drastically reduce operational costs. This is the immense potential of blockchain.

EXAMPLE: A FRIENDLY WAGER GONE WRONG

To help you better understand, let's look at a short example of how this could work:

Dean, a big New England Patriots fan, and Craig, a stalwart fan of the Tennessee Titans, would like to place a wager on an upcoming game. They both agree to bet \$100 that their team wins. They shake on it and each make a note to document the \$100 transaction.



Then as you might have guessed, the Patriots win. Dean immediately calls Craig and says, “Craig, it’s time to pay up.” However, Craig, who had written down the bet amount incorrectly, only pays Dean \$10. As you might imagine, now we have a little problem.

That’s what business looks like today. Two parties end up doing business, and both parties create a ledger entry for the transaction, but neither of them actually know what took place.

So now we need to come up with an answer on how to solve for that. Either concessions need to be made or they will need to pursue a legal remedy – that’s really the idea of how business works today.

SOLVING THIS PROBLEM WITH BLOCKCHAIN AND SMART CONTRACTS

With blockchain it’s different, because the information is distributed, which means when we record that transaction, we are going to make the bet inside the blockchain and both of us have an identical copy to the transaction and have confidence the blockchain has not been tampered with. Both parties are on the same page - that’s essentially at its very core what blockchain is all about.

You can also pair a blockchain with something called a Smart Contract. A Smart Contract is computer code attached to a blockchain transaction, which is executed under predetermined conditions. This makes it possible to fully automate the entire transaction and guarantees that accurate payment is made in a timely fashion.

A DEEPER LOOK: HOW BLOCKCHAIN PREVENTS FRAUD

The blockchain is commonly referred to as the “DNA of data” because within the chain of blocks, there is a lineage and tracking data for all the information. Like DNA, all the information records a link to the history.

So not only does it replicate throughout the network and have identical copies, but it also validates itself against the previous blocks. So, we now know everything that took place. And if either party attempts to alter the block, both parties would be able to reference the fact that at the time we made the bet it was \$100 and not \$10. There would be irrefutable knowledge of that across the network.

Furthermore, because the information is distributed, it is resilient to single failures or hacking attempts. In other words, if I make one change to the transaction, then those transactions are invalidated if they don’t match the original records.

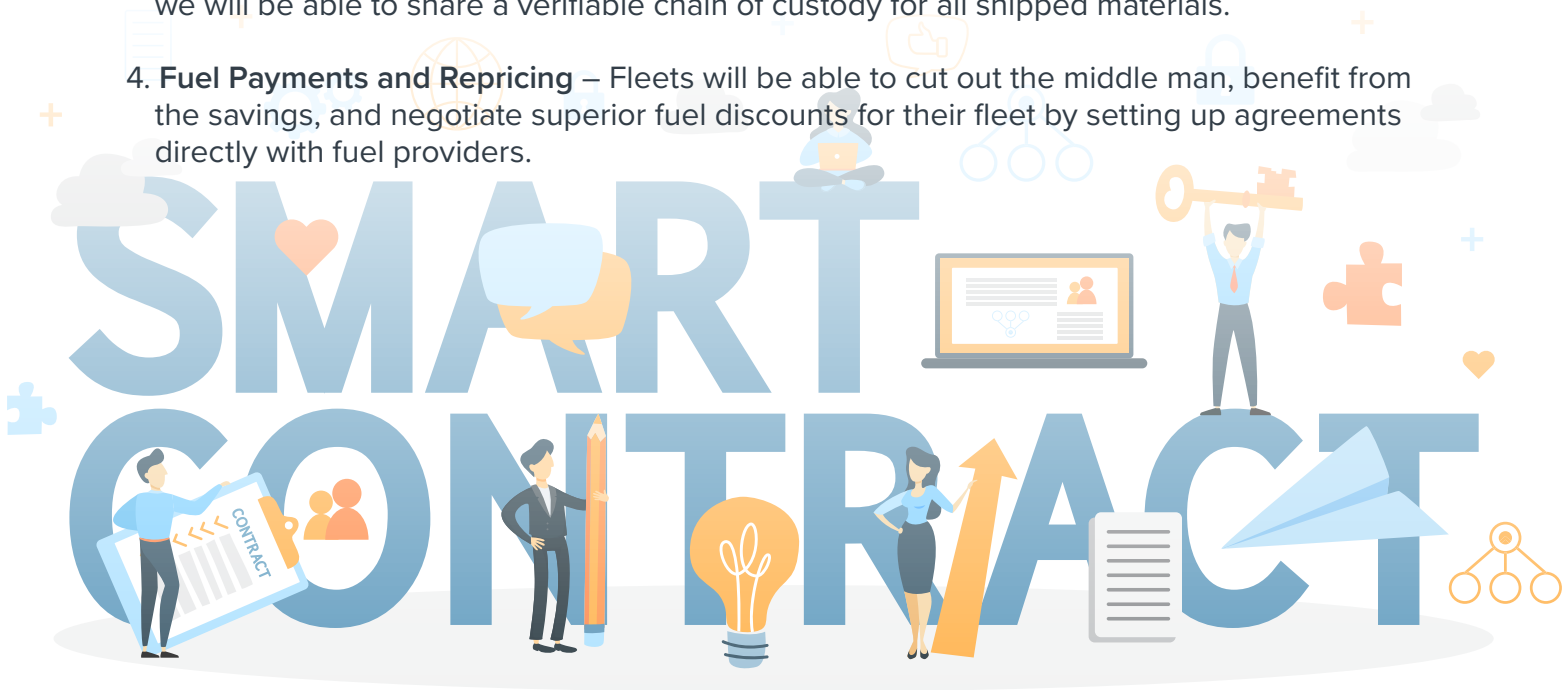
TRANSPORTATION COMPANIES AND BLOCKCHAIN

In today's world, transportation companies rely on intermediaries and internal processes like clearinghouses and fuel cards to mitigate the risk of disagreement, but in this case, we are only as good as the third-party intermediary we are trusting. With blockchain, all of the transactions are distributed and agreed to by consensus across the network so we don't have to use intermediaries to trust the validity of the information.

Blockchain and smart contracts are opening the door to significant innovation in the coming years. It will accelerate business transactions, and slash overhead costs in every industry.

Transportation companies are no exception - in the coming years, we expect this to cause the following four major innovations:

1. **Self-executing smart load contracts** – Blockchain will be used to create self-executing smart load contracts that automatically issue payment upon Proof of Delivery and are verified by telematics data.
2. **Automatically and accurately charge for detention** – With telematics data carriers will be able to not only charge for detention, but do so in real-time, per the conditions of an existing smart contract.
3. **Proof of Provenance** – As a result of leveraging smart load contracts within the blockchain, we will be able to share a verifiable chain of custody for all shipped materials.
4. **Fuel Payments and Repricing** – Fleets will be able to cut out the middle man, benefit from the savings, and negotiate superior fuel discounts for their fleet by setting up agreements directly with fuel providers.



Spireon is a member of the Blockchain in Transportation Alliance. To learn more about Spireon's transportation industry solutions, visit [Spireon.com/fleet-management](https://spireon.com/fleet-management) or call 1.800.557.1449.