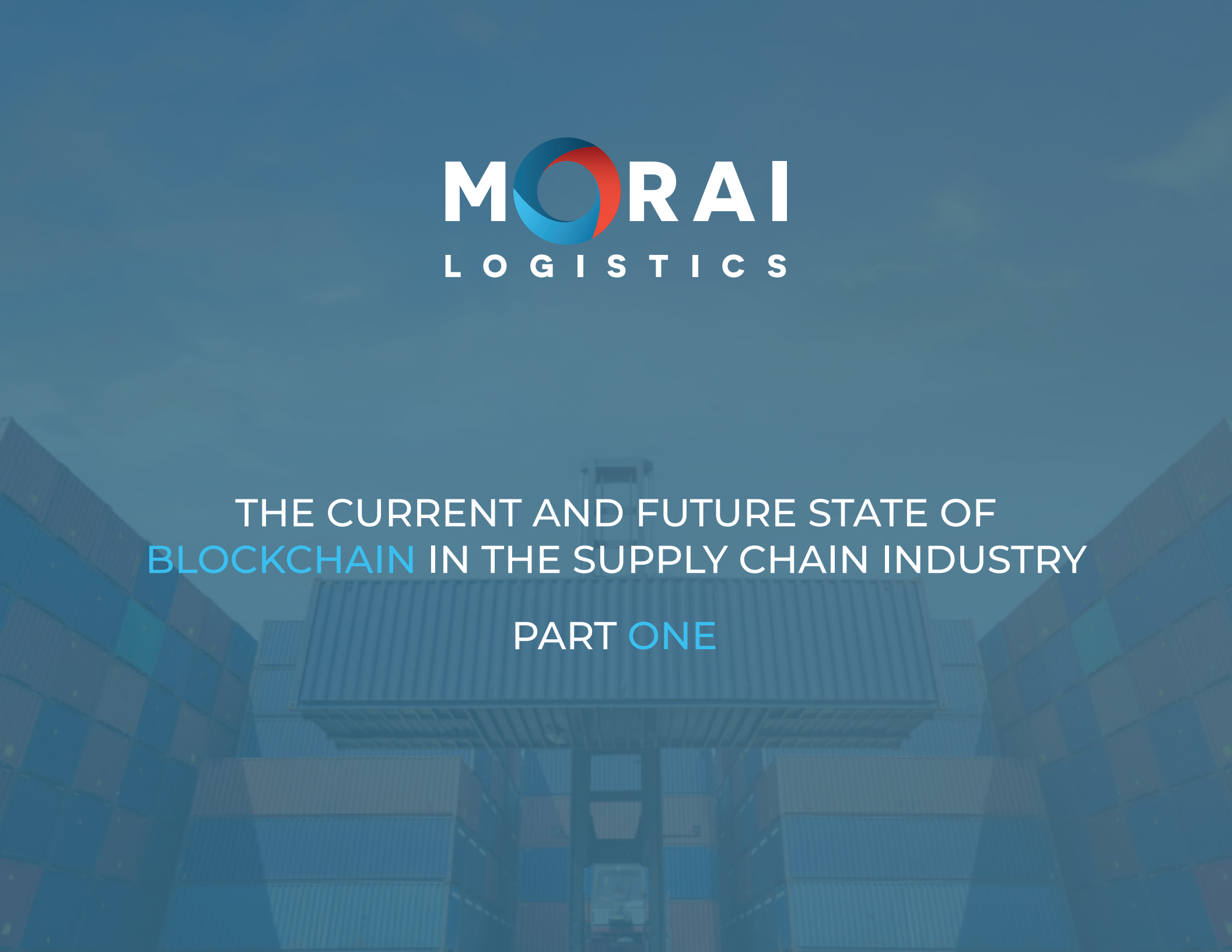

MORAI
LOGISTICS

THE CURRENT AND FUTURE STATE OF BLOCKCHAIN IN THE SUPPLY CHAIN INDUSTRY

PART ONE

WE LOVE TO PUT ORDER IN YOUR CHAOS.

Morai Logistics Inc. is a 3rd party logistics provider with an operating agency agreement representing Mode Transportation. We are a powerhouse logistics team based in the Greater Toronto Area and do **business throughout North America, including Mexico. Our team is dedicated to our terrific clients and** we strive to take the chaos out of your supply chain. We are always on the lookout to do exceptional work with remarkable people and companies!

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What is Blockchain Technology?

Blockchain technology is a kind of database where transactions are recorded. Or, as Don and Alex Tapscott put in their book Blockchain Revolution (2016):
"The blockchain is an incorruptible digital ledger of economic transactions that can be programmed to record not just financial transactions but virtually everything of value."

What makes blockchain unique is that each piece of data (each block) cannot be copied or edited and has no central authority governing it. As a result, it is democratizing the data being recorded. Moreover, since the data cannot be tampered with, blockchains are unique in their transparency when compared to regular databases.

THE THREE PILLARS

ANOTHER THING WORTH KEEPING IN MIND WHEN UNDERSTANDING BLOCKCHAIN'S SELLING POINT IS THAT IT'S INEXPENSIVE. THERE IS NO FEE PER TRANSACTION, THE ONLY COSTS THAT COME FROM BLOCKCHAIN ARE IMPLEMENTATION AND THE MAINTENANCE OF THE INFRASTRUCTURE. IT'S DUE TO ITS RELATIVELY COST-EFFECTIVE NATURE, SECURITY, AS WELL AS ITS AFOREMENTIONED TRANSPARENCY THAT IT HAS BECOME SO ALLURING TO SO MANY INDUSTRIES.

TO MAKE BLOCKCHAIN TECHNOLOGIES UNIQUE APPEAL EVEN MORE STRAIGHTFORWARD, IT'S WORTH REMEMBERING ITS THREE PILLARS—THE FOUNDATION UPON WHICH IT IS BUILT.

DECENTRALIZATION* - *NO CENTRAL AUTHORITY.
TRANSPARENCY - THE DATA CAN BE FOLLOWED BY THOSE IN THE BLOCKCHAIN.
IMMUTABILITY - THE DATA CANNOT BE ALTERED.

HOW DOES IT WORK?

1. In order to actualize a transaction—this can be any number of actions but is generally a piece of data being transferred—it needs a digital signature that verifies it and peers to validate it.

2. A digital signature is enabled through a private key and a wallet.

3. Both a private key and a wallet are a unique string of numbers and letters.

4. The private key is what is used for the digital signature; it's a unique set of numbers and letters that should be kept secret.

5. A wallet is the address that will be displayed on each block in the blockchain, as transactions take place.

6. Once the transaction has been digitally signed off on and confirmed by its peers, a block is formed.

7. This is a single block in a blockchain.

BLOCKCHAIN IN PRACTICE

With this information in mind, we can look at an example of this process at play. At each point along a supply chain, where the product is moving from one player in the chain to the next, a transaction is initiated by the player who is passing the product on.

This player signs off on the data that's being passed on (a record of the product changing hands) and, in turn, everyone else in the supply chain validates this transaction if it's legitimate. Hence, a block is formed with each link in the supply chain and ratified accordingly.

WHY DOES IT MATTER TO THE SUPPLY CHAIN INDUSTRY?

Given the example in the previous section, it's easy to see how applicable blockchain technology is to supply chains. They are, given the very nature of modern day supply chains, exposed to a large number of vulnerabilities. As a consequence, as the supply chain industry looks to address these challenges, it is becoming increasingly interested and invested in blockchain, as it has the potential to overcome some of these shortcomings.

Supply chains are delicate operations. If there's a breakdown in communication or confirmation about the integrity of the product, the whole chain can potentially be tarnished. This is exacerbated by the fact that nowadays supply chains are often longer and more complex than ever.

With globalization comes larger distances for the products to travel, language barriers to deal with, regional circumstances to anticipate for, and much more. In turn, as customers are aware of this, they demand that supply chains maintain their ethical and qualitative integrity. Blockchain, at least in part, can mitigate for some of these difficulties.

When the very nature of blockchain goes hand in hand with the need for continual confirmation of the state of the product by everyone in the supply chain (and the customers), the byproduct is much greater oversight. All the possible sources of instability that threaten a supply chain are being watched for more closely, can be adapted to sooner and are harder to obfuscate due to the transparency and collective control of the data.

On top of that, as blockchain also goes hand in glove with other innovations in supply chain management, like automation and AI, everything that blockchain helps overcome can be further developed and made more robust. This will lead to the minimization of even additional concerns such as human error in data collection or inventory management.

BLOCKCHAIN'S IMPACT

Jack Shaw highlights the incredible impact blockchain can have on the industry in APICS Magazine:

"Networks will become much more flexible, dynamic, and fungible. In the blockchain-enabled, self-configuring business ecosystems of the future, intelligent technologies will dynamically source new suppliers, distributors, and even potential customers. And these tools won't have to limit themselves to dealing with only the few partners who have been manually and laboriously set up in their systems."

SOURCES

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