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COULD BLOCKCHAIN REVOLUTIONIZE PARCEL SHIPPING?



Could blockchain revolutionize parcel shipping? Although more commonly associated with cryptocurrencies like Bitcoin, in the last 18 months or so, blockchain's potential for trade and transportation has been much discussed. In this white paper we examine how global companies like Precision Software and FedEx might leverage blockchain in the future.

WHY BLOCKCHAIN?

Blockchain provides a secure way to record and track transactions. This is because it is a distributed digital ledger. Although multiple people can be given access to the data – or parts of it – they cannot change or delete information.

Blockchain works with keys and hashes. A key allows you access to certain parts of the contract, while a hash algorithm turns any amount of data into a fixed-length hash. Hashes are created for a particular document or contract. If you change the document in any way, it will not produce the exact same hash. As a result, a blockchain ledger cannot be hacked or falsified and it creates a secure audit trail.

“BiTA helps support our mission to continuously improve and transform systems that automate the efficient movement of goods and simplify global cross-border trade.”

*Robert Clesi
Precision Software,
Member of Blockchain
in Transport Alliance*



Since blockchain creates an unalterable record, it has several potential uses when people or companies move goods around the world, or across town. This is why a number of organizations and agencies have, or are currently, conducting blockchain research. Some of the larger use cases include a recently concluded joint project by Maersk and IBM, blockchain field testing by the Municipality of Rotterdam and the Port of Rotterdam Authority, and a trial announced this August by US Customs and Border Protection.

Blockchain is still a nascent technology in the global transportation space. To this end, Precision Software and FedEx have both joined the Blockchain in Transport Alliance. BiTA was formed in August 2017, and brings together industry leaders to look at the use cases, examine areas where blockchain could improve efficiencies and create industry standards for blockchain use.

BLOCKCHAIN AND PARCEL SHIPPING

Imagine you are at home, browsing potential gifts for a mother-to-be on the internet. You find a beautiful hamper of luxury skin care products from a highly regarded beauty company. You click to purchase.

Let's say you are based in Atlanta in the USA, and the skin care manufacturer is in Seoul, South Korea. Think of all the various actions required to fulfill your purchase. The order is received by the manufacturer, which is then picked, packed and made ready for shipping. FedEx collects the package, and transports it first by ground and then by air to the United States. Once it gets to Atlanta, it is transported by ground again — that is, the last mile delivery to you.

A blockchain ledger could record and store all of this information — the price you paid, the date the manufacturer should ship your purchase, the actual shipment date, the expected date of arrival, the final time and date of arrival, and a variety of other data points.

Currently technology can, of course, track your package and store transaction data. The difference is that with blockchain every player in this scenario would have access to the same digital records. That's you, the manufacturer, the FedEx ground and air services, the delivery driver and so forth. Not everyone needs, or will be given, all the data in the blockchain — only the parts they need — but the blockchain ledger acts as a single source of truth for all data pertaining to this transaction.

A blockchain ledger can record and store all information pertaining to a transaction, and acts as a single source of truth for customers, sellers, customs officials, delivery services and so forth.

FRAUD PREVENTION

Millions of goods cross the globe every single day, from small parcel shipments to massive containers of ocean cargo. There are many points in a product's journey where fraud or theft could occur.

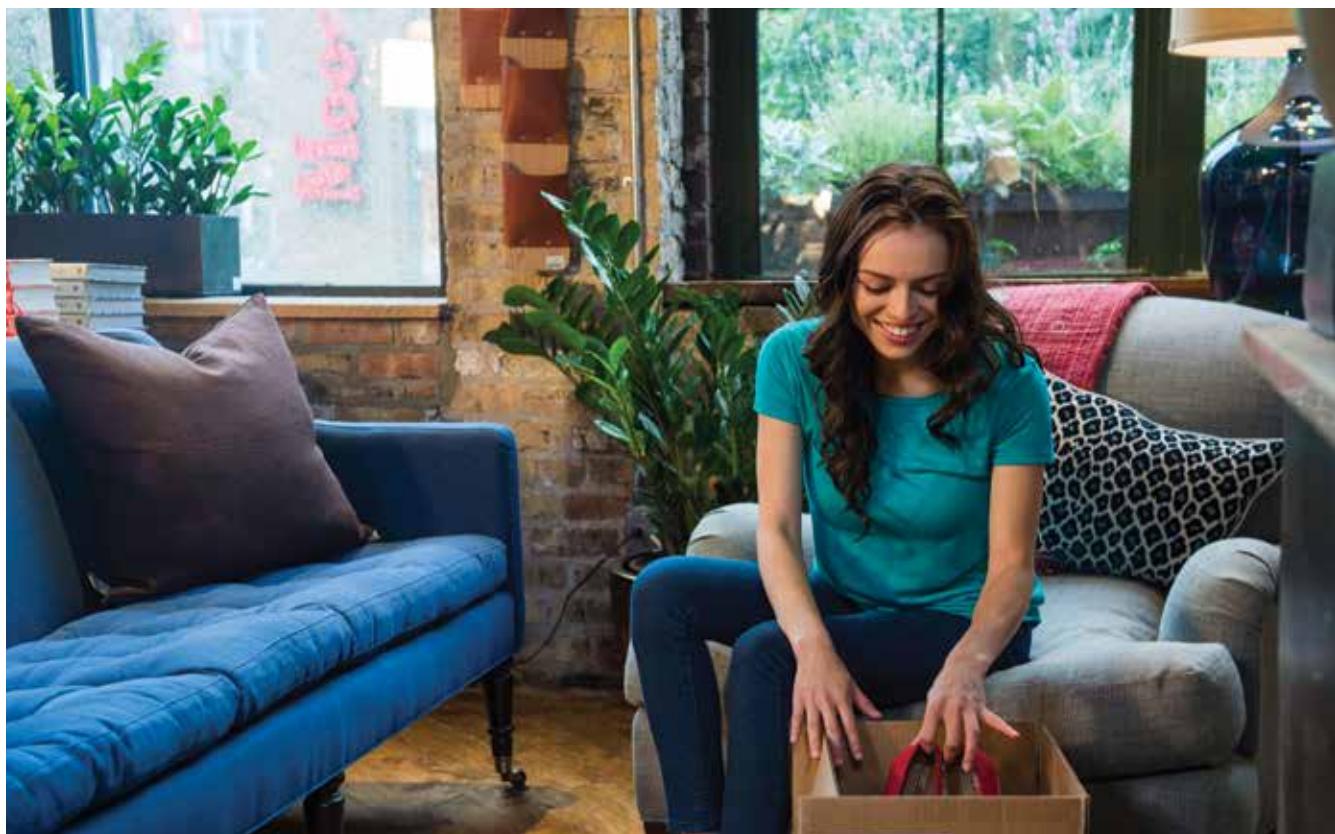
Think about a very simple transaction, like the one outlined above — your skin care purchase. Let's say a member of staff at the manufacturer's facility bypasses the company's shipping procedures and calls a new company to collect all of that day's orders.

It is not unknown for criminals to pose as carriers or truck drivers, post false documents to make pick-ups. Using blockchain this is impossible. Here's why — the person collecting the parcels would have to present the correct hash to the manufacturer. Without confirming that the driver has the correct hash, the manufacturer would not release the goods.

SMART CONTRACTS

Another area where blockchain has potential to disrupt fraud is with smart contracts. When you buy goods online from a global marketplace or a well-known retailer, you know you will receive your purchase. In the unlikely event that something does go wrong, the seller will replace the purchase or refund you.

Continuing the case of our fictional skin care company: your purchase was stolen from their facility, but since they are a reputable company, they swallow the cost of the loss and ship a second hamper to you. You don't worry about shopping online when you know you can trust the seller.



When you purchase from an unknown seller, you don't necessarily have the same certainty. If they are in another part of the world, there is not a lot you can do if your goods never arrive. But what if trust could be entirely taken out of the equation? With blockchain, it can be.

Blockchain allows for the creation of smart contracts. A smart contract records and verifies all aspects of a transaction. When the transaction has been successfully completed, payment is executed. With a smart contract, when you make an online purchase, your funds are not transferred to the seller. Instead, they are held in escrow. The seller only receives payment once your shipment arrives and proof-of-delivery is captured.

Of course with a truly unknown seller, such as person instead of a company, it might be a good idea to open the box first!

ABOUT PRECISION SOFTWARE

Precision Software, a division of QAD Inc., provides industry-leading global trade management, transportation execution and multi carrier shipping software solutions from a single, integrated platform. Preeminent industry leaders in every region of the world rely on Precision's global support centers to leverage thousands of carriers and manage millions of shipping transactions every day. An ISO-certified company, Precision Software assists companies to minimize shipping costs, optimize first mile and last mile deliveries, automate free trade agreement compliance, avoid customs delays and mitigate the risks associated with dynamic trading environments to maximize their competitive advantage. Precision Software's customers span multiple industries including banking and finance, life sciences, high technology, retail, industrial, automotive, higher education and public sector as well as logistics providers.



BLOCKCHAIN IN TRANSPORT ALLIANCE

BiTA was formed by experienced technology, transportation and supply chain executives to create a forum for the development of blockchain standards and education for the freight industry. BiTA's goal is to bring together leading companies in the freight technology industries that have a vested interest in the development of blockchain technology. For more information, please visit <https://bita.studio>.



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