ADDLESHAW GODDARD

BLOCKCHAIN IN THE RETAIL AND CONSUMER SECTOR

More than just a cryptocurrency

Blockchain technology, or distributed ledger technology, is just a way of using the modern sciences of encryption to enable entities to share a common infrastructure for database retention.

BLYTHE MASTERS
CEO OF DIGITAL ASSET HOLDINGS, CHAIRWOMAN OF THE HYPERLEDGER PROJECT (AND EX JP MORGAN CHASE EXECUTIVE)

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It is almost impossible to read the news online at the moment without seeing some form of pop-up advert calling on you to invest in bitcoin and make your millions. This is as good an indicator as any of the hype that has grown over the last few years in relation to cryptocurrencies.

You don't need us to tell you that you would be wise to avoid all of these "get rich quick" schemes. However, as the saying goes, "there is no smoke without fire", and it is true that the blockchain technology (a.k.a. "distributed ledger technology") that underpins each cryptocurrency does have the potential to disrupt a significant number of industries. Yet that disruption will not be solely due to cryptocurrencies. Distributed ledger technology is about much more than just a digital token that is exchanged between two parties, and its ramifications for the Retail and Consumer Sector could be huge.

WHAT IS IT?

In its purest form, a “blockchain” is a decentralised, distributed ledger that offers a community of independent users a means to securely record and verify information and transactions without the need for a central entity that administers and controls the process.

The cryptographic methods used to process and verify transactions, and the fact that this is done on a transparent and decentralised basis, are the reasons why these transactions are perceived to be secure. The security associated with the transaction is the reason we ascribe any value to a crypto-token (such as a Bitcoin or Ether) that is being transferred.

Blockchain Characteristics

Transparent

Every user in the community has a copy of the ledger and all information and transactions are open and available for all to see. Information is easier to audit and users build trust in the process.

Immutable

Once information or a transaction is added to the blockchain, it is virtually impossible[1] to reverse the transaction or remove the information.

Distributed

At the very core of the technology is the fact that the ledger operates and runs on multiple[2] nodes. The data in the ledger is replicated across all nodes in the network. No single organisation has control over the network therefore facilitating secure peer-to-peer transactions and interaction without the need of intermediary organisations.

Secure

Digital signatures and cryptography are used to ensure the security of each transaction and because of the distributed nature of the ledger, there is no single point of failure.

1 In fact no blockchain has perfect immutability. Much depends on the consensus mechanism used and the rules that underpin the operation of the relevant blockchain.

2 At the date of writing: the Bitcoin blockchain had an estimated 7,000 nodes; the Ethereum blockchain had an estimated 25,000 nodes.

WHY IS IT RELEVANT FOR MY BUSINESS?

In addition to this technology being a means to create and trade cryptocurrency, the technology lends itself to transactions and multi-step processes where there is a requirement to record the transfer of assets or the steps in the process and allow everyone involved to see this on an open and transparent basis.

This is particularly powerful when combined with smart contracts to execute actions (which may, or may not, be contractual obligations) on an automated basis upon the occurrence of certain triggers or events.

What is a Smart Contract?

A “Smart Contract” is not a contract in the legal sense of that word. A smart contract is a piece of code deployed in a network such as Ethereum that performs an action once certain criteria are met. In its simplest form, the code operates on the basis of the following logic - “if this [event happens], then that [action is carried out]”. Certain blockchain networks, such as Ethereum (using its programming language “Solidity”) and Hyperledger, allow more complex programming to be deployed and executed. Once the action envisaged by the code is complete, it is added to the blockchain as a permanent record. In the Ethereum network each transaction that interacts with a smart contract (and causes the code in the smart contract to be run) has a “gas price” that needs to be paid in ether, the cryptocurrency for the Ethereum network.

In a supply chain scenario, a smart contract can be deployed to enable automated payment (in cryptocurrency) to different participants in the supply chain in the event of a product arriving at different locations on its journey to the end buyer.

As a result, this technology has the power to revolutionise certain processes and ways of working within the Retail and Consumer sector. Initial benefits are likely to come in the form of converting analogue, labour intensive tasks involving several different interested parties into digitally automated processes.

In the future, when combined with AI solutions and IoT (Internet of Things i.e. machine to machine communication), this has the potential to become a new way of conducting business.

EXISTING R&C USE CASES

Supply chain provenance: *Product passports*.

Provenance is a tech start up based in London which has developed an Ethereum-based blockchain solution which enables every physical product to come with a digital ‘passport’ that proves authenticity (is this product what it claims to be?) and origin (where does this product come from?), creating an auditable record of the journey behind all physical products. The solution tracks and traces goods as they move through the supply chain via a computer or mobile app. The solution records product attributes, chain of custody and GPS location stamps creating an asset digital identity. Each supplier’s compliance is cross-checked against various ethical audit databases (including integration with the systems of inspection agencies) to confirm provenance. Certification data is recorded and verified on the blockchain, making forgery and tampering impossible.

Corporate buyers have a means of ensuring compliance with their statutory obligations (including the Modern Slavery Act and European Directive 2014/95/EU on disclosure of non-financial and diversity information) and their corporate social responsibility obligations as well as a means of ensuring that they are not purchasing counterfeit goods.

Supply chain provenance data leading to favourable finance rates: *Halotrade*.

Halotrade is a member of the 2018 cohort of AG’s fintech incubator “AG Elevate”. In 2018 it announced its involvement in a collaboration project with Provenance, Sainsbury’s, Barclays, Unilever, Standard Chartered and BNP Parabis. Halotrade’s solution builds on Provenance’s work using blockchain technology in relation to supply chains and integrates with the systems of supply chain finance providers to transmit the verified product passport to the finance provider. The system holds smart contracts and code-enabled invoices that promptly release payment of working capital finance at favourable rates of interest rather than payment for the goods themselves to the supplier once pre-determined product passport criteria are satisfied.

The supplier has access to working capital finance at considerably lower rates than would ordinarily be available at their location, thereby providing a financial incentive to the supplier to comply with ethical production practices.

Anti-Counterfeit Solutions - Blockverify and Everledger

There are various blockchain based anti-counterfeit solutions which can be used to collect an asset's defining characteristics, history, and ownership to create a permanent record on the blockchain. This digital incarnation, or thumbprint, is used by various stakeholders across a supply chain pipeline to prove provenance and verify authenticity. This can be used for any asset of value, including pharmaceuticals, luxury goods, diamonds and electronic equipment.

Payment solutions - Accepting cryptocurrency as payment for goods and services.

Blockchain's origins as a means of creating and transferring payment tokens will always remain a core benefit and use of this technology. There are an increasing number of examples in the market now where retailers are starting to accept cryptocurrency as a form of payment for goods and services. Major cryptocurrency exchange Coinbase has launched a feature that lets its European customers buy virtual gift cards with cryptocurrency (bitcoin and ethereum linked cryptocurrencies). By partnering with a London-based gift card start-up called WeGift, Coinbase now offers gift cards that can be spent at over 120 retailers, including Ted Baker, Uber, Google Play, Nike, Ticketmaster and Clarks.

HOW CAN WE HELP?

Blockchain technology may be relevant to your business in a number of ways. However if you would like to discuss the implications of any particular application of this technology, then please give us a call.

We list a few examples below:

- Drafting and negotiating Proof of Concept Agreements for proposed new applications
- Review of your existing services or technology agreements for contract mechanisms that can be used to promote the introduction of improved or updated solutions (including those based on blockchain), so that you get the benefit of savings or improved services
- Drafting and negotiating agreements for the provision of blockchain based solutions. Many of these are coming to market and provide and range of benefits
- Advice in relation to minority investment in, or acquisition of, blockchain solution suppliers - a typical scenario is that you, as the customer, like the look of the solution from an emerging provider, but are concerned about their financial strength. An investment may be a cost-effective way of getting that solution, stabilising the supplier, providing a reference site for their solution, and possible financial upside on your investment
- Regulatory advisory on issues which may be raised by the use of blockchain solutions - consumer protection and e-commerce advice; data protection and IT security advice.

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NODE 01
NODE 04
NODE 05
NODE 03
BLOCK 01
BLOCK 01
NODE 01
NODE 02

A smart contract is a mechanism involving digital assets and two or more parties, where some or all of the parties put assets in, and assets are automatically redistributed among those parties according to a formula based on certain data that is not known at the time the contract is initiated.

VITALIK BUTERIN (FOUNDER OF ETHEREUM)

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* a formal alliance with Hashidate Law Office

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