

White Paper

Building the blocks around the smartest cryptocurrency on the market, by Ben Davis, Account Manager, Sales

We're talking Blockchain – but it began with Bitcoin.

So what is Bitcoin?

Bitcoin is a cryptocurrency and a digital payment system. Invented by an unknown programmer (or a group of programmers), it was released as open-source software in 2009. There is a market cap with Bitcoin. The value of an individual Bitcoin has increased substantially during this time, every year more and more merchants and vendors accept bitcoin as payments for goods and services, and millions more unique users are using a cryptocurrency (digital) wallet.

Why is there a worry about Bitcoin?

There are many concerns related to Bitcoin, price volatility, doubts around legal status, tax and (lack of any) regulation, Bitcoin has been notorious in criminal activity, and is well renowned for the role it has in cyber-attacks like Ransomware. But for believers, Bitcoin has huge upsides, de-centralised thus outside the control of a central authority, privacy, deflationary, low cost to transfer funds across borders, but most it is an attractive "store of value".

Why is Bitcoin important?

Bitcoin is important because it requires a blockchain. A blockchain is an undeniably ingenious invention, but since Bitcoin, blockchain has evolved into something greater. And the main question every person is asking is - what is a blockchain?

So what is a blockchain?

The simplest explanation "*Blockchain is to Bitcoin, what the internet is to email. A big electronic system, on top of which you can build applications. Currency is just one.*" **Sally Davies**, FT Technology Reporter.

How does blockchain work?

A blockchain is a distributed database that is used to maintain a continuously growing list of records, called 'blocks'. Each block contains a *timestamp* and a *link* to a previous block. A blockchain is typically managed by a peer-to-peer network collectively adhering to a protocol for validating new blocks. By design, blockchains are inherently resistant to modification of the data. Once recorded, the data in any given block cannot be altered retrospectively without the alteration of all subsequent blocks and a collusion of the network majority. Functionally, a Blockchain can serve as "*an open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way*".

"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."
Don & Alex Tapscott, authors Blockchain Revolution (2016)

Blockchains are secure by design and are an example of a distributed computing system with high Byzantine fault tolerance. Decentralised consensus has therefore been achieved with a Blockchain. This makes Blockchains potentially suitable for the recording of events, medical records and other records management activities, such as Identity Management, transaction processing and documenting provenance.

The entire financial, legal, and record-keeping industries are being disrupted using this decentralised, secure, and inexpensive method. It has therefore caught the eye of the Bank of England plus other large organisations including Microsoft, IBM and Cisco have consequently started to take note of it:

- Microsoft announced participation as a launch partner with the **Enterprise Ethereum Alliance**, the first blockchain supported in Azure and it is evolving to address the needs of enterprises globally. The Enterprise Ethereum Alliance connects Fortune 500 enterprises, startups, academics, and technology vendors with Ethereum subject matter experts. [News link](#)
- IBM provides Blockchain solutions and services leveraging Hyperledger technologies, including **Hyperledger Fabric** and **Hyperledger Composer**. Hyperledger is an open source collaborative effort to advance cross-industry blockchain technologies and is hosted by The Linux Foundation. [News link](#)
- The Bank of England is testing Ripple's **Interledger Protocol for Cross-Border Payments** [News link](#)

So interest in extending 'Blockchain's' reach commercially to the general marketplace is serious.

The Blockchain gives internet users the ability to create value and authenticates digital information. What new business applications will result? Here are some thoughts*:

- Smart contracts - distributed ledgers enable the coding of simple contracts that will execute when specified conditions are met.
- The sharing economy - An early example, OpenBazaar. OpenBazaar is a different way to do online commerce. It's a peer to peer application that doesn't require middlemen, which means no fees & no restrictions.
- Crowdfunding - Crowdfunding initiatives like Kickstarter and Gofundme are doing the advance work for the emerging peer-to-peer economy.
- Governance - By making the results fully transparent and publicly accessible, distributed database technology could bring full transparency to elections or any other kind of poll taking.

- Supply chain auditing - The UK-based Provenance offers supply chain auditing for a range of consumer goods. Making use of the Ethereum blockchain, a Provenance pilot project ensures that fish sold in Sushi restaurants in Japan has been sustainably harvested by its suppliers in Indonesia.
- File storage - Decentralizing file storage on the internet brings clear benefits. Distributing data throughout the network protects files from getting hacked or lost.
- Protection of intellectual property - Mycelia uses the blockchain to create a peer-to-peer music distribution system.
- Internet of Things (IoT) - Cisco, a release from the group said, is exploring how it could register device identities using the API, while Bosch is said to have completed a trial centred on linking odometer readings to a blockchain system.
- Neighbourhood Microgrids - Blockchain technology enables the buying and selling of the renewable energy generated by neighborhood microgrids. When solar panels make excess energy, Ethereum-based smart contracts automatically redistribute it.
- Identity management - here is a definite need for better identity management on the web. Distributed ledgers offer enhanced methods for proving who you are, along with the possibility to digitize personal documents.
- AML and KYC - Anti-money laundering (AML) and know your customer (KYC) practices have a strong potential for being adapted to the blockchain.
- Land title registration - As Publicly-accessible ledgers, blockchains can make all kinds of record-keeping more efficient. Property titles are a case in point. They tend to be susceptible to fraud, as well as costly and labour intensive to administer.
- Stock trading - The potential for added efficiency in share settlement makes a strong use case for blockchains in stock trading.

*[Source](#)

In summary, the opportunities are infinite.

People need to understand that "blockchain" is NOT the same thing as "Bitcoin".

Bitcoin was the first blockchain system designed, but there have been a number of others since then which are very different, designed by different people, often for different purposes. These people are in the business of designing things for use by corporations to operate their businesses to drive a competitive edge. This is no different to what Amicus ITS has been doing for 30 years, problem solving and designing solutions that deliver business value as we look constantly to the horizon at future technologies.

Please feel free to share this White Paper on cryptocurrency. If you have any interest in this article, the author can be contacted on T: + 44 02380 429429.