**What is blockchain?**

Blockchain is a cryptographic technology; it began in 2008 when Satoshi Nakamoto released the whitepaper for Bitcoin. The whitepaper discussed blocks, chains and how they are connected, which led to the invention of the word that we know today: blockchain.

Blockchain revolves around a decentralised peer-to-peer network of interconnected nodes which communicate with each other. Typically, each copy of the ledger is kept by each peer (or node) on the network, as is the case with Bitcoin. There are some blockchains today which do things a bit differently. (Blockchain Explained - Intro - Beginners Guide to Blockchain, 2019)

With the Bitcoin network, these nodes compete to solve a cryptographic hash which grants them the right to combine recent transactions into the next block and add it to the chain, rewarding them with a quantity of Bitcoin as well as the transaction fees.

Each block that is added to the network contains the previous block's cryptographic hash which is what chains all the blocks together. It is impossible to tamper with the data, as you would need to alter every single block, going all the way back to the first – the Genesis block.

Bitcoin is used for making payments, and is a store of value like gold or fiat currency; however, unlike gold, it has no physical value, and unlike fiat, it is not backed by the Government. Consequently, the asset is known for its volatility.

After Bitcoin's adoption, new cryptocurrencies entered the market, such as Ethereum which is a programmable blockchain that supports both DApps and Smart Contracts. These new coins were dubbed Altcoins, short for "Alternative Coins".

Another new type of coin emerged which was called a token. Typically, tokens operate on other blockchains networks such as Ethereum; however, many companies create their own blockchain for their tokens. Some tokens start out on the Ethereum network (known as ERC20 tokens) and later migrate onto their own blockchain after it has been built.

There are a number of different types of cryptocurrencies:

* **Privacy coins** such as Monero focus on making payments in a way which cannot be tracked back to the user.
* **Gambling tokens** which are used by online crypto casinos to play games on the blockchain.
* **Voting coins** which enable users to vote digitally in a reliable manner.
* **Energy coins** which allow users to buy and sell electricity peer-to-peer.
* **Supply chain coins** which track information about a product in the supply chain.
* **Stable coins** such as Tether are pegged to fiat to reduce volatility.
* **Exchanges tokens** are commonly offered by exchanges for use on their platform, which provide some perks such as reduced trading fees.
* **Ad revenue tokens** such as BAT which pay you for watching ads and allow you to tip content creators on the web. (This token is integrated with the Brave browser.)
* **Decentralised Finance coins** enable users to take out loans and more.

(Types of cryptocurrencies: explaining the major types of cryptos, 2019)

China is working on a cryptocurrency of their own which is backed by gold. (Bloomberg - China's Digital Currency Could Challenge Bitcoin and Even the Dollar, 2020). This is a form of Government-endorsed digital currency which may be commonplace in the future.

It is rumoured that PayPal and Venmo may be planning on allowing the buying, selling and storing of cryptocurrencies. (Allison, 2020). If this turns out to be accurate, this will significantly increase adoption and simplify the process for people to get into the crypto space.

Another crypto called Lolli is partnering with a number of retailers online to provide cashback in the form of Bitcoin in order to increase adoption and get more people into the crypto space. (Crichton, 2018)

**Wallets**

Typically, a crypto wallet consists of two important addresses: a public address (akin to an account and BSB number in a bank), to which others send funds; and, a private key (or address) which is like a bank account's username and password. Whoever owns the private key has access to the wallet, and can transfer the funds inside. Transactions are irreversible.

Wallets can be created via legitimate websites, smartphone apps, or even hardware devices. The concern with digital wallets is you are potentially vulnerable to viruses, malware and hacking, although they are very convenient. Physical hardware wallets offer much more security in comparison but are not free.

**What does blockchain aim to do?**

Blockchain aims to remove all intermediaries: when we make payments online, we use our bank, or services such as PayPal; however, if these services are not available at that time, we are unable to do anything. The focus of blockchain is on decentralised processing and validation; essentially, removing that middleman from the equation, but still ensuring that both parties get what they agreed.

**What could blockchain do over the next few years?**

**Supply chain authentication**

There are a number of cryptocurrencies that are seeking to improve the supply chain process by integrating blockchain. The goal is to prove the authenticity of products and provide information about their journey along the supply chain. There is no limit to the information that can be stored about each product, but some basic information might include when the product was produced or manufactured, and when, where, and by whom was it packed.

According to Peili (2019) at CoinCodex the top 5 cryptocurrencies in this field include: WaltonChain, Modum, VeChain, Ambrosus, and Tael.

These projects are each competing in their own way to gain adoption in the supply chain industry and become the main player providing consumers with the confidence that the products they are buying are genuine.

This capability to check the authenticity of a product will be a game-changing moment in China due to the large number of counterfeit products which are sold each year – including food, beverages, footwear, apparel, popular devices and much more.

In 2013, the global trade for counterfeit products reached half a trillion dollars, with most of the counterfeit products being produced in China or Hong Kong. (Global trade in fake goods worth nearly half a trillion dollars a year - OECD & EUIPO - OECD, 2016)

Chase Shiel in Australia has recently announced that they will be using VeChain to confirm the authenticity of its Nike shoes. According to the article, knockoff shoes are a big issue for footwear makers. (Toshendra Sharma, 2020)

**Gambling**

The gambling industry is huge and there are blockchain projects which aim to solve existing concerns over cheating. FunFair is one such company; they have produced a token called FUN which is used in their online casino, allowing users on their platform to gamble on the blockchain. This removes the equation of cheating, as everything on the blockchain is immutable and auditable by anyone. (Goryunov, 2020)

**Voting**

There are a number of issues with the current system employed to handle voting: it's expensive and unreliable. By moving voting to the blockchain, all votes are auditable and there is no time wasted counting ballots. Two projects in this field include Horizon State and FollowMyVote.

**Payments**

The capability to pay someone across the world almost instantaneously without an intermediary is an incredible thought. There are a number of projects competing with each other to become the most popular blockchain for payments and to eventually outperform bank payments.

At this stage, transaction speeds are not fast enough (ranging from hours to minutes), making transactions are not simple enough, and integration needs to be improved. This is something being worked on and in the coming decade we may see blockchain become a major player in payments.

**Private payments**

Many blockchains such as Bitcoin are public, meaning anyone can view all the transactions made by a specific address, which is potentially undesirable. This means that there is a need for privacy coins which like allow payments to be made without leaving any trace behind. Monero is one example of this, which works by obfuscating the buyer's public address. (A low-level explanation of the mechanics of Monero vs Bitcoin in plain English, n.d.)

**How will this affect society?**

The overall impact of the blockchain in society will vary depending on the particular field in which it is employed.

**Supply chain**

There will be a huge reduction in purchased counterfeit products as consumers will be able to verify the authenticity of genuine goods; this will help consumers stay away from poor quality, faulty or even dangerous products.

In particular, with food and beverages, consumers will be able to see important information about the product such as if it is organic, when and where it was grown or produced, and much more.

**Payments**

As improvements to blockchain technology occur, people will be able to transact with one another across the globe quickly, securely, and without any reliance on an intermediary.

**Voting**

There are many benefits which blockchain projects can bring which include:

* Secure voting that is easily auditable by anyone
* Voting from any device in your own home
* Ability to change your vote
* Reduced costs for those holding a vote or election, making voting much more practical and economical

In 2017 the Australian Government conducted a postal survey to ask citizens whether or not gay marriage should be legalised. The survey cost 122 million dollars which is an enormous figure. (Australia: 'Yes' Vote to Marriage Equality | Human Rights Watch, 2017)

With a substantial reduction in cost, more votes can be held to allow a country's citizens to weigh in on important issues; whereas, right now, it is not fiscally viable to do so.

**How does this affect me?**

For me personally, as well as for a number of my friends and family, blockchain is a huge investment & trading opportunity. I'm always looking for new cryptocurrencies which could be the "next big thing". As mentioned above, the blockchain industry is booming and possessing the skills to program on the blockchain may open up a lot of job opportunities.

The supply chain improvements that blockchain aims to bring would benefit me as I would make sure to check the authenticity of every product I buy. This would be particularly useful for me when traveling in foreign countries where counterfeit goods are commonplace, as I can be assured that what I'm buying is genuine and safe.

I would appreciate the option of voting from home, online, in a secure manner. This is an improvement that I would like to see come to fruition sooner rather than later.

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