Blockchain and Cryptocurrencies

A blockchain is a secure technology that records data, mostly transactions on a peer-2-peer network, also described as a digital ledger. Broken down, a blockchain is a decentralized time-stamped series of unmodifiable records of data. Picture a chain of blocks, the blocks represent data, which are held together in a distinct order, which is the chain of blocks. Data that is stored on the blocks contain information about the transaction (date, time, amount), what parties are involved in the transaction (via a "digital signature"), and details that differentiate a single block from another block in the chain. The information is manifested into a particular code called a "hash". A hash is a very unique code, like a fingerprint.

What makes this technology so secure is that each new block that is added to the chain is stored linearly and chronologically, so it will always be added to the end of the chain and will not only contain its own hash but also contain the hash of the previous block. Which visually forms the chain and makes sure that the information in the block can not be tampered with because if you change one block then you would have to go through every other block after it in the chain, and change all of the hashes they contain as well. Which would take a lot of time, effort and computer power. So once a block is added to the chain it becomes very difficult to change and impossible to delete. Another factor that keeps the technology so secure is because it also implements tests for computers that want to join and add blocks to the chain. The tests require the users to "prove" themselves before they can participate in a blockchain network.

The technology was first created back in 1991 by two researchers by the names of Stuart Haber and Scott Stornetta, to carry out a system where document timestamps could not be altered. It wasn't used much until nearly 20 years later in 2009 when it was adapted by an unknown person or group known by the alias of "Satoshi Nakomoto" to create a crypto currency called Bitcoin. Blockchains serve as a distributed ledger and act as a financial transaction database for many Cryptocurrencies like Bitcoin.

A Cryptocurrency is a digital currency that is secured by cryptography, which makes it virtually impossible to counterfeit or double spend. Most cryptocurrencies are decentralized networks that use the blockchain technology and are generally not issued by any central authority, making them theoretically immune to government interference or manipulation. There are more than over 2,000 different types of digital cryptocurrencies available at the moment like Litecoin, Peercoin, Namecoin, Ethereum and notably the most well known being Bitcoin. As of November 2019, there are an estimated 18 million Bitcoins in circulation with a total market value of AU $209 billion dollars. In most cases new coins are are created when transactions are confirmed by a process known as mining. Bitcoin miners clump transactions together in blocks and add them to a public record which is better knows as the "blockchain." Nodes then maintain records of the blocks so they can be verified in the future. The incentive for miners is they get rewarded. Bitcoin miners are compensated for their efforts by receiving bitcoin whenever they have attributed to adding a new block of transactions to the blockchain. The amount released is called a "block reward". The reward is halved every 4 years or every 210,000 blocks and at the moment it is at 6.25. So for every blocked mined until 2024 the miners will receive 6.25 bitcoin and in 2024 it will go down to 3.125 bitcoin per block.

This technology has the potential to impact many sectors and industries. By creating a decentralized data base which is free for public viewing it has the potential to really disrupt the

financial sector. Many banks and financial service providers are analysing and researching with blockchain for the utilization of money transfers and record keeping, among other back-end functions. Blockchain applications change the old style of paper-intensive international trading processes into a decentralized ledger that provides everyone the ability to securely access the information from a single source. Blockchain also combats fraud. Financial institutions all over the world are discovering a rising number of total scams. Fraudsters are manipulating people to pay money to them. Blockchain combats this by facilitating the use of smart contracts to support storage of any type of digital information. Cryptocurrency also change the way people conduct financial transactions. Crypto banking will integrate itself into the financial industry due to its impressive uptake. It's a huge improvement to the traditional systems that have a centralized system where one entity facilitates and controls your money. Because cryptocurrencies are decentralized they offer services that will never be available in conventional banks and also guarantee more efficiency, transparency and security. By eliminating the middle man, cryptocurrencies cut out the need of having to deal with one organization that holds your money. Instead your money is held on the cloud with the blockchain technology. Cryptocurrency transactions are generally cheaper than the way we traditionally make a money transfer as well. Usually when you pay a vendor with our credit card we are hit with a processing fee of a couple percent, this is mostly because we are paying fees to more than one organization that deals with processing the transaction. Many businesses are across different industries are also decentralizing their processes with the bitcoin technology to save money on costs and acquire more profit.

The Blockchain and Cryptocurrency technologies together are a way to revolutionize the future of banking. If digital cryptocurrency ends up taking over the whole traditional centralized banking systems as we now know it, it will become normal for everyone on the planet to use in their daily life. No more will I be able to carry physical cash around and pay for items. Instead of having a wallet in my back pocket, I will have all my money stored on an e-wallet to pay for items. Cryptocurrency could become the standard currency for all around the world, abolishing exchange rate fees and other costs that come with changing up money as well. If we move to a cashless society I think it could become a scary thing, it takes away the process of buying something anonymously, everyone will be able to see how and where I spend my cash. No more will I be able to put money away in my wardrobe or under my bed to save up for a holiday, or even jump on gumtree and buy something second hand with cash. It will all be recorded. I think some people will tend to overspend as well, when I buy something using cash, I recognise the financial effect by physically taking the cash out of my wallet and giving it to someone. With electronic payments its easy to just click pay and not realise how much money I am actually spending. If the financial future of banking becomes cashless and ends up being one that relies on the blockchain and crytocurrency, I will embrace it but I find it hard to imagine a time when you wont be able to slip some cash into a family members birthday card, or little kids not receiving money from the tooth fairy when losing a tooth.

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