**What Does it do?**

What is blockchain and cryptocurrency technologies? Let’s start at the roots of cryptocurrencies to get a better understanding. Bitcoin (BTC), was the first and the leading online currency currently holding a 67.5% market share out of the thousands of cryptocurrencies that are out there. Bitcoin was first founded in 2008 by an anonymous person with the pseudo name Satoshi Nakamoto and later in 2009 the software was made publicly available. Now, how does Bitcoin work? As stated by the creator themselves in the abstract of their white paper, “Bitcoin: A Peer to Peer Electronic Cash System”, “A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution.” So, in layman terms, you are sending “X” dollars or I should say “X” Bitcoins from person 1 to person 2 over the internet without a middleman. So how does it work? In most cryptocurrencies cases, particularly Bitcoin, it utilises the blockchain technology. What is a blockchain? As defined by mediuim.com “A block in a blockchain is a collection of data. The data is added to the block in blockchain, by connecting it with other blocks in chronological others creating a chain of blocks linked together. The first block in the Blockchain is called Genesis Block”. The blockchain is also a distributed ledger, that is open to anyone in the network. In Bitcoin’s case the block chain is comprised of 3 different parts (shown in figure 1). The first part of the block is the data, which in Bitcoin’s case, it shows the sender, the receiver and the amount of coins. The second part is the hash. The hash identifies a block and all of it’s contents, making it unique much like a fingerprint. The third part of the block is the hash of the previous block. This makes the blockchain what it is, a chain of blocks which makes the network secure.

In terms of blockchain technology, particularly with Bitcoin, is the huge benefit without having a middleman to process the transaction. It has no transaction fees and allows the both the sender and the receiver to remain anonymous. The only fee’s that are charged is the mining fee, a reward for a miner completing work to process the transaction. This is known as proof of work (PoW) (also mentioned in Satoshi’s whitepaper) which is a part of the blockchain technology. After a transaction is completed, the blockchain records the transaction which is then recorded onto the blockchains public leger. As proof of work is completed, the blockchain network cannot be changed ensuring the security of the network and unable to be manipulated.

**The Future of blockchain Tech:**

In the following years, blockchain and cryptocurrencies technologies is going to become more abundant. One area that I think will be a huge focus on, is the use of smart contracts. Smart contracts as define by BlockGeeks.com, “A smart contract is a computer protocol intended to digitally facilitate, verify, or enforce the negotiation or performance of a contract. Smart contracts allow the performance of credible transactions without third parties.”. In layman terms, it essentiality facilities the use of a contract without the use of a middleman such as a lawyer, real estate agent or a bank to fulfil the terms of the contract. A huge benefit of this, much like Bitcoin, is lower costs for both parties of a contract and because it’s ran on the blockchain it has the same security features as any blockchain technology. An example of this of a real-world application could be used on intellectual property rights. If there is a photographer, an artist or even a software engineer, they could use a smart contract. In a photographers case, the photographer could upload a photo with a smart contracts with conditions such as; the nature of how the photo will be used, the price of the photo and if the photographer receives acknowledgements for their work. Once these conditions are met, the photo is released and monies or cryptocurrencies are transacted to the opposite parties.

**The likely impact**.

The likely impact of blockchain as a whole will probably for the best in the IT world. As stated above, the level of security and the convenience of a decentralised system (i.e. no middleman) would be almost enough to adapt the blockchain technology in every aspect of the IT industry. Already, the banking industry has already started utilising the blockchain technology for both domestic and international transfers. One technology firm named Ripple that offers a similar system to Bitcoin but much faster, has partnered with India’s federal bank for the use of cross-border transactions. The blockchain technology offered by Ripple is an open source system and one of its latest creations from the open source community is RippleNet. RippleNet is the foundation of the cross-border transactions based on the Blockchain technology. Traditionally, cross-border transaction is high cost and can take up to 5 business days to process. RippleNet offers a faster solution taking a maximum of 3 minutes to complete a transaction and costing only a fraction of traditional banking methods.

References

Aaron Wood. 2019. Major Private Indian Bank Partners With Ripple for Cross-Border Remittances. [ONLINE] Available at: <https://cointelegraph.com/news/major-private-indian-bank-partners-with-ripple-for-cross-border-remittances>. [Accessed 11 October 2019].

Bitcoin - Open source P2P money. 2019. Bitcoin - Open source P2P money. [ONLINE] Available at: <https://bitcoin.org>. [Accessed 11 October 2019].

Blockgeeks. 2019. What Are Smart Contracts? [Ultimate Beginner’s Guide to Smart Contracts]. [ONLINE] Available at: <https://blockgeeks.com/guides/smart-contracts/>. [Accessed 11 October 2019].

CoinMarketCap. 2019. Cryptocurrency Market Capitalizations | CoinMarketCap. [ONLINE] Available at: <https://coinmarketcap.com/>. [Accessed 11 October 2019].

Ibad Siddiqui. 2019. What The Hell Is Blockchain And How Does It Works? (Simplified). [ONLINE] Available at: <https://medium.com/coinmonks/what-the-hell-is-blockchain-and-how-does-it-works-simplified-b9372ecc26ef>. [Accessed 11 October 2019].

Ripple. 2019. RippleNet | Ripple's Global Payments Network. [ONLINE] Available at: <https://www.ripple.com/ripplenet/>. [Accessed 11 October 2019].

Image source, single block - <https://theblockchaintoday.com/how-does-the-blockchain-work/>

Bitcoin transaction - <http://bitcoindaily.org/bitcoin-guides/bitcoin-core-tutorial/>