

The Seven Myths of Blockchain

CIS - 425

Cohort A, Group 2

11/11/20

Introduction

Blockchain technology is a distributed and decentralized ledger system that can record transactions between two or more parties. It has become a well-known architecture in the cyber industry and a highly discussed idea amongst computer scientists, academia, and cyber professionals. So, what is this infamous blockchain? blockchain is a linked ledger using cryptographic hash to ensure security, as well as allow for transparency, decentralization, and immutability. This is the most attractive aspect of blockchain technology, and there has been an increase in conservative firms starting to participate in the blockchain ecosystem. (Hyperledger, 2019) The underlying principles of blockchain started with a well-known name “Satoshi Nakamoto” which is the alias of the anonymous developer behind the original blockchain database, Bitcoin.. The first blockchain was created by one or many “Satoshi Nakamoto’s” in 2008 and later implemented into Bitcoin, which has since been very successful and widely accepted.

A convenient aspect of blockchain is data remains stored across a network of computers, as opposed to being stored centrally. Each node on the network updates as new encrypted blocks (transactions) are added to reflect the universal ledger, this forms what Satoshi referred to as the “block chain.” (History of blockchain) Many companies have taken notice of this new technology, some popular food companies have begun to develop blockchain architecture specifically for their supply chain. Walmart and Nestle are among the notable big name corporations that are comfortable enough to experiment in this area, Walmart especially is known for being progressive with regards to up-to-date systems. blockchain has been advertised to be useful for several purposes, and it is likely that industries like medicine, retail, and banking will implement some type of open ledger technology themselves.

There will always be costs vs benefits when new technology evolves and begins to replace its predecessors. blockchain will certainly simplify many types of business transactions, many of which heavily involve human interaction, and will ultimately result in a loss of jobs. Although, just as blockchain will make menial tasks obsolete it will also create new jobs that will be based on managing and working with blockchain technology. Companies will need blockchain consultants, mining experts, and security professionals all of which will create jobs over time. Efficiency is a fitting term for blockchain, the speed of using the IoT combined with the security aspects removes any human error that may slow that process down.

Common Blockchain Myths

The most common myth surrounding blockchain is that it is the same thing as cryptocurrency. Though cryptocurrency may be more of a buzz word than blockchain, blockchain is the underlying technology that allows many cryptocurrencies to function. Cryptocurrency is one of the many applications of blockchain, and, in fact, not all cryptocurrencies use Blockchain ("Seven Myths and Misconceptions About Blockchain Debunked", 2019). A cryptocurrency called IOTA uses a directed acyclic graph, known as a tangle, to provide security ("13 Blockchain Myths everyone believes"). Blockchain is considered to be a general purpose technology; defined by MIT, a general purpose technology “can be applied across a wide spectrum of industries”, “has the capacity for continual improvement”, and “acts as a catalyst for innovation with complementary technologies” ("Seven Myths and Misconceptions About Blockchain Debunked", 2019).

The second myth of Blockchain is that it is anonymous and only used by criminals. Where some cryptocurrencies may hide transactions, many cryptocurrencies like bitcoin have distributed ledgers, where all transaction information is public. Though most identifying information has been excluded, the source and destination wallets are recorded in each transaction, making Blockchain easily traceable ("Council Post: 11 Common Myths About Blockchain And Cryptocurrency You Shouldn't Believe", 2018). The IRS and a company called Chainalysis have reportedly linked a quarter of all bitcoin wallets to their owners, and the IRS has been using this to track tax cheats ("13 Blockchain Myths everyone believes"). Additionally, the transparency of BlockChains like bitcoin make bitcoins easier to track than physical cash, proving useful in forensics for cracking down on illicit activity ("Seven Myths and Misconceptions About Blockchain Debunked", 2019). Whether or not transactions are visible completely depends on the implementation of Blockchain and whether it is private, public, or something in between ("Seven Myths and Misconceptions About Blockchain Debunked", 2019).

The third myth of Blockchain is that all BlockChains are the same, and this is far from the truth. Blockchain consists of different mechanisms including the ledger, peer-to-peer network, consensus protocols, and incentives, all of which can be customized to provide a unique

Blockchain implementation ("Seven Myths and Misconceptions About Blockchain Debunked", 2019). Some Blockchain implementations will be public, whereas others may be private, and different Blockchain implementations may use various different incentive protocols to reward miners.

The fourth myth of Blockchain is that Blockchains are immutable/unhackable. While Blockchain greatly reduces the threat of fraudulent information injection, it is not perfect ("7 Myths About Blockchain - Busted: CompTIA"). Additionally, some blockchains are designed to be mutable, whether by consensus or by someone with permissions ("Seven Myths and Misconceptions About Blockchain Debunked", 2019).

The fifth myth of Blockchain is that it requires a lot of experience to create. The Bitcoin protocol is open source, which allows for anyone to copy Bitcoin's protocol and change the code, otherwise known as forking ("13 Blockchain Myths everyone believes"). This provides a framework for other cryptocurrencies that would like to implement Bitcoin's protocols. Tools have also been made accessible that allow anyone to create their own cryptocurrency ("13 Blockchain Myths everyone believes"). Creating a Blockchain can be fairly simple; it can be implemented with something as simple as a Node JavaScript application ("How To Build A Simple Cryptocurrency Blockchain In Node.js", 2020).

The sixth myth of Blockchain is that Blockchains can be used for anything. Many industries are adopting Blockchain, such as banking, financial tech, pharmaceutical, tech, and many other industries. This does not mean that Blockchain is the right fit for every situation ("7 Myths About Blockchain - Busted: CompTIA"). Blockchain sacrifices performance for security, and depending on the Blockchain implementation, this is something that may not be necessary in a particular instance ("Council Post: 11 Common Myths About Blockchain And Cryptocurrency You Shouldn't Believe", 2018). As mentioned earlier, Blockchain doesn't entirely eliminate the risk of fraud - it just mitigates the risk ("13 Blockchain Myths everyone believes"). Blockchain is not perfect, and smaller, less established Blockchains may be more susceptible to fraudulent transaction injections.

The seventh myth of Blockchain is that it is just another database in the cloud. Blockchain is not a replacement for a traditional database, and it is not in the cloud. Blockchain is a peer-to-peer network of nodes that allows for the creation and reading of data and its advantages come into play when used as an exchange rather than just for storage ("Council Post: 11 Common Myths About Blockchain And Cryptocurrency You Shouldn't Believe", 2018). Adding the ability for the ledger to be mutable by editing entries would break the integrity of the chain and nullify one of the main advantages of Blockchain, that it is immutable by design and protects data integrity (Ramachandra, 2019).

Blockchain Capabilities

While the media and hype over Blockchain may have painted the picture that this technology is a disruptive innovation ready to drastically change the world, it's not. According to the Harvard Business Review, Blockchain technology can actually be classified as more of a foundational technology that could take decades to reach fruition. (Iansiti & Lakhani, 2019) Although there are many practical uses for Blockchain technology already, we have to take a look at the technology lifecycle to really get a full picture of where Blockchain is in its worldwide adoption as well as what Blockchain is capable of. New technology adoption can take a very long time, yet that still doesn't limit the speculations of what Blockchain is capable of. Developed in 2008, as a part of peer to peer version of electronic cash, Blockchain was fundamental in the creation of one of the most famous cryptocurrencies, Bitcoin. Bitcoin was the first introduction to what Blockchain is capable of. From its initial introduction, interest in Blockchain skyrocketed. With interest rising many business and people alike began speculating on the variety of ways Blockchain could be used throughout the world. Some of these uses include; money and data transfers, supply chain logistics, digital identification, digital voting, copyright and royalty projections, secure contracts and legal documents, and much, much more.

First, as mentioned before, Blockchain was introduced as a technology to secure and track digital currency transfers through a platform called Bitcoin. This first introduction gave the world its first view at the powerful technology of Blockchain. Through the use of Blockchain's distributed ledger, complicated encryption, and lack of a centralized authority it provides users' with the capability to complete monetary and data-oriented transfers without the need for a third

party. This technology is much faster, less costly, and more secure. While the use for Blockchain technology in currency transfers has been quite evident since its introduction, more and more capabilities of the technology have been introduced as the technology grows. For example, researchers from the Harvard Business Review claim that Blockchain could revolutionize stock exchange by processing and completing transactions within seconds while providing verification in a secure manner. By using Blockchain technology stock traders would be able to easily verify that each party has the funds to complete the transaction through the use of the ledger and also complete the trade securely by using Blockchains encryption. (Iansiti & Lakhani, 2019) Another example of a way Blockchain can be used in terms of monetary transfers is by using it to revolutionize customer loyalty programs. According to Deloitte.com, Blockchain could help fix common issues in company's customer loyalty programs. Blockchain could do this by creating, "an immutable and time-stamped distributed database entry of every single transaction ever made, making each transaction and its record easily traceable, but also rendering them irreversible, preventing double spending, fraud, abuse, and any other type of manipulation of the transactions." (Pawczuk, 2018) This not only saves the company time and money, but also helps the consumer by making the loyalty program much more efficient and accurate. These few examples are only some of the many ways that Blockchain can be used for monetary or data transfers.

Second, Blockchain has already seen some use in tracking and analyzing supply chains. Through the use of Blockchain's distributed ledger, companies can track each aspect of a supply chain and use information to find weaknesses in that chain. For example, Blockchain can be used to track produce from farm to a consumer's table. The way this is possible, is by accessing the distributed ledger. The user could then see records of transactions between every focal point of the supply chain. Each time the product is passed, whether it be from farm to delivery driver, or distribution center to a grocery store, a record (or block) is kept within the ledger of blockchain. In more detail, in a case study done by Hyperledger.org, they looked into how Walmart utilized blockchain to track shipments and identify weaknesses within their supply chain. (Hyperledger, 2019) The case explained that Walmart incorporated this technology after they noticed a high return volume on their delivery orders from customers complaining of "damaged goods." Through the utilization of Blockchain technology, Walmart was able to start tracking every

aspect of their supply chain and identify weak points within that chain that lead to the high return volume. The way they were able to track this was by accessing the records within Blockchain's ledger and identifying the status of the item being shipped after each transaction. As you can see, Blockchain technology can be extremely useful in analyzing supply chains.

Third, another interesting way Blockchain can be used is by using its technology to remove dependencies on third party intermediaries. By having a decentralized authority, trust is built through the distributed ledger and Blockchain's users. This allows for users to complete transactions between just two parties without the need for a middle man or a trusted, unbiased party because all transactions are backed up by a verifiable ledger. For example, in a paper published in *Computer & Internet Lawyer*, there was discussion of Blockchain technologies creating items like "smart contracts." In more detail, the paper said Blockchain smart contracts are, "computer programs that run on distributed ledger technology to execute the terms of a contract automatically under conditions and outcomes encoded into the program." (Suzuki, Taylor, & Marchant, 2018) In simple terms, they explained that through the use of the Blockchain ledger, there would be no need for a third party to draw up or approve contracts, as every transaction made through the ledger is verified. Again, Blockchain proves to be a very broad technology that has multiple applications throughout many industries in business.

Lastly, there are endless possibilities that Blockchain has been mentioned for use in. These possibilities all range from digital voting in U.S. elections to digital identification to secure data. These possibilities prove the vast application Blockchain technology can provide the world, yet it is still a fairly new technology with much to learn. While these applications are all possible through the use of Blockchain technology, it is going to take major societal and economic change to implement them. For example, the United States can't switch to Blockchain technology enhanced digital voting in the next four years and have it ready for the next presidential election. These processes take time and need to be tested to ensure they work and that the public will accept them as the new normal. Although on paper, secure and digital voting may seem like the answer to all the problems in elections, it is not as easily implemented with the touch of a button; it must be accepted as the new normal by society before it can be implemented. In conclusion, while there are many obstacles to overcome to making Blockchain

and worldwide used technology across all facets of life, it is a rapidly growing technology that has so much potential to make huge changes throughout the world.

The future of Blockchain Technology

Blockchain technology is a word or phrase that is almost instantly and exclusively tied to cryptocurrency when most people hear it. While it is a driving force behind cryptocurrency its capabilities stretch much farther than just that. As more people begin to understand this technology better we will see it becoming in industries all across the economy, from retail to improving supply chain and even as far as helping with documentation of immigration.

However despite this immense potential for blockchain to flourish and spread to new industries over the coming years there are a few factors holding it back that might slow down the process. One of the main and biggest issues that we are currently seeing is a lack of professionals who are working with and understanding blockchain.(The pros and cons of blockchain technology, 2020) Given blockchains relatively known appearance on the world stage there is a shortage of professionals who can actually help business implement and take advantage of everything blockchain has to offer. This shortage of developers forces businesses to either wait to start using blockchain or risk hiring a qualified candidate to try and accomplish the task at hand. Another negative aspect of not having enough supply of blockchain developers is that it becomes more likely that there are lurking bugs in the code that have not been found or fixed yet. As the industry is able to add more skilled developers not only will the use of the technology rapidly spread but it will become more robust and secure than it already is.

A shortcoming in supply of highly skilled talent is not the only roadblock that blockchain will have to overcome in order to become a more widely used technology. There is also the challenge of overcoming the often bad image of blockchain.(The pros and cons of blockchain technology, 2020) Bitcoin is one of the most recognizable examples of blockchain technology to most people and unfortunately can sometimes conjure up ideas of shady or illegal activity. Although blockchain is not primarily used for nefarious purposes some people have a preconceived notion of what it is. Just like many other groundbreaking inventions blockchain must break through the false narratives surrounding in order to continue to grow.

Despite these challenges that blockchain must overcome in the coming years there are many advantages as well as opportunities that could allow for blockchain to continue to be one of the hottest and fastest growing technologies. One of the main advantages that blockchain has to offer is its ability to transparently store immutable data from all transactions. The uses for this can stretch from ownership titles of a vehicle all the way to tracking shipments. Over recent years we have seen several large retail companies experiment with blockchain technology to help improve and streamline their supply chain processes. (19 Industries The Blockchain Will Disrupt ,2018)Arguably one of the far most reaching effects of this is the possible application to the diamond industry. Given the diamonds industry's sometimes questionable ethics on the source of diamonds and how they are acquired, blockchain would allow for a completely transparent trail of the diamond from the time it's mined to when it is finally bought by the consumer. Consumers and society in general have more than ever a desire for trust and transparency from large corporations and government, blockchain offers a secure way of providing both of these things to the public without compromising the integrity of the data.

Possibly the biggest impact blockchain could have on society of the next ten years is its role in elections. (19 Industries The Blockchain Will Disrupt, 2018)As we have seen this year there is a growing amount of distrust in America's election system primarily due to a lack of transparency and data integrity. Regardless of whether these fears many Americans have are true or not, the doubt in the system could lead to many issues. This is not a problem exclusive to the United States but is prevalent in any country that claims to hold free and fair elections. Through the use of blockchain technology we could improve not only voter registration and identification but also insure the integrity of the vote ensuring it wasn't changed at all. All while providing a completely transparent ledger for the public.

When people think about the future of blockchain, oftentimes one of the first things that enters their mind is the future of cryptocurrency. However the future role of cryptocurrency is still uncertain. Cryptocurrency faces a unique challenge when it comes to the widespread adoption of cryptocurrency.(Barone, 2020)

It is a very delicate balancing act that must be executed for the adoption of cryptocurrency to become mainstream. Currently many people do not understand cryptocurrency and see it as something too complex for them to understand, for widespread adoption to happen this has to change and people either need to become more comfortable with the technology and understand it better. However at the same time in order for cryptocurrency to even work or be useful it has to be complex enough that it can not be hacked or tinkered with by hackers. However there is one industry that could adopt cryptocurrency much quicker and easier than any other. This is the gaming industry, oftentimes the demographic for video game players is made up of younger people who tend to be more tech savvy. This gets rid of one of the bigger issues with cryptocurrency when it comes to the consumer not understanding the product. In addition video games have been using forms of online currency for players to purchase add ons in the game. Naturally cryptocurrency seems like the next logical step for gaming companies and could be coming a lot sooner than many people expect.

Blockchain has proven itself to be a robust system that elevates transparency , data integrity , security and efficiency . The future of blockchain remains to be somewhat a mystery since it is unknown how the industry will respond to the numerous roadblocks in the way of it becoming more widely used. That being said it has the ability to affect countless number of industries as well as government and the way that people do business. Blockchain will continue to disrupt new industries as people apply its technology to different facets of life and it continues to become better understood.

Conclusion

To conclude, there can be animosity around blockchain, and some may think that it is a new secret backend coding language. Blockchain is a useful tool that businesses can utilize to speed up their operations, secure transactions, and be transparent. I believe that we will see a lot of growth in this industry. We will see the medical field; the supply chain industry and certain tech companies dive deeply into this type of technology. Blockchain does not get enough credit for the security that it provides and the protection of the data that is being exchanged. Blockchain can also have a serious implementation for banking purposes specifically because it is a ledger. Every individual within an organization can see the public record of transactions, and in banking

where things can get questionable there while no longer being confusing on records. This can be a game-changer for these industries and could change the way we run our businesses. This technology is still very new, having only been implemented in the last two decades, and still will develop exponentially like most other forms of technology we see today. There has been a culture of openness in the cyber community, and that is why we are seeing incredible infrastructure like open-source code or blockchain. This philosophy that is held by so many has led innovation in this industry and will likely continue to lead to greater things.

Works Cited

About The Author Alfrick Opidi is an experienced web developer with a passion in exploring how emerging technologies can be utilized to create performant, & Author, A. T. (2020, February 21). How To Build A Simple Cryptocurrency Blockchain In Node.js. Retrieved November 11, 2020, from <https://www.smashingmagazine.com/2020/02/cryptocurrency-blockchain-node-js/>

Barone, A. (2020, August 28). The Future Of Cryptocurrency. Retrieved November 12, 2020, from <https://www.investopedia.com/articles/forex/091013/future-cryptocurrency.asp>

Editors, F. T. (2018, March 27). Council Post: 11 Common Myths About Blockchain And Cryptocurrency You Shouldn't Believe. Retrieved November 11, 2020, from <https://www.forbes.com/sites/forbestechcouncil/2018/03/27/11-common-myths-about-blockchain-and-cryptocurrency-you-shouldnt-believe/>

Efrima, A. (2019, June 13). Council Post: Five Predictions For The Future Of Blockchain And Cryptocurrency. Retrieved November 12, 2020, from <https://www.forbes.com/sites/forbestechcouncil/2019/06/13/five-predictions-for-the-future-of-blockchain-and-cryptocurrency/?sh=7387518365a9>

History of blockchain. (n.d.). Retrieved November 11, 2020, from <https://www.icaew.com/technical/technology/blockchain/blockchain-articles/what-is-blockchain/history>

Hyperledger. (2019, March 25). Walmart Case Study. Retrieved November 12, 2020, from <https://www.hyperledger.org/learn/publications/walmart-case-study>

Iansiti, M., & Lakhani, R. (2019, August 21). The Truth About Blockchain. Retrieved November 12, 2020, from <https://hbr.org/2017/01/the-truth-about-blockchain>

Pawczuk, L. (2018, April 04). Making blockchain real for customer loyalty programs: Deloitte US. Retrieved November 12, 2020, from <https://www2.deloitte.com/us/en/pages/financial-services/articles/making-blockchain-real-customer-loyalty-rewards-programs.html>

Ramachandra, D. (2019, October 31). Are Blockchains mutable? Retrieved November 11, 2020, from <https://medium.com/swlh/are-blockchains-mutable-be65dbcd9f3>

Reiff, N. (2020, August 28). Top Bitcoin Myths. Retrieved November 11, 2020, from <https://www.investopedia.com/tech/top-bitcoin-myths/>

Seven Myths and Misconceptions About Blockchain Debunked. (2019, August 12). Retrieved November 11, 2020, from <https://accountingblockchain.net/seven-myths-and-misconceptions-about-blockchain-debunked/>

Suzuki, B., Taylor, T., & Marchant, G. (2018). Blockchain: How It Will Change Your Legal Practice. *Computer & Internet Lawyer*, 35(7), 5–9.

Team, P. (2020, October 20). Top 10 Myths about Blockchain Technology. Retrieved November 11, 2020, from <https://pixelplex.io/blog/top-blockchain-myths/>

The pros and cons of blockchain technology. (n.d.). Retrieved November 12, 2020, from <https://exyte.com/blog/pros-and-cons-of-blockchain>

Walden, S. (2018, June 06). How Blockchain Technology Is Upending These Five Industries. Retrieved November 12, 2020, from <https://www.delltechnologies.com/en-us/perspectives/how-blockchain-technology-is-upending-these-five-industries/?gacd=9643275-1040-5761040-266682520-0>

7 Myths About Blockchain - Busted: CompTIA. (n.d.). Retrieved November 11, 2020, from <https://www.comptia.org/content/infographic/7-myths-about-blockchain-busted>

13 Blockchain Myths everyone believes. (n.d.). Retrieved November 11, 2020, from <https://www.brainbridge.be/news/13-blockchain-myths-everyone-believes>

19 Industries The Blockchain Technology Will Disrupt. (2018, February 24). Retrieved November 12, 2020, from <https://futurethinkers.org/industries-blockchain-disrupt/>