**Blockchain and Cryptocurrencies:**

1. What is Blockchain and Cryptocurrencies?

Blockchain technology is known as the digital ledger recording data of all of the network transactions. These data are stored in “blocks” of information that unalterable, cannot be hacked or cheated, protected by encrypted keys by using hash function. Once a new transaction occurs, a new block of transaction will be added into the system for every participant. The data of the blocks mostly are time and transaction data, dollar amount, etc. As the data is approved and published, it is unchangeable. Blockchain is a decentralized distribution database, which means participants are permitted to access the database simultaneously without being put in the wait list. One closet application for Blockchain is for the cryptocurrency which is cannot be manipulated by any agencies. Cryptocurrency, Bitcoin, Ethereum and DigiByte, are virtual currencies with an impossibility to be faked or double-spend. The word crypto means encryption algorithms and hashing values which are unable to access or extract if we do not have private key.

1. What does it do?
2. What can be done now?

* Bank Remittance:

One of the most logical use of Blockchain is being used as a mean of cash transferring from one person’s / party’s fund to another’s. It is believed that there’s no other industry reap benefits from blockchain for its commercial activities than banking. It can be clearly seen that the institutions of the banking industry only working during business hours, 5 days per week, which means if an individual or a party want to make a transaction on weekends, they have to wait until next Monday for money transferred into their account. In order to handle that issue, Blockchain can be a leverage for banking transaction. More specifically, by using Blockchain, the process of money transaction only occurs as around 10 minutes,

* Healthcare industry:

Healthcare services is more likely can be integrated into Blockchain technology owing to its high-techno security system. As mentioned above, data is encrypted by using hash function before being stored in the “block” database. Similarly, Blockchain can also store the information of medical records so as to avoid drug counterfeiting. To be more specific, these medical records could be encoded and stored on the Blockchain database once they are licensed and signed, the information of the records will be written into the database, and therefore, it can provide confidence and ensuring toward the patients about drug’s authenticity.

* Smart contract:

As far as we know, Bitcoin has formed a bedrock for integrating Smart contract into Blockchain due to its transparency, accuracy and convenience. However, with the advent of Ethereum and Ethereum Smart Contract that the new smart contract idea is popular with all users, paving us with a new way to set up contracts.

1. What is likely to be able to be done soon (in the next 3 years)?

As Blockchain has become well-known day by day, experts and scientists are trying to implement the technology of Blockchain into more areas. One of the most feasible utilizations of this mean of technology is for Voting. [Elections are a symbol of hope and freedom, and the right to vote is an expression of belonging and of having a voice.](https://techcrunch.com/sponsor/unlisted/can-blockchain-save-the-vote/?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS91cmw_c2E9dCZyY3Q9aiZxPSZlc3JjPXMmc291cmNlPXdlYiZjZD0mY2FkPXJqYSZ1YWN0PTgmdmVkPTJhaFVLRXdpLXN2cko0cmpyQWhWYmMzQUtIYzdRQ2hjUUZqQUZlZ1FJQnhBQiZ1cmw9aHR0cHMlM0ElMkYlMkZ0ZWNoY3J1bmNoLmNvbSUyRnNwb25zb3IlMkZ1bmxpc3RlZCUyRmNhbi1ibG9ja2NoYWluLXNhdmUtdGhlLXZvdGUlMkYmdXNnPUFPdlZhdzI4M0s3NE5sU0JlVVVzVV9jRW1vWjQ&guce_referrer_sig=AQAAAB7v-7Aszu-4z3r0k_x-fUr_EthIz3qxJd86hMOVyjNao59HJcKdsyP2oMgNDikxEAeNkN6St3vAjm3YoZGG4-bXXDLqucRvDYtevOahwGdb8cgJ3vzrSOr7cvol5Lim_ZdEexQ_5rYUxKtgX7AhptEfV2VB48vx1IbnRxWAoz3I&fbclid=IwAR1q8cAI22FAQFPJcAgE3NHsRytAhac6MG029Y-31kAstTxay4mGEHzf21Y) With the method of using the security system of Blockchain database, it can help voters to eliminate voting fraud, as well as secure their data. To be more detail, each vote will be stored on the block of information which is nearly cannot be tampered with. Last but not least, the voting results will be officially provided nearly instant owing to the Blockchain technology.

1. What technological or other developments make this possible?

Unlike centralized database owned by government or a company which is more likely to be a target for hackers, Blockchain is not under any individual control. The data is distributed, or duplicated across other participants computers’, which means everyone in the transaction can access the database at any time simultaneously as long as they own the right key to connect with the blocks. By this way, the blocks are incredibly secured because they are mostly invulnerable, which makes them useful for storing and recording transaction data, as well as forming transparency and conviction towards the customers.

1. What is the likely impact?

Cryptocurrencies are secured system. Every payment is executed by using the Blockchain. Thereby, in the near future, many companies will start using Cryptocurrencies as a payment method. Moreover, they can cut off the middleman from various processes. For example, when transferring money from two different companies. The middleman is the bank which will cost some fee based on the amount of money. With Bitcoin and other cryptocurrencies, the cost will be reduced. Plus, no one can make a change our take out the money that put in the blockchain. Therefore, Cryptocurrencies are chosen of future, when it not only cheaper and faster but also more protected than the traditional way.

The business world will be the aspect that affected the most. This alternative shift could change the ways people interact with each other. The first field would be disadvantage is banking. Because Cryptocurrencies is a peer-to-peer (P2P) transfer which mean there are no intermediary agencies, all the banking industry will be paralyzed. Most of the money of banking is come from various of service fees. Hence, when the cryptocurrencies are common, they will be the first victim to be collapsed. Secondly, many brokerages will also make money off and be useless. In investing world, banks are not the only middleman, brokerages are also taking commissions by transactions. Their functions are bringing buyers and sellers come together and help them and take money from these processes. When Bitcoin and others engage in the market, brokerages need to change the way to adapt with the new way of investment.

1. How will this affect you?

Every system not only need to operate well but also must be secured at highest level. Especially, some databases content a lot of important information which must be secured from modifying and duplicating. For example, some new projects of a company will be kept safe from opponents. With a programmer that fascinated in database and bigdata like me, blockchain will be a tool for me to protect my work. Because it is nearly impossible to decrypt a hashing value from each block, I can be confident that my data will not be revealed. With cryptocurrencies it will be very convenient, I do not need to bring too much money when traveling. Moreover, I cannot be robbed or lost it because it’s just like a perfect upgrade for credit cards. In conclusion, both the developed of Blockchain and Cryptocurrencies are advantages for me. It makes my life more secured and instant. For my close relationship, all developed of technology are not a concern. My father is also a technical person, he always updates new things so he can easily adapt with these changes.

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