A BLOCKCHAIN "INTELLIGENCE" ANALYSIS

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ABSTRACT:
WE ARE LIVING IN AN AGE OF SPEED, SECURITY AND TECHNOLOGY. AFTER THE CREATION OF THE BITCOIN OF 2009, THE WORLD GOT IN TOUCH WITH BLOCKCHAIN.
BLOCKCHAIN IS A DATABASE THAT RECORDS THE GROWTH OF THE LOST ACTION FOR AN ACTIVITY, SECURING IT FROM TAMPERING AND REVISIONS. THESE RECORD LISTS ARE ALSO KNOWN AS BLOCKS AND HAVE A TIMESTAMP AND A LINK TO THE LAST BLOCK THEY WERE CONNECTED TO.
DUE TO THE FACT THAT BLOCKCHAIN IS BEHIND BITCOIN AND WAS PICKED UP BY NASDAQ, IT WAS FOUND THAT BLOCKCHAIN IS THE SUSTAINABLE AND SECURE WAY TO DEVELOP THE FUTURE. IN ORDER FOR THE NEXT GENERATIONS TO BE PROTECTED, THE BUSINESS WORLD NEEDS TO UNDERSTAND AND DETERMINE THE BEST USE FOR THIS CRYPTOGRAPHICALLY SECURED CHAIN.
THE PAPER WILL DESCRIBE THE DATABASE, FIELDS OF USE AND SUSTAINABLE DEVELOPMENT OF THE FUTURE.

KEY WORDS: BLOCKCHAIN, BITCOIN, SECURITY, INTELLIGENCE

INTRODUCTION

The first instance when Blockchain was put into use was for Bitcoin and in Bitcoin's announcement paper this mechanism was describe for the first bine by Sathoshi Nakamoto. Blockchain is the technology that is behind the security protocols used by Bitcoin.

Blockchain is a database of transactions that take place in all nodes participating in the system platform that is behind the Bitcoin protocol. A full copy of the currency's Blockchain contains every transition executed in the currency. Backtracking this information, you can find out the value that belongs to each address at a point in time. Thus the Blockchain care record and track assets in a business network. Blockchain can track all kinds of assets, from the tangibles as cash, cars, land, to the intangible ones as intellectual property or those of a virtual nature. Theory and practice have shown that until now, anything of value can be followed and transmitted via a Blockchain network, reducing the risk and diminishing the costs involved.

The need for such a system arouse throughout history, of instruments of trust that permit an efficient means if exchanging values and protect both seller and buyer. The primary forms of this need appeared with the appearance of money. In order to ensure this humankind

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had minted coins, paper money, letters of credit and the list goes on until the 20th century when in virtual banking system came into play. The virtual system made the distance between buyer and seller small, almost eliminating it, but the security limitation remained.

Worldwide, once that the banking system was put into place registered a transaction volume growth, that as time goes on become more complex, thus more vulnerable, sometimes inefficient and expensive. The virtual world has grown in mobility, but the financial system did not become cheaper in order to help this trend. The development of Artificial Intelligence and the rise of the IoT (Internet of Things) will require a step-up in tracking and security of transactions.

THE BLOCKCHAIN CHARACTERISTICS

Blockchain is what we find as the base of the" digital gold" called Bitcoin. This means that, what it it for one crypto coin it can did the same for others. So, as with cars, cellphones, the internet before it, common people are not interested to understand how the Blockchain technology works, they are interested in using it and the advantages that they gain from this[2].

Like the internet (or your car), you don't need to know how the Blockchain works to use it. However, having a basic knowledge of these new technology does, shows you why it's considered revolutionary. This chapter will work as a guide to help you understand the Blockchain.

Think of Blockchain as an adaptive mechanism that continuously conciliates the information of the transaction database. This happens because a Blockchain database is stored in several locations and not stored in any single location, thus they are public and verifiable. There is no centralized version and because of this it accessible to anyone and it is extremely hard to corrupt. This technology was so designed that security and the user's private identity to be protected.

Many have made correlations between the internet and the Blockchain technology. They have made this correlation because they have similar robust technologies at their base: they store blocks of information that are identifiable across the user network and because of this neither can be controlled by any single entity and they do not have any point of failure. In the case of Blockchain, since 2008 since it was first use to power Bitcoin, it has operated without disruption. All Bitcoin problems that were identified in its almost 10 years of use, any problems that arouse, were because of bad intensions or human error. It's the same with the internet, which has proven itself durable for almost 30 years.

If we analyze the internet's development record, it can be assumed that Blockchain will most probably have the same development trajectory.

Because of the technology that is at its core, Blockchain is transparent and incorruptible The Blockchain has a self-auditing system designed for the digital age and leaving a digital value, reconciliation of the transaction takes place at regular intervals of 10 minutes. In this public structure you will find embedded information that makes it transparent. Because of the use of a public network, any change that is tried to be made to the network needs a huge amount of computing power, thus making it incorruptible.

BLOCKCHAIN NODES

The added value of the Blockchain technology it that it has perfected the use of nodes. Nodes are the connected network formed between computers that the Blockchain clients use, and in this process they computers perform the validation on transactions and they relay the information. Every time a computer joins the Blockchain network, a copy of the Blockchain is downloaded. Taking into account the similarities that is has with the internet, Blockchain

[2] https://www.coindesk.com/information/what-is-blockchain-technology/

creates through this process a network of its own, that we can call a second lever network, which work after the internet network function but with a wholly different perspective. Every node acts as an administrator with it joining the network voluntary, a trait that gives the Blockchain its decentralized trait. It is true also that each node gains Bitcoins for its part in this network, so we can say that the participation is incented.

There is a common misconception about nodes, in the fact that it's said that they mine for Bitcoin. As the Blockchain was conceived in order to sustain and help the development of Bitcoin, this is proven to be false. Nodes receive Bitcoins by solving computational tasks[3].

At this moment it is believed that there exist over 500 Bitcoin like crypto currencies, and with recent developments in technologies, we have seen a rise in the use of Blockchains. Fin-tech structures see a large potential in it as the World Bank announces huge investments in the sector. Fin-tech as seen an added value in this technology as it removes the middleman is transactions, as the transactions are closely connected to the identification processes which is made by means of the Graphical User Interface of its users, the wallets.

The nodes give Blockchain another characteristic: security. Because of its data storing in its second level network and the use of the nodes, the data does not risk centralization or corruption, as explained before, it would need to big of a computational power to make any change. In order to access the Blockchain the user needs a randomly generated string of numbers that is called a public key, which is also their Blockchain address. In the case of the Bitcoin there is a private key, that acts as a password that give the user access to its digital assets. But as everything in this virtual age, you will need to safeguard this key in order to be sure that hackers or ill will, will not make your assets disappear. This two access key system is what gave Bitcoin its rise to the top of the crypto currency pyramid and has managed to keep is there. Even with the recent tries of governments of licensing Bitcoin use and trying to track its activity, the distributed ledger put by Blockchain at the basses of the currency as kept it safe and private.

APPLICATION OF BLOCKCHAIN

After seeing what it can do through Bitcoin, the Blockchain technology was attributed a large potential to improve business operating models. The Blockchain ledger was considered in the beginning a disruptive technology (a game changing technology), but instead it showed that it is a foundation for future technologies. Blockchain has the potential to help create economic and social systems; proofs of concept for such products are starting to reach peek point.

Blockchain can be used in multiple fields. Because of this, certain Blockchain related applications or products are considered part of a disruptive innovative business solution wave, as these solutions have lower costs of implementation, taking existing business models by surprise. Bitcoin has established Blockchain as the optimal business method of processing digital transactions.

The Nodes are an automatically notarized ledger[4]. Because of this the technology is trustworthy and makes it possible for the user to have less capital tied in any action, risk and intent of fraud are diminished as the effort does not justify the gain. Some of the fields in which they are possible to be used are: tax collection, land sale registry, insurance, crypto currencies, Banking, IoT, medical records, data storage or digital art.

In banking for example UBS(United Bank of Switzerland) has a specialized research lab dedicated to exploring how Blockchain can be used in financial services to reduce costs and facilitate efficiency. Also the Big Four accounting firms are interested in the Blockchain

[3] Swan Melanie, *Blockchain: Blueprint for a New Economy,* Preface X
[4] Swan Melanie, *Blockchain: Blueprint for a New Economy,* 1

technology. Each of them accepts Bitcoin payment, have installed Bitcoin ATMs in their offices, etc. trying to get their employees accustomed with the technology as they start using smart contracts and digital currencies, more and more[5].

The smart contract[6]s are Blockchain based contract that are executed or enforced without human interaction (partially or fully). This contract was described by the IMF as a way to optimize contract use and reduce moral hazards. The practice is not widespread, thus making it unclear is they are recognized or not.

Another application for it would be the registration of copyrights. As Blockchain technology can create a permanent, public, transparent ledger of data, it can be used to store this information that from de beginning is public and in the market. This would make tracking use much easier; especially in areas there illicit activities are recurrent as in the music business[7].

In august 2016 a research of the Technical University of Munich published that the disruptiveness brought on by the Blockchain technology was about 1.55 billion USD that went into Blockchain related ventures. The startups were from the fields of finance, insurance, IT&C and professional services.

Another interesting use is as a national currency. Estonia is at the moment considering developing the ESTCOIN, a state developed and backed currency that would advance their economy and make transaction with the country safer. If this happens, Estonia will issue the world's first government backed initial coin offering.

As Blockchain is still a new technology, the fact that the financial institutions and states are looking into its use show that it is here to stay and that it has not reached its full service potential yet.

BLOCKCHAIN INTELLIGENCE – THE CONCLUSION

Intelligence is a process that was reached the civilian practice from the military intelligence agencies as a close path, made of nodes. The steps are: Direction (where the objectives determined), collection of the data, processing, analysis and dissemination.

From the Intelligence point of view, our requirement was to analyze the development of the Blockchain since its release in 2009. We have covered its evolution, state of fact and the future developments of the Blockchain technology.

The data was collected and processed from a theoretical point of view, as without a clear practical example this is impossible. But the collected scientific data once analyzed has shown the development this technology has had until know and has shown that with the growing interest in it, usability is only in its primal stages. As shown in the applications of this technology, it is considered that in the future the uses will be affecting many aspects of our lives so that they are kept private, secure, direct connection with other users and with cheaper costs.

Analyzing all this facts we have to face it that in a world where everything is moving fast and we have terrorists and cyber terrorist attacks, the world needs something that can protect them. A limitation of the technology is that Blockchain can protect evil dwellers as easy as it can protect the common folk. But its security protocol will at least give you the opportunity to do whatever is possible from your view to protect your resources (money or goods).

Trying to have a control and general idea of the Blockchain at this point in very hard, as it is still developing. The volume of resources invested are high, developments are taking

[5] Swan Melanie, *Blockchain: Blueprint for a New Economy,* 11
[6] Swan Melanie, *Blockchain: Blueprint for a New Economy,* 16
[7] Swan Melanie, *Blockchain: Blueprint for a New Economy,* 10

place, so I would recommend to either invest in the Blockchain technology or start using it before it gets to be mainstream.

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