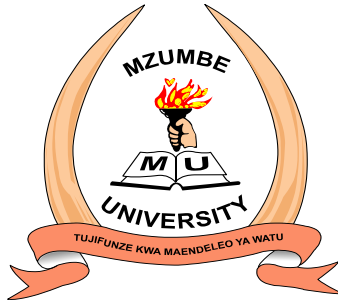# MZUMBE UNIVERSITY

FACULTY OF SCIENCE AND TECHNOLOGY

COURSE NAME: **DISTRIBUTED SYSTEM**

LECTURER: **MR. LUNODZO**

COURSE CODE: **CSS 311**

PROGRAMME: **ICTM III**

TASK: **INDIVIDUAL WORK**

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QUESTIONS: There is a serious concern of global money transactions to go online. This channels to the use of cryptocurrencies. Social media might also be linked to the use of the same raising technologies. One giant technology that is looked at to oversee these advancements is the blockchain technology.

Comments on these trends. (1) How is the DS playing role on this? (2) Would these technologies stay relevant in the coming years? (3) What of the future of blockchain technology? (4) Is it legit and trusted technology?

INTRODUCTION

A distributed system is a collection of autonomous computing elements that appears to its users as a single coherent system.

There has been a phenomenal increase in the use of internet and network. Since a network can have a single point of failure the implementation for the new network topology has deviated toward DS because it a larger connected network that shares resource distribution among nodes. Each node is a computer that holds something to be shared through the network which could be data, program or hardware equipment.

Cryptocurrency is "a digital representation of value that (i) is intended to constitute a peer-to-peer ("P2P") alternative to government-issued legal tender, (ii) is used as a general-purpose medium of exchange (independent of any central bank), (iii) is secured by a mechanism known as cryptography and (iv) can be converted into legal tender and vice versa".

Blockchain is a particular type or subset of so-called distributed ledger technology ("DLT"). DLT is a way of recording and sharing data across multiple data stores (also known as ledgers), which each have the exact same data records and are collectively maintained and controlled by a distributed network of computer servers, which are called nodes.

(1) How is the DS playing role on this?

 DS playing role on this in simple terms, the blockchain can be thought of as a distributed database. Additions to this database are initiated by one of the members (i.e. the network nodes), who creates a new "block" of data, which can contain all sorts of information. This new block is then broadcasted to every party in the network in an encrypted form (utilizing cryptography) so that the transaction details are not made public. Those in the network (i.e. the other network nodes) collectively determine the block's validity in accordance with a pre-defined algorithmic validation method, commonly referred to as a "consensus mechanism "Once validated, the new "block" is added to the blockchain, which essentially results in an update of the transaction ledger that is distributed across the network.

(2) Would these technologies stay relevant in the coming years?

The next industrial revolution will be the era of digital coin, DS and blockchain cryptocurrency. Moreover, it will include a government across the world keeping a close vigil over all kinds of financial transactions in their effort to track money laundering. In this regard cryptography is the best alternative it will not only save a time and maintain high level of security but also keep the flow of money under control. Thus, our study is contemporary and conclusive source for all present and feature endeavors being undertaken in the domain of using blockchain for e-transaction. So yes, will stay relevant to the feature instead there are some of improvement will be added.

What of the future of blockchain technology?

1. Cybersecurity

An ongoing challenge for businesses today is data tampering. Thus, cybersecurity is one of the most promising areas of projected growth for blockchain. Blockchain technology can be used to prevent tampering, secure data, and allow users to verify the authenticity of files.

2. Government

Governments can start implementing distributed ledger technology (DLT) systems to replace traditional paper-based systems. In addition, voting in elections using blockchain technology can be easier, faster, and more secure. Blockchain provides an immutable record of votes to prevent problems of fraud or forgery. It will also help protect voter identities and even support remote voting.

3. Finance – Banking

In 2021, El Salvador was one of the first countries to accept Bitcoin as a legal tender. Due to global inflation and rising costs of money transfers between financial intermediaries. Many researchers think that developing countries are likely to accept cryptocurrencies soon. n addition, another promising area for blockchain development trends is national cryptocurrencies. It can work in conjunction with existing traditional

currencies. This currency helps users to make transactions without depending on any third parties. It also allows central banks to control the circulating supply.

4. Medical

Blockchain can be used to develop applications to manage patient data, control drug supply, automate medical examination and treatment transactions, and more.

In particular, concerns about the production and distribution of counterfeit vaccines have been resolved. Because blockchain will be an effective tool to verify the authenticity of vaccine shipments and track vaccine distribution. IBM is one of the pioneers when it comes to leveraging blockchain to develop a vaccine delivery system.

5. Marketing

Blockchain will be a useful technology in this area. Because it can monitor and measure the effectiveness of advertising campaigns, minimizing cases of advertising fraud. Blockchain technology helps in automatic censorship, removing virtual accounts, and verifying advertising engagement. In addition, it can help collect data on customer behavior and psychology.

(4) Is it legit and trusted technology?

Legit the legal context is addressed in connection with the implications for financial crime, money laundering and tax evasion. Therefore, we will only scrutinize the legal context of cryptocurrencies and blockchain to the extent relevant in connection with financial crime, money laundering and tax evasion.

Trusted technology Yes, it's trusted due to the following reason This allows, amongst others, to easily verify the identity of the network participants. However, at the same time it also requires network participants to put trust in a central coordinating entity to select reliable network nodes in general, permissioned blockchains can be further divided into two subcategories. On the one hand, there are open or public permissioned blockchains, which can be accessed and viewed by anyone, but where only authorized network participants can generate transactions and/or update the state of the ledger

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