

The Impact of Crypto Currency on Society - Adoption, Utility, Culture and Ethics - An engineering Perspective

Final Team Report

APS1018H - The Engineer in Society-Ethics , History and Philosophy

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Executive Summary - APS1018 Team 1

Cryptocurrencies have provided an alternative to traditional banking and financial systems in emerging economies, allowing for global commerce and investment opportunities. In mature economies, cryptocurrencies have disrupted traditional financial systems, creating new opportunities for investment and financial innovation. However, they have also raised concerns about security, regulation, and potential financial instability. Cryptocurrencies are highly volatile and can have far-reaching effects on the broader economy. The decentralized and anonymous nature of cryptocurrencies has led to concerns about money laundering and criminal activities. Cryptocurrency's impact on society and culture remains a subject of ongoing debate and study.

The emergence of blockchain technology as a means to support a decentralized ledger capable of storing immutable records secured through cryptography techniques has led to the creation of a variety of new technologies. Cryptocurrency is one of the primary uses of blockchain technology, and it allows users to make secure peer-to-peer transactions while maintaining transparency and security for all parties involved. Bitcoin was the first widely adopted cryptocurrency and its use began in early 2009, however quickly afterwards many similar systems followed such as Ethereum, Tether and Dogecoin. Cryptocurrencies have become popular investment opportunities around the world, and allow users to make transactions with each other or purchase goods and services they otherwise may not be able to afford.

Regulation Issues emerged due to regulation lagging to keep up with crypto development, uncomprehensive global regulation has led to major vulnerabilities in crypto trade/development, and criminal cases on some occasions. In this report, we review some of the dominating cryptocurrencies in the market with a brief introduction and further analysis to understand the potential issues, some existing government regulations would be reviewed. More importantly, how engineers should play the ethical and responsible roles as the developers of this technology - what actions are needed and influence engineers have on this technology and how engineers should improve their responsibilities in ensuring crypto technology align with the ethical values of the current society & culture.

Cryptocurrency is a digital or virtual currency that is secured by cryptography and operates independently of a central bank. It has gained significant attention in recent years, with many people investing in cryptocurrencies such as Bitcoin, Ethereum, and Dogecoin.

From the people's perspective, cryptocurrency has both advantages and disadvantages. On the positive side, it offers a decentralized and secure way to conduct transactions, as well as the potential for high returns on investment. However, it also carries a high level of risk due to its volatile nature and lack of regulation. Additionally, cryptocurrency is often seen as a speculative asset, with many people investing in it without fully understanding the technology or the risks involved. As a result, there have been instances of fraud and scams in the cryptocurrency space, which have further eroded public trust in the technology.

On the one hand, cryptocurrency offers the potential for financial innovation and can facilitate faster and cheaper transactions. It also has the potential to promote financial inclusion, particularly in regions where traditional banking systems are underdeveloped. However, the decentralized nature of cryptocurrency also poses challenges for governments, particularly in terms of regulation and oversight. Cryptocurrencies are often used for illicit activities such as money laundering and tax evasion, which poses a risk to the integrity of the financial system. As

a result, governments around the world have taken various approaches to regulating cryptocurrency, with some banning it outright and others seeking to establish a regulatory framework to mitigate risks and promote responsible use.

Central Bank Digital Currency (CBDC) is a digital form of central bank money that can be used for transactions, just like physical cash. It is issued and backed by the central bank and can be used for a wide range of transactions, including payments, remittances, and investments.

CBDC offers several potential benefits, such as reducing the cost and time required for financial transactions, increasing financial inclusion, and improving monetary policy implementation. It can also offer a more secure and efficient alternative to traditional payment methods. However, CBDC also presents several challenges, including the need to ensure the security and stability of the digital infrastructure, addressing potential privacy concerns, and ensuring that CBDC does not displace the existing financial system.

Cryptocurrencies have many legitimate and legal uses, however there are many headlines that point to illicit use of the technology. Many of these concerns have been raised by central governments as they feel that cryptocurrency allows criminals to evade law enforcement and can increase the amount of crime. The most common ways criminals use cryptocurrency are for money laundering, use of dark web marketplaces to purchase illegal goods and services, avoiding government sanctions and to run organized crypto-scams. It is a frequently perpetuated belief that all cryptocurrency is completely untraceable, however with modern forensic accounting practices, governments are able to trace the flow of transactions even if only a small mistake is made by the criminals. Cryptocurrency scams are one of the most common ways that the general public is defrauded out of their investments. Since the beginning of cryptocurrency there have been several high-profile incidents of investors collectively losing millions of dollars to cryptocurrency scams. Recent examples of this was the dishonest trading that led to the collapse of the FTX exchange, and the market manipulation that caused CryptoZoo to fail.