A Study on the Impact of Blockchain Technology on Business

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ABSTRACT

A blockchain is a distributed database or ledger shared among a computer network's nodes. They are best known for their crucial role in cryptocurrency systems for maintaining a secure and decentralized record of transactions, but they are not limited to cryptocurrency uses. Blockchains can be used to make data in any industry immutable the term used to describe the inability to be altered. Because there is no way to change a block, the only trust needed is at the point where a user or program enters data. This aspect reduces the need for trusted third parties, which are usually auditors or other humans that add costs and make mistakes. Blockchain technology achieves decentralized security and trust in several ways. To begin with, new blocks are always stored linearly and chronologically. That is, they are always added to the "end" of the blockchain. After a block has been added to the end of the blockchain, previous blocks cannot be changed. Blockchain technology is still very much in its nascent stage, yet it has had a significant impact on finance. While cryptocurrencies have been responsible for bringing the technology to the forefront, the advantages of blockchain have been recognized by various industries. As a result, most modern businesses are now undergoing a sea of change as they prepare themselves to usher in this new era.

INTRODUCTION

Blockchain technology is a secure, decentralized database that stores information in blocks linked together by cryptography. The blocks are managed by a peer-to-peer network, where users collectively adhere to a consensus algorithm to add and validate new blocks. This makes it difficult to change or delete data without the network's consensus, resulting in a chronologically consistent and immutable ledger. Blockchain for business is built on a shared, immutable ledger that is permissioned to increase efficiency among trusted partners. This enables businesses to transact more smoothly and efficiently. Blockchain for business is valuable for entities transacting with one another. With distributed ledger technology, permissioned participants can access the same information at the same time to improve efficiency, build trust, and remove friction. Blockchain also allows a solution to rapidly size and scale, and many solutions can be adapted to perform multiple tasks across industries. Over the last few years, blockchain has steadily emerged as a buzzword and has played an instrumental role in making cryptocurrencies mainstream. The constant rise and fall of the various digital currencies have grabbed everyone’s attention, owing to blockchain technology. From Wall Street bankers to governments and laymen, everyone considers crypto as the future of the fintech world.

OBJECTIVES

Primary objective

To study the impact of blockchain technology in business

Secondary objective

1. To examine the impact of blockchain in business process
2. To identify the key applications of blockchain technology in modern business operations
3. To assess the level of awareness & understanding of blockchain technology among business
4. To explore the regulatory environment surrounding blockchain technology and its influence on business

REVIEW OF LITERATURE

Al Tilooby (2018) explains the impact of blockchain technology on financial transactions, this dissertation uses a pluralistic method and an analysis of the perspectives of key industry players and observers, and a theoretical interpretation through the lens of transaction cost theory.

D Knezevic -Montenegrin (2018) stated an impact of blockchain technology platform on the financial sector through cryptocurrency, and an impact on other industries. The subject of research is not only this technology but also its commercial exploitation.

Friedrich Holotiuk, Francesco Pisani, Jurgen Moormann (2017) explains the impact of blockchain in payments, which represents a major cornerstone of banking and the cradle of this technology. The results, grouped around four areas of thoughts, indicate that blockchain allows the offering of new services and renders some of the current ones obsolete.

Joon-Seok Kim & Nina Shin (2019) mentions blockchain as recent IT platform has been mainly applied in electronic money markets. Its application to SC collaboration is expected to be useful because of BCT attributes such as information transparency, information immutability, and smart contracts.

M Casey, J Crane, G Gensler, S Johnson, N Narula (2018) stated that there is great potential for transformation and disruption. A lot of work needs to be done to prove that the technology can work and to develop more compelling use cases. It may not only be blockchain, but ultimately big data, machine learning and the combination of these digital innovations that could be disruptive

Roberto Leonardo Rana, Nino Adamashvili and Caterina Tricase (2022) illustrate that there is substantial interest in the adoption of Blockchain technology in the tourism industry. This novel technology has great potential to revolutionize this sector; to help little economies to strengthen and shift towards the level of developed countries.

Walid AI-Saqaf & Nicolas Seidler (2017) mentions an effort to contribute to that body of scholarship by exploring blockchain technology's potential applications, and their limits, in areas that intersect with social impact, including human rights.

Jörg Weking, Michael Mandalenakis, Andreas Hein, Andreas Hein, Markus Böhm & Helmut Krcmar (2020) explains technological advantages and the possible application fields of the blockchain technology. Studies have stressed the ability of blockchain solutions to alter and disrupt existing business models and create entirely new business models

RESEARCH METHODOLOGY

Scope

- Blockchain's decentralized nature and cryptographic algorithms provide robust security against data breaches and fraud, making it ideal for sensitive transactions.
- The immutable ledger of blockchain ensures transparency and traceability, fostering trust among stakeholders and reducing the need for intermediaries.
- Blockchain can automate processes, reduce paperwork, and improve efficiency, leading to cost savings and faster transaction times.
- Blockchain enables the creation of innovative business models, such as decentralized finance (DeFi) and supply chain management, opening up new opportunities for growth.

Limitation

- Blockchain can be slow to process transactions, especially as the network grows, limiting its efficiency for large-scale applications.
- Some blockchain consensus mechanisms, like Proof of Work, require significant energy to operate, raising environmental concerns.
- Some blockchain consensus mechanisms, like Proof of Work, require significant energy to operate, raising environmental concerns.
- The decentralized nature of blockchain can make it difficult to regulate, posing legal and compliance risks.

Sample size

From the total population it would be time consuming as well as difficult to conduct the survey so for the purpose of this research work as a researcher I have selected 100 of population for sampling

Sampling method

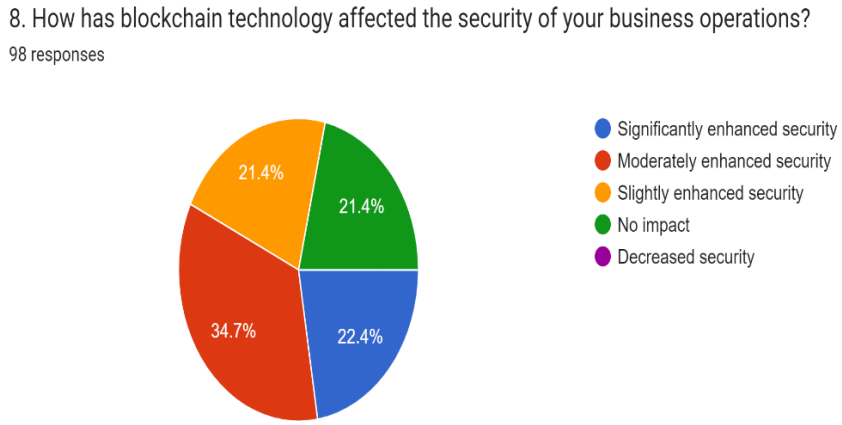
The samples were selected using Convenience sample is a type of non-probability sampling method where the sample is taken from a group of people easy to contact or to reach.

Data collection method

As a researcher I have used **Primary data collection** involves gathering information directly from the source. **Questionnaire** is a common method used for this, where a set of predefined questions is presented to respondents in written or electronic form to collect their responses.

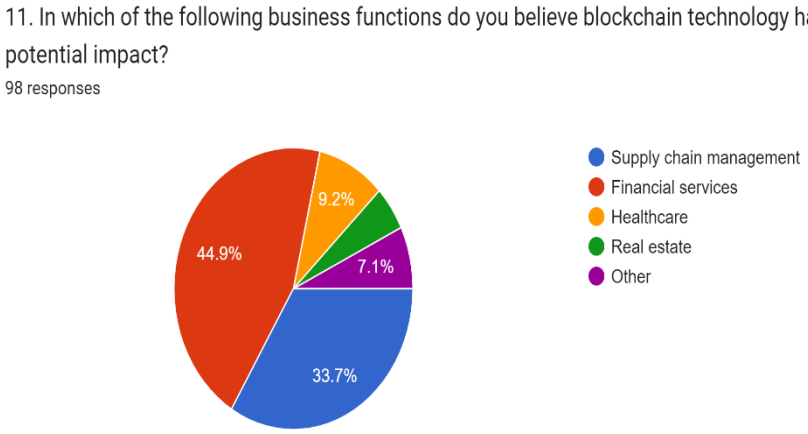
FINDINGS

FIGURE 1



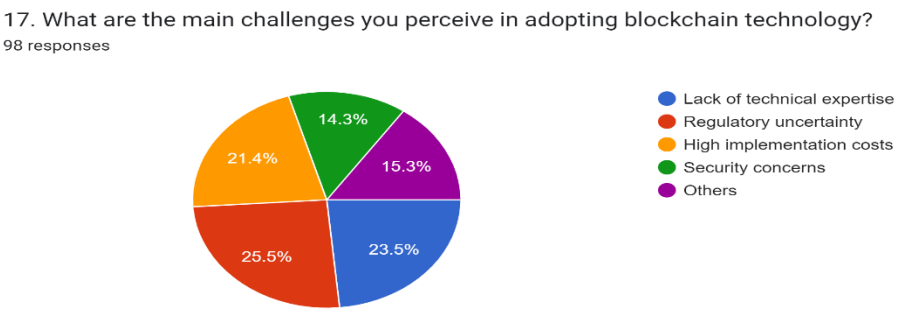
As the figure 1 represents the data of respondents on the security of blockchain technology where majority of 34.7% responded that it has moderately enhanced security 22.45% responded that its has significantly enhanced security.

FIGURE 2



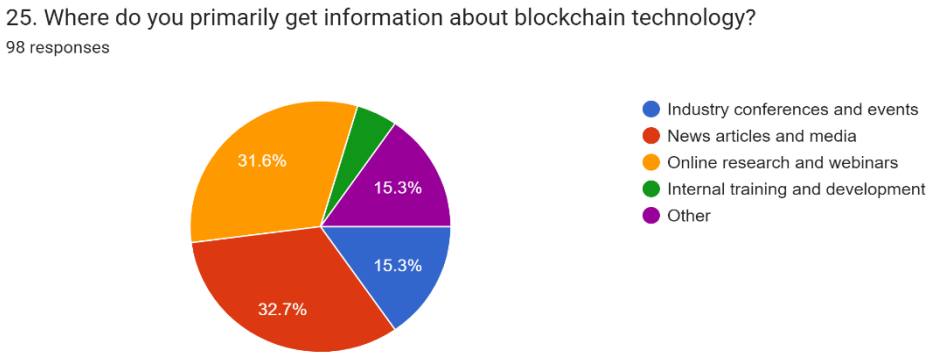
As the figure 2 represents the data of respondent business function in which blockchain technology has potential impact where majority 44.9% responded that financial services have a potential impact 33.7% responded that supply chain management have a potential impact.

FIGURE 3



As the figure 3 represents the data of respondents about the main challenges in adopting blockchain technology where majority 25.5% responded that regulatory uncertainty is a main challenge 23.5% responded that lack of technical expertise is a main challenge.

FIGURE 4



As the figure 4 represents the data of respondents about the primary information they get on blockchain technology where majority 32.7% responded that News articles and media where primary information on blockchain technology 31.6% responded that online research and webinars where primary information on blockchain technology.

RECOMMENDATION

- Develop user-friendly tools and platforms to lower the barriers of entry for businesses and individuals.
- Explore and implement solutions like sharding or sidechains to improve transaction speed and efficiency.
- Promote awareness and understanding of blockchain technology through educational programs and resources.
- Collaborate with governments and regulatory bodies to create clear guidelines and standards for blockchain technology, promoting innovation while mitigating risks.
- Support research and development of alternative consensus algorithms that reduce energy consumption, such as Proof of Stake or hybrid approaches.

CONCLUSION

Blockchain technology has the potential to revolutionize various industries by providing enhanced security, transparency, and efficiency. While its adoption is still in its early stages, the findings of this study indicate significant interest and potential for its application across different business functions. Blockchain's decentralized nature and cryptographic algorithms provide robust security against data breaches and fraud, making it ideal for sensitive transactions. The immutable ledger of blockchain ensures transparency and traceability, fostering trust among stakeholders and reducing the need for intermediaries. Blockchain can automate processes, reduce paperwork, and improve efficiency, leading to cost savings and faster transaction times. It enables the creation of innovative business models, such as decentralized finance (DeFi) and supply chain management, opening up new opportunities for growth. By addressing these challenges and leveraging the benefits of blockchain, businesses can unlock new opportunities, enhance their operations, and create a more secure and transparent future.

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