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Business Implications of Using Virtual Currency Exchange (Bitcoin) in Commercial Transactions

Dedi Iskamto
School of Economics and Business, Telkom University
deditaba@telkomuniversity.ac.id

Abstract

Virtual currencies such as Bitcoin and Ethereum have seen a rapid increase in their use over the past few years. Their speed, security, and minimal transaction costs have attracted worldwide attention as a new alternative in commercial transactions. Therefore, this study aims to explore the business implications of using virtual currencies in commercial transactions. This study will analyze how virtual currencies affect various aspects of business such as payments, financial management, and relationships with third parties. On the other hand, the use of virtual currencies also brings some business challenges such as price volatility and lack of mature regulations related to virtual currencies. Using a systematic literature review method, this study will provide insights into how virtual currencies can change the way businesses operate and interact with customers.

Keywords: Bitcoin, Virtual Currenc, blockchain,

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Introduction

The integration of virtual currency in transactions has become a hot topic of discussion in recent years. A number of virtual currencies such as Bitcoin and Ethereum have experienced rapid growth and development and can offer the potential to transform the way businesses work. Along with the increasingly advanced development of digital technology, the use of virtual currency offers various advantages such as speed, security and minimal transaction costs compared to traditional payment methods. However, the business implications of using virtual currency still need to be studied and analyzed more deeply.

A number of studies to understand and analyze the impact and business implications of using virtual currency have been carried out. One of them is according to research(Bouri et al., 2018), virtual currencies appear to show great potential as a means of portfolio diversification and protection against inflation risks. This research shows that there is added value for investors as indicated by the positive value of the relationship between virtual currencies and traditional portfolios.

There are also research results by(Chiu & Koeppl, 2017)which states that the use of virtual currency can increase efficiency and minimize transaction costs. This study shows that the use of virtual currency in transactions is faster and with lower transaction costs when compared to traditional payment methods.

On the other hand, the use of virtual currency is not free from challenges and risks, especially for business people. As in research(Yermack, 2013)which highlights the high price volatility in virtual currencies such as Bitcoin. This high price volatility will cause instability in the value of virtual currency and affect businesses that rely on virtual currency in their activities.

Regulatory uncertainty is also a major challenge in the use of virtual currencies. In fact, regulation is a key factor in the use of virtual currency in commercial transactions. Research by(& Co, 2021)emphasize the role of regulations in a transaction. In the research, it is stated that legal uncertainty and an immature regulatory framework can directly affect the adoption and use of virtual currencies in the business environment. Therefore, it is important for business people who will implement virtual currency to study

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and understand the applicable regulatory framework and follow developments in regulations regarding the use of virtual currency.

In this context, this study aims to comprehensively analyze the business implications of using virtual currencies in commercial transactions. By considering the associated benefits and challenges, it is hoped that this study can provide valuable insights for business people who wish to utilize virtual currencies as part of their business strategy.

Literature review

Bitcoin History

The name Bitcoin as a virtual currency was first introduced by a person or group of people under the pseudonym "Satoshi Nakamoto", namely in October 2008, Satoshi Nakamoto released a whitepaper entitled "Bitcoin: A Peer-to-Peer Electronic Cash System"(Nakamoto, 2008). This whitepaper explains the basic concepts of the Bitcoin virtual currency.

*Whitepaper*It defines Bitcoin as a peer-to-peer electronic payment system based on blockchain technology. The birth of Bitcoin was marked by the mining of the first Bitcoin block by Nakamoto on May 3 2009. This first block is known as the "Genesis Block".

In the beginning, Bitcoin had very little value and was only used by a small percentage of people in the crypto community. But as time went by, users and interest in Bitcoin began to increase. Until May 22 2010, there was a buying and selling transaction with Bitcoin involving the world's first real goods. Namely when a Bitcoin user buys two pizzas by paying 10,000 Bitcoins.

*Bitcoins*then began to gain wider attention when various cryptocurrency or virtual currency exchange transactions began to appear. Mt. Gox, which was founded in 2010, became the largest Bitcoin exchange center at that time. However, Mt. Gox experienced the tragic event of losing a large amount of Bitcoin due to security failures, which later ended in the bankruptcy of the platform(Popper, 2016).

Since then, Bitcoin has experienced a journey full of twists and turns. Its value has increased quite significantly, and reached its peak at the end of 2017. Even though the current value of Bitcoin still remains volatile, this virtual currency remains a subject of interest for investors, business people and the general public.

Bitcoin Mechanism

*Bitcoins*uses blockchain technology to facilitate transactions and maintain decentralized public records. The Bitcoin mechanism involves several important concepts, such as mining, transactions, and verification.

Bitcoin mining involves solving complex cryptographic tasks using computing. Miners use special computer hardware called "ASIC" (Application-Specific Integrated Circuit) to solve this task. The mining process aims to create new blocks in the Bitcoin blockchain and validate transactions(Nakamoto, 2008).

Bitcoin transactions occur between users who have Bitcoin digital wallets. Each transaction consists of three components, namely input, output and digital signature. Input is a reference to a previous transaction that will be used as a source of funds, while output is the destination address of the recipient of funds. Digital signatures are used to verify the authenticity and integrity of transactions(Antonopoulos, 2014).

Bitcoin transaction verification is carried out by miners who verify the validity of each new transaction. Each transaction will go through a complex mathematical calculation process by miners to ensure that the transaction is valid and does not violate the Bitcoin protocol rules. Once a transaction is verified and declared valid, the block containing the transaction is then added to the blockchain network(“Bitcoin and Cryptocurrency Technologies Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller and Steven Goldfeder.,” 2016).

*Blockchain*is a decentralized public ledger stored on many computers connected to the Bitcoin network. Each block in the blockchain contains a number of transactions that have been verified by miners. Each

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block has a reference value to the previous block that is linked to each other, forming an immutable block chain and providing security against wild data modification(Antonopoulos, 2014).
This combination of mechanisms is what allows Bitcoin to operate as a decentralized digital currency with a secure and transparent payment system.

Use of Bitcoin in Commercial Transactions

The use of Bitcoin in commercial transactions is currently still relatively limited, although there have been several businesses and organizations that accept Bitcoin as a payment method. Several online sales sites, especially those operating in the technology and electronic services industry, have started to implement Bitcoin as one of their payment methods. Well-known examples are Microsoft, Overstock.com, and Shopify.
In the midst of the rapid development of Bitcoin, a new business model has also emerged, namely Bitcoin payment acceptance services. This service accepts Bitcoin payments and then converts them to traditional fiat currency. Examples of companies with this business model are BitPay and CoinGate.
Apart from that, there are also several transportation agencies and hotels that are starting to accept Bitcoin payment methods. This allows consumers to book accommodation, flight tickets, and various tourism and transportation services using Bitcoin as a payment method.
In the FinTech and blockchain sectors, many are also developing or have developed payment solutions based on Bitcoin or other virtual currencies. This startup is engaged in providing a more efficient and cheaper alternative compared to traditional payment systems. Examples of FinTech startups include Bitwala, BitPay, and Square.

Advantages of Bitcoin

In using Bitcoin as a virtual payment method, Bitcoin certainly has several advantages compared to traditional payment methods. One of them is freedom and control for the user. Bitcoin users have complete control over their assets and transactions. Not only that, the independent nature of Bitcoin from financial institutions such as banks or other traditional financial institutions provides freedom for users in transactions because users can make transactions without the need for a third party.(Nakamoto, 2008).
*Bitcoins*also enables instant and cheap transfer of funds throughout the world without reliance on complex and expensive processes that often occur in traditional banking systems. This is also possible because of the nature of Bitcoin which does not require a third party in the transaction process(Rizun, 2016).
*Blockchain*which is the mechanism used to run Bitcoin which has a decentralized nature and high transparency. These two characteristics then also apply to Bitcoin so that Bitcoin has a high level of transparency because every transaction contained in the block can be accessed publicly. This mechanism increases the integrity and security of Bitcoin transactions(Nakamoto, 2008).
*Bitcoins*It is also considered protected from the risk of inflation. Bitcoin availability is limited to only 21 million coins that can exist. So in the long term, this provision can protect the value of user assets from the threat of lurking inflation, especially in relation to traditional fiat currencies(Bouoiyour & Selmi, n.d.).
Not only that, it is generally known that the value of Bitcoin often varies significantly, but this does not rule out the potential for its value to grow significantly as well. This attracts the attention of many investors and speculators who are looking for long-term profits(Ciaian et al., 2016).

Bitcoin Weaknesses

The various advantages offered by Bitcoin do not mean that it has no weaknesses. The volatility of the price or value of Bitcoin which tends to continue to fluctuate and is susceptible to drastic and unexpected changes makes it difficult for users and business people to measure the real value or actual value of the Bitcoin assets they own.(Baur et al., 2018).
The scalability aspect is also a challenge for Bitcoin. To date, Bitcoin still faces challenges in the network's ability to handle high transaction volumes quickly and efficiently. Bitcoin's rapid growth also causes delays in the verification process and increases transaction costs(Gervais et al., 2014).

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Rules and regulatory frameworks binding all virtual currency related activities are still lacking in many jurisdictions. This results in uncertainty for businesses and users in general, especially in terms of legal compliance and consumer protection(Auer & Claessens, 2018).
Like digital data in general, Bitcoin assets are also vulnerable to hacking and theft. Users have private keys to be able to access their Bitcoin assets. If the key is lost or stolen, then access to the asset is also lost(Moore & Christin, 2013).
*Bitcoins*carries anonymity as one of its advantages. However, this anonymity makes Bitcoin vulnerable to being used to support various illegal activities such as money laundering, buying and selling illegal goods, and terrorist financing.(Foley et al., 2019).
Based on the explanation above, this study was carried out with the hope of being able to further identify the business implications of using virtual currency, in this context Bitcoin, in commercial transactions. In this way, we can identify the potential impacts and threats posed by Bitcoin to the industry and recognize the direction of Bitcoin's future development.

Method

Quoting from(Rother, 2007), Systematic literature review is a research process with systematic and explicit methods in order to answer a specific research question by carefully identifying, selecting, and critically evaluating studies and articles that are used as reference sources for carrying out the research.
This study was carried out using the systematic literature review (SLR) method, utilizing journals and books that have been published online regarding Bitcoin and related topics. The data used is secondary or tertiary data using journals and books published and accessible online as reference sources. The data obtained is qualitative data regarding Bitcoin and its implications for the business world.

Analysis and Discussion Results

Findings Business Implications of Using Virtual Currency in Commercial Transactions

The use of Bitcoin virtual exchange in commercial transactions certainly has a number of significant business implications. Bitcoin can basically trigger a major transformation of the business world with its presence, the increasing adoption of Bitcoin as a payment method also accelerates this process. Therefore, it is important for business people and users in general to recognize and understand the business implications of implementing virtual currency as a payment method in commercial transactions.

Increased Accessibility of International Transactions

The virtual currency Bitcoin can make international transactions easier by reducing the barriers involved in using traditional currencies for international transactions(Härdle et al., 2020; Yermack, 2013). Bitcoin is basically universal or global and can be widely accepted by various countries. This removes the complexity and costs associated with traditional fiat currency exchanges between countries. Thus, international transactions can occur without having to face obstacles in the currency exchange process(Härdle et al., 2020; Yermack, 2013).
In various corners of the world, there are currently certain locations where access to banking infrastructure is limited. This limitation then hampers the rate of transactions between regions in that area. By utilizing Bitcoin, direct access can be done so there is no need to rely on limited traditional banking infrastructure(Ahluwalia et al., 2020; Böhme et al., 2015).
Transactions using Bitcoin can occur instantly or in a shorter time compared to using traditional payment methods, so international payments using the Bitcoin virtual currency can speed up the international transaction process(Catalini & Gans, 2016; Tapscott & Tapscott, 2016).

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By removing the barriers of currency exchange complexity, limited banking infrastructure, and increasing transaction speed, the use of virtual currency can increase accessibility and efficiency and facilitate international transactions more easily.

Reduction of Transaction Fees

The nature of Bitcoin which does not depend on third parties or traditional financial intermediaries means that Bitcoin requires relatively low transaction costs compared to using traditional fiat currency such as credit cards or bank transfers. These lower transaction costs then become more meaningful when viewed in the context of international transactions(Bouri dkk., 2018; Ciaian dkk., 2016; Iskamto, 2022, 2023; Iskamto dkk., 2022).

Bitcoin transactions generally incur lower transaction fees than traditional currency transactions. However, transaction fees can still vary depending on the volume of transactions and the level of priority given to the transaction itself(Gandal et al., 2018).

When carrying out international transactions, businesses are often faced with having to convert traditional currencies which are quite complicated and time consuming and expensive. Utilizing Bitcoin can minimize these costs or even eliminate them because Bitcoin is a global currency that is valid and widely recognized(Yermack, 2013).

*Bitcoins*has a peer-to-peer principle between the sender and recipient so that transactions using Bitcoin do not require a third party intermediary which is usually the cause of additional costs to pay for intermediary services(Barber et al., 2012).

One of the most commonly used payment methods today, namely credit cards, requires businesses to pay processing fees to payment processing institutions for each transaction. By using Bitcoin, these processing fees can be minimized or even eliminated(Barrdear & Kumhof, 2016).

It is important to note that Bitcoin transaction fees can vary depending on several factors such as the level of Bitcoin network congestion, transaction priority level, as well as the use of third-party services such as digital wallets or e-wallets. Therefore, when implementing the Bitcoin payment method in running a business, you must pay attention and consider the costs that may be required and continue to monitor changes in Bitcoin transaction costs over time.

New Business Growth Potential

The increasingly popular application of virtual currency as a payment method opens the door for various new business models to emerge. For example, traditional fiat currency and virtual currency exchange companies, digital wallet service providers, and applications utilizing Bitcoin or other virtual currencies(Ahluwalia et al., 2020; Tapscott & Tapscott, 2016).

The use of Bitcoin and its underlying blockchain technology has sparked various innovations in the financial sector. Businesses can leverage blockchain in developing innovative financial solutions, such as smart contracts, decentralized financial services (DeFi), or new peer-to-peer payment systems.

(Böhme et al., 2015)in his study shows that the development of Bitcoin has become a stepping stone for various new business models that focus on developing financial technology innovation. The study also highlights the development of new businesses and startups that utilize Bitcoin in the development of their financial technology.

*Bitcoins*can open the door to areas previously neglected by traditional financial institutions in the region. In this area Bitcoin can be used as an alternative to participate in international markets.

According to a study by(Tschorsch & Scheuermann, 2016), Bitcoin has the potential to increase inclusiveness, especially for areas that are neglected by the current traditional financial infrastructure. In the study it was also stated that several developing countries, where access to banking institutions was still limited, experienced an increase in economic activity as a result of the implementation of Bitcoin.

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The company's provision of payment services using Bitcoin has the potential to expand its customer base and open up new opportunities in e-commerce transactions. By implementing Bitcoin, companies can attract new customers who use Bitcoin as their primary payment method.
This is in accordance with the results of a survey by(Hileman & Rauchs, 2017)stating that there has been a significant increase in the adoption of Bitcoin by businesses and online sellers. The survey stated that around 30% of online businesses accepted Bitcoin as a payment method in 2016.
The potential for new business growth and use of Bitcoin will continue to change and develop as technology develops. The situation is still changing, and in the future there will be more innovations and new developments related to the use of Bitcoin in business. Thus, business people must continue to monitor and follow the current trends and developments in Bitcoin.

Increased Security and Transparency

The use of Bitcoin or other virtual currencies in general can increase security in transactions and transparency of the payment supply chain(Crosby dkk., t.t.). Increased security and transparency are two important aspects in the development of Bitcoin.
*Bitcoins*runs on blockchain technology which has strong and strict security characteristics. The cryptographic mechanism utilized by blockchain ensures the integrity and validity of every transaction that occurs.
According to research results by("Bitcoin and Cryptocurrency Technologies Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller and Steven Goldfeder.," 2016), blockchain mechanism technology, namely strong cryptography, distributed consensus, and a decentralized monitoring system can strengthen security in Bitcoin. This security mechanism helps Bitcoin to protect transactions and related assets.
The main characteristic of Bitcoin that attracts attention is its high level of transparency. This is made possible by the nature of blockchain where each block can be seen by all participants and is permanent or cannot be modified, thus allowing each participant to verify transactions and track money flows.
Based on research conducted by(Krombholz et al., 2016), the high level of supervision in Bitcoin allows for good public oversight and prevention of illegal acts such as fraud, money laundering, and other illegal activities related to finance.
All transactions in Bitcoin are open and public, but not the user's identity. All user identity details are protected by complex cryptographic keys that are the same as the cryptographic keys used in securing transactions. Therefore, when using Bitcoin, users' personal data remains safely protected and adheres to the anonymity inherent in blockchain and Bitcoin.
Research conducted by(Yoo et al., 2020)stated that many Bitcoin users are interested in using Bitcoin because of the high level of security of personal data. This allows users to feel calm when making transactions and users can control the personal data released when making transactions.
Increased security and transparency with the use of Bitcoin has been one of the important factors driving the adoption of this virtual currency in the business environment. Strengthened security through blockchain technology and high transparency through an open blockchain can provide confidence and trust to Bitcoin users.

Potential Uses of Bitcoin in Business Contexts

Businesses can operate worldwide without having to face significant geographic barriers by leveraging Bitcoin. The use of Bitcoin can increase the accessibility of traditional commercial transactions, especially in areas that are difficult to reach or with limited banking infrastructure. Transactions for buying and selling goods or services to customers throughout the world can occur freely without being hampered by geographical restrictions, and payments can be made easily via Bitcoin.

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Research by(Tschorsch & Scheuermann, 2016)stated that Bitcoin has high potential in increasing the inclusiveness of financial services for regions that do not yet have adequate traditional banking infrastructure. This opens up opportunities for businesses to tap into a wider market.

Bitcoin's potential as a virtual medium of exchange in commercial transactions offers various benefits such as reduced transaction costs, transaction speed, and global access. However, it is important to note that the use and implementation of Bitcoin in a business context depends on other factors such as regulation, market stability, and general market acceptance of the cryptocurrency.

Threats of Using Bitcoin in a Business Context

Even though Bitcoin has relatively high potential as a virtual medium of exchange in commercial transactions, Bitcoin is still not free from several threats that need to be considered when using it in a business context. One of the main threats to using Bitcoin is price volatility. The value of Bitcoin, which tends to always fluctuate, poses a risk of price instability in business transactions. Businesses that accept Bitcoin as one of their payment methods must be prepared for this volatility which can affect business revenue and profits.

Based on research by(Baur et al., 2018), it is stated that the fluctuating value of Bitcoin means that businesses interested in integrating Bitcoin into their business model must be prepared to consider such risk management strategies in order to face the threat of instability in the value of Bitcoin.

Additionally, although Bitcoin uses blockchain technology which is known to be secure, there are still security risks associated with its use. Cyber attacks such as Bitcoin theft or other attacks on Bitcoin exchange platforms can result in significant financial losses for businesses. Additionally, there are also risks of fraud and market manipulation associated with Bitcoin(Chiu & Koeppl, 2017).

The security risks that have been mentioned are increasingly lurking considering that the regulatory and legal framework covering commercial transactions with virtual currencies is immature in most regions. This legal uncertainty has a major influence on the use of Bitcoin in business and is also an obstacle in the operations of businesses that implement Bitcoin. Businesses need to continuously monitor regulatory developments and be ready to adapt to changes in the legal environment(Raskin & Yermack, 2016).

The decision to implement Bitcoin in commercial transactions must be made by carefully and thoroughly considering the associated threats and risks. Businesses need to conduct a thorough evaluation of their own situation and consider appropriate risk management policies to address threats that may arise over time.

Conclusion

*Bitcoins*has had a significant impact on the business world by influencing several key aspects, such as payments, international remittances, investments, and technological innovation. As a decentralized digital currency that uses blockchain network technology, Bitcoin has brought a wave of change in the way businesses operate.

One of the main impacts of Bitcoin on business is the increased accessibility of international transactions. With Bitcoin, businesses can make payments and remittances directly and quickly without dependence on traditional financial institutions or the need to go through complicated processes. This allows businesses to operate in global markets with lower transaction costs and shorter settlement times. For example, ecommerce businesses can expand their market worldwide and accept Bitcoin payments from customers in various countries without cross-border payment barriers.

Additionally, Bitcoin has also influenced the way businesses invest. Several companies and individuals consider Bitcoin as a promising investment asset with high value growth potential. Some businesses have also leveraged Bitcoin's underlying blockchain technology to develop innovative solutions, such as smart contracts or decentralized applications (dApps), that can change the way businesses operate and interact with consumers.

However, Bitcoin also has impacts that need to be aware of in a business context. High price volatility can create uncertainty for businesses using Bitcoin as a payment or investment method. Additionally, regulatory

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challenges and an immature legal framework may pose obstacles to further adoption of Bitcoin in a business context. Using Bitcoin also requires considering security issues, such as the risk of hacking and theft.
Overall, Bitcoin's influence on business continues to grow as the technology develops and becomes more widely adopted. In recent years, there has been a significant increase in the use of Bitcoin by businesses, but there are still many questions and challenges that need to be addressed to fully exploit Bitcoin's potential in the business environment.

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Biography

Dedi Iskamto is a Lecturer at School of Economics and Business Telkom University Indonesia, the field of applied management, with a field of concentration of Research interest in entrepreneurial, Islamic Banking, Marketing, financial mathematics and Human Resources Development. His degree was from Universitas Indonesia, he took his master in management in Universitas Trisakti and His Ph.D form Universiti Sultan Zainal Abidin Malaysia.