

Legal Regulations on The Use of Blockchain Technology in Indonesia



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ABSTRACT: Blockchain technology has become one of the most revolutionary innovations in the digital era, offering transparency, security and efficiency in various sectors. In Indonesia, adoption of this technology continues to grow, especially in the financial, logistics and government sectors. However, legal regulations governing the use of blockchain technology are still in the developing stage. This article aims to analyze existing legal regulations in Indonesia regarding the use of blockchain technology, identify the legal challenges faced, and provide recommendations for developing a more comprehensive legal framework. Using a normative approach, this research found that although there are several relevant regulations, such as the ITE Law and OJK Regulations, there are still legal gaps that need to be addressed to ensure safe and efficient blockchain adoption in Indonesia.

KEYWORDS: Blockchain, legal regulations, technology, Indonesia, digital security.

1. INTRODUCTION

Blockchain technology has become a global focal point as one of the most promising technological innovations of the 21st century. Blockchain is known for its ability to create transparent, secure, and efficient systems for managing data and digital transactions. In Indonesia, the use of this technology is expanding, especially in the financial sector through the implementation of cryptocurrencies, smart contracts, and digital payment systems. Additionally, the logistics, healthcare, and government sectors are also beginning to explore the potential of blockchain to enhance operational efficiency and accountability. (Kadir, S. 2023)

However, despite the many benefits offered by blockchain, this technology also presents significant challenges, particularly in the context of law and regulation. The decentralized nature of blockchain and its resistance to modification raise various questions regarding accountability, data protection, and the legal validity of transactions conducted through this platform. In Indonesia, although there are several regulations related to information technology and digital finance, such as the Electronic Information and Transactions Law (UU ITE) and regulations from the Financial Services Authority (OJK), specific regulations regarding blockchain have not yet been fully developed. (Santoso, J. T. 2023)

The Indonesian government has shown significant interest in the development of blockchain technology, particularly in efforts to support national digital transformation. Various initiatives have been launched to encourage blockchain adoption, such as the National Non-Cash Movement (GNNT) program and the implementation of blockchain-based recording systems in the logistics sector. However, the lack of specific and comprehensive regulations may become a barrier for industry players who wish to fully leverage this technology. Legal uncertainty may also pose risks to blockchain users, both in terms of security and transaction validity. (Fakhriyah, D. A., & Samsudin, A. 2024).

In addition, the issue of personal data protection is one of the main concerns in the use of *blockchain* in Indonesia. With the enactment of the Personal Data Protection Law (PDP Law), new challenges arise in ensuring that *blockchain technology*, which is permanent and difficult to change, can comply with data protection principles, including the right to delete data. This mismatch between blockchain characteristics and legal requirements can create a dilemma for developers and users of the technology.

On the other hand, the great opportunities offered by *blockchain* also encourage various sectors to continue developing innovative solutions based on this technology. In the financial sector, for example, the use of *blockchain* to speed up the clearing process and settlement of transactions has gained widespread attention. The logistics sector also sees *blockchain* as an effective tool to increase transparency and reduce operational costs. However, without a clear legal framework, this potential may not be optimally realized. (Simanjuntak, J. M. 2024).

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An adaptive and inclusive regulatory approach is urgently needed to support the development of *the blockchain* ecosystem in Indonesia. Regulations that are too strict can stifle innovation, while regulations that are too lax can pose a risk of misuse of technology. Therefore, a balance is needed between supporting technological innovation and protecting the public interest. The development of a comprehensive legal framework and collaboration between governments, industry players, and academics are important steps to create *a secure and sustainable* blockchain ecosystem.

Through this article, the author aims to explore existing legal regulations in Indonesia related to *blockchain* technology, identify legal gaps and challenges, and provide recommendations for the development of better regulations. Thus, it is hoped that *blockchain* adoption in Indonesia can run optimally, support the growth of the digital economy, and provide broad benefits for society.

2. RESEARCH METHODS

This research uses a normative juridical approach, which focuses on the analysis of laws and regulations and legal literature related to the use of *blockchain* technology in Indonesia. This approach was chosen because it is relevant to examine how existing laws can be applied or developed to regulate evolving technologies such as *blockchain*. This study also analyzes the legal principles contained in various national regulations, including the ITE Law, the PDP Law, and regulations from the OJK and Bank Indonesia. (Rohman, M. N. 2021).

The data sources used in this study consist of secondary data, such as laws, government regulations, scientific journals, textbooks, and articles related to blockchain technology. The analysis is carried out by reviewing the content of these regulations, identifying regulatory gaps, and comparing them with international practices that are considered successful in regulating *blockchain* technology. This comparative approach helps to provide a broader perspective on how Indonesia can develop a more effective legal framework.

In this study, the author also uses a descriptive analysis method to explain how current regulations work and how *blockchain technology* is adopted in various sectors in Indonesia. The author outlines the legal challenges faced, such as the issue of personal data protection, accountability in decentralized systems, and the legal validity of blockchain-based transactions. The results of this analysis are used to formulate policy recommendations that can support *the* adoption of blockchain safely and efficiently in Indonesia.

3. DISCUSSION

1. Legal Regulations on the Use of Blockchain Technology in Indonesia

Blockchain is an innovative technology that allows for decentralized, transparent, and secure data logging. In the legal context, this technology brings new challenges and opportunities, especially in terms of data validity, smart contracts, and digital transactions. In Indonesia, the development of blockchain has attracted the attention of regulators, given the great potential of this technology in various sectors such as finance, logistics, and government. Until now, there has been no specific regulation that regulates blockchain technology comprehensively in Indonesia. However, several regulations related to electronic transactions, such as Law Number 11 of 2008 concerning Information and Electronic Transactions (UU ITE) and Financial Services Authority (OJK) regulations on financial technology, have become relevant legal bases to regulate the use of *blockchain*. (Hutagalung, E. R, 2024).

One of the most popular applications of *blockchain* is in *cryptocurrency*. The Government of Indonesia, through Bank Indonesia and OJK, has determined that *cryptocurrencies* are not legal tender in Indonesia, as stipulated in Bank Indonesia Regulation Number 18/40/PBI/2016. However, cryptocurrencies can be used as digital assets for investment under the supervision of the Commodity Futures Trading Supervisory Agency (Bappebti). Smart contracts that run on top of the *blockchain* have the potential to replace traditional contracts. However, the validity of smart contracts in Indonesia must meet the conditions for the validity of the agreement as stipulated in Article 1320 of the Civil Code, including the agreement of the parties and a clear object. More specific regulations are needed to ensure the validity and enforcement of smart contracts. (Marliyah, M., & Fuadi, F. 2021).

Blockchain uses a transparent and *immutable* system, which can cause problems related to data privacy. Law Number 27 of 2022 concerning Personal Data Protection (PDP Law) is the legal basis to protect *the privacy of blockchain users*. Blockchain technology developers must ensure that users' personal data is processed in accordance with the principles of personal data protection.

The Indonesian government has begun to explore the use of *blockchain* to improve the efficiency and transparency of public services, such as land registration and elections. However, the implementation of *blockchain in government requires a clear legal framework to govern the technical, governance, and data protection aspects*. *Blockchain technology* can revolutionize the logistics and supply chain industry by providing transparency and accountability. Fadri, Z., & Fil, S. 2024). In Indonesia, the application of *blockchain* in this sector still faces legal obstacles related to the validity of electronic documents, which are regulated in the ITE Law and Government Regulation Number 71 of 2019 concerning the Implementation of Electronic Systems and Transactions (PP PSTE).

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The main challenges in *blockchain regulation* in Indonesia include legal uncertainty, lack of understanding of regulators, and the risk of misuse of the technology. Without clear regulations, blockchain industry players face significant legal risks, including related to fraud, money laundering, and terrorism financing. OJK and Bank Indonesia play an important role in regulating the use of *blockchain* in the financial sector. Through a regulatory sandbox, these two institutions provide a space for developers to test technological innovations, including *blockchain*, before they are widely implemented. (Fitri, W. 2023).

Currently, there are several sectors in Indonesia that have already utilized blockchain technology, while the existing regulations only govern the financial sector. In fact, there is an absolute requirement that must be met in the use of blockchain technology, which is that the technology must first be recognized by law (the principle of legal certainty in the ITE Law)." (Lase, S. M. N., Adinda, A., & Yuliantika, R. D. (2021).

BAPPEBTI has the authority to regulate and supervise the trading of blockchain-based digital assets, including *cryptocurrencies*. BAPPEBTI regulations, such as Regulation Number 8 of 2021, provide guidelines for business actors related to registration, consumer protection, and transparency. In terms of taxation, the use of *blockchain* for digital transactions presents new challenges. The Indonesian government has imposed taxes on crypto asset transactions through PMK Number 68/PMK.03/2022, but the application of taxes to other *blockchain* technologies still requires further study. The lack of understanding of *blockchain* among the public and regulators is a major obstacle in the development of regulations. Collaboration between the government, academics, and industry players is needed to increase education and legal awareness related to blockchain technology.

Several countries, such as Singapore and Estonia, have developed regulations that support *blockchain* adoption. Indonesia can learn from these countries' approaches to creating progressive and inclusive regulations, while maintaining security and stability. To overcome legal uncertainty, the Indonesian government needs to develop specific regulations that include the definition, principles, and governance of *blockchain*. These regulations must also include aspects of consumer protection, data privacy, and technical standards.

Blockchain has great potential to drive innovation in various sectors in Indonesia. However, the development of this technology must be balanced with a clear and comprehensive legal framework. Regulations that support *blockchain adoption* will ensure that this technology can be optimally utilized, while protecting the interests of the public and preventing legal risks. (Afrina, C 2024).

4. CONCLUSION

Blockchain *technology* offers great potential to drive efficiency, transparency, and accountability across various sectors, including finance, logistics, and government. However, the implementation of this technology in Indonesia still faces a number of challenges, especially related to regulatory uncertainty, data security risks, and lack of understanding by the public and regulators. Therefore, the existence of a comprehensive legal framework is an urgent need to ensure *the safe and beneficial use of blockchain*.

The Indonesian government has taken the first step through relevant regulations, such as the ITE Law, the PDP Law, and BAPPEBTI regulations to oversee cryptocurrency as one of the applications of *blockchain*. However, more specific and comprehensive regulations are still needed to cover various aspects of blockchain, including smart contracts, consumer protection, and technology governance in the public and private sectors. In addition, education and collaboration between the government, academics, and industry players need to be improved to create an inclusive blockchain ecosystem.

In conclusion, *blockchain technology* can be an important pillar in digital transformation in Indonesia, as long as it is supported by the right regulations and readiness from all relevant parties. With a progressive and targeted approach, Indonesia has a great opportunity to become one of the countries that makes the most of *blockchain technology*, while maintaining security and protecting people's rights.

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