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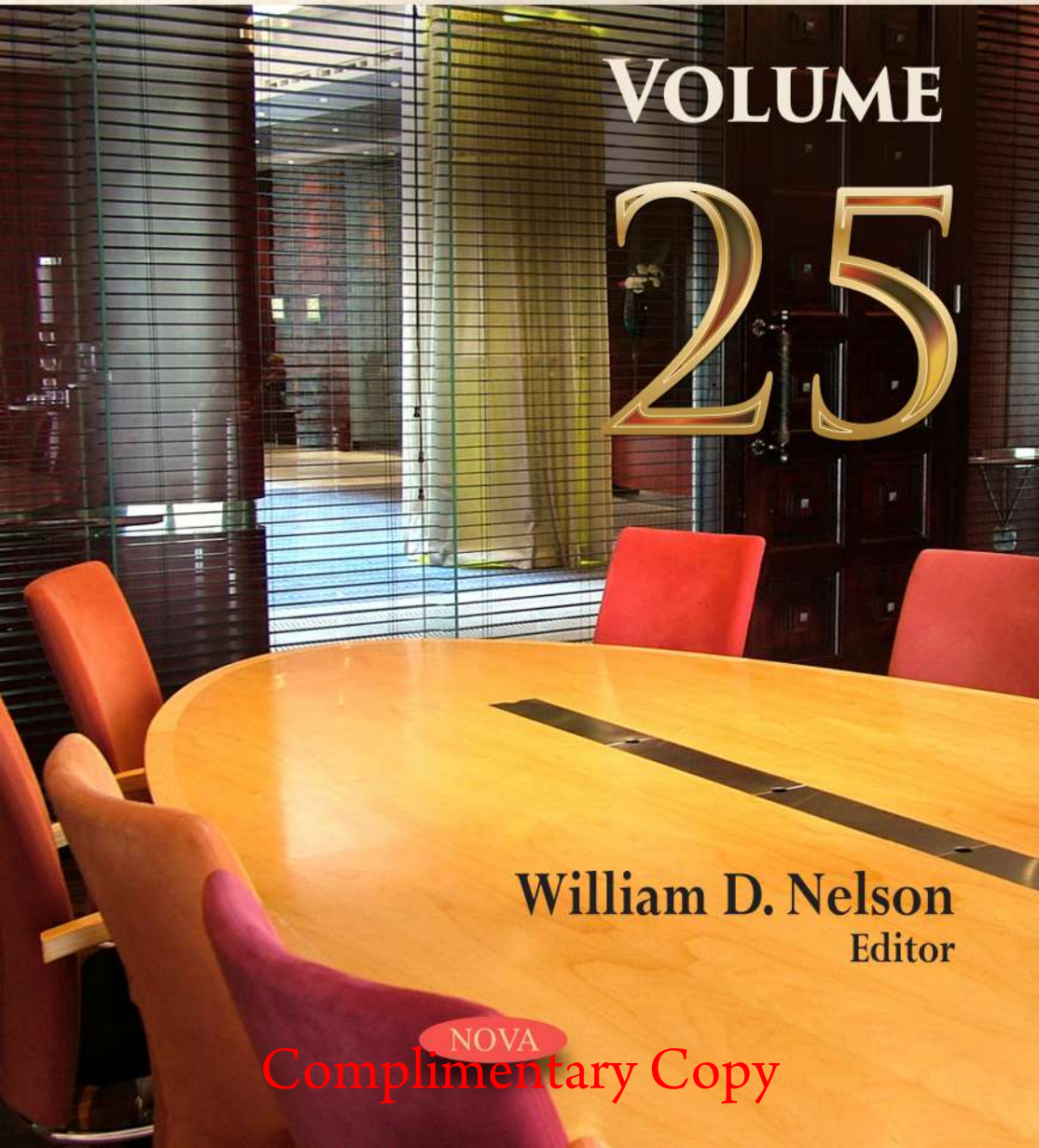

Volume 25

William D. Nelson
Editor

NOVA

Advances in Business and Management

Advances in Business and Management

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eBook ISBN: 979-8-89530-127-2

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ISBN: 979-8-89113-795-0
eBook ISBN: 979-8-89113-933-6

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ISBN: 979-8-89113-525-3
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eBook ISBN: 978-1-68507-877-5

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Advances in Business and Management

Volume 25

DOI: https://doi.org/10.52305/OJLG4208

NOTICE TO THE READER

Library of Congress Cataloging-in-Publication Data

ISBN: 979-8-89530-246-0 (Hardcover)
ISBN: 979-8-89530-334-4 (eBook)
ISSN: 2159-9335

Published by Nova Science Publishers, Inc. † New York

Contents

Preface

This book focuses on advances in business and management. Chapter 1 aims to establish the theoretical foundations of meaningful learning and creativity to promote the teaching of artificial intelligence, based on a constructivist pedagogical model, and to outline the implications of this model. Chapter 2 utilizes a qualitative methodology to conduct a systematic literature review of journal articles published in the Scopus Index. Chapter 3 investigates the impact of adopting sustainable production practices by businesses on consumer behavior in the UAE. Chapter 4 analyses the potential of implementing a blockchain system on a securities platform for Islamic crowdfunding. Chapter 5 focuses on tourism development in community-based fisheries in Indonesia. Chapter 6 aims to construct a model for developing extra-role behavior in Generation Z employees by leveraging employer branding and perceived organizational support, with organizational commitment serving as a mediator. Finally, Chapter 7 examines the Blue Ocean Strategy, a strategic framework proposed by W. Chan Kim and Renée Mauborgne, exploring its potential as a transformative strategic approach versus a passing management fad.

Chapter 4

Potential Implementation of the Blockchain System in Islamic Securities Crowdfunding

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Abstract

Islamic Securities Crowdfunding (ISCF) is a crowdfunding method for MSMEs or start-ups, where investors obtain ownership in the form of securities based on Islamic principles. With the large amount of funds collected, it is necessary to increase data security and data transactions; however, the system implemented by the platform is still centralized so that cybercrimes can occur that threaten personal data or funds. This chapter analyses the potential of implementing a blockchain system on a securities platform for Islamic crowdfunding. It presents the mechanism of the blockchain-based ISCF system in terms of security, reporting, integration of Islamic values, and the role of the Indonesian Central Securities Depository (KSEI). The potential for implementing blockchain-based ISCF, its benefits, and barriers to implementation are outlined.

Keywords: securities crowdfunding, blockchain, Islamic securities crowdfunding

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In: Advances in Business and Management. Volume 25
Editor: William D. Nelson
ISBN: 979-8-89530-246-0

Introduction

The technological development that will be the hottest topic of discussion in Indonesia is financial technology (fintech), which is the result of a combination of financial services and technology that changes the conventional model to a moderate one (Basya et al., 2020). The application of financial technology creates a disruptive environment in line with the rapid development of technology and digitalization. In this situation, it is estimated that there will be many changes that we will experience directly; for example, in carrying out financial transactions, utilizing financial products and services, or finding sources of funding for economic activities (Winarto, 2020). Islamic financial technology has begun to attract attention, especially among Indonesians (Majid and Maulana, 2023).

Crowdfunding is one of the most successful technology-based initiatives of the financial technology revolution. Crowdfunding is predicted to be a financial technology application that can eliminate the position of financial intermediaries (Lukita et al., 2022). As a regulator of fund management activities in Indonesia, the OJK issued regulations on crowdfunding through POJK Regulation No. 37/POJK.04/2018 on Crowdfunding Services through information technology-based securities offerings. Equity crowdfunding is the best-known term for equity crowdfunding (Edward et al., 2007). In its implementation, OJK No. 37/POJK.04/2018 has some shortcomings. In 2020, OJK refined equity crowdfunding into securities crowdfunding (SCF) based on Financial Services Authority Regulation Number 57 of 2020 on crowdfunding services through information technology-based crowdfunding services (Ramadhani & Dirkareshza, 2021).

Thus, the crowdfunding market is high. Startups began to emerge, and started businesses using crowdfunding platforms. However, there are significant risks associated with these benefits. Blazinsky (2022) mentioned that OJK felt the need to amend Financial Services Authority Regulation No. 57/POJK.04/2020 to become Financial Services Authority (OJK) Regulation Number 16/POJK.04/2021. On the other hand, Fahmy and Zahra (2023) see concerns that parties will become trapped between interests and rights, resulting in the agreement becoming an unfair contract. In line with this, Aprialim et al. (2021) state that crowdfunding platforms currently used by the public have a centralized system. Although this system can operate well, the need for third parties in a centralized system makes the data security and transparency of fundraising activities not fully achievable (Majid, 2024).

Blockchain was first developed by Satoshi Nakamoto in 2008 (Akbarpour, 2019). The blockchain system has changed from a centralized approach to a decentralized one. Blockchain is an open-source platform predicted to replace many of the world's functions and technologies with new models. Blockchain changes centralized recording into distributed recording so that the server is not centralized, but distributed to its users (Nurdany et al., 2022). The presence of a blockchain system can increase security by automatically encrypting and validating data to protect sensitive data and reduce fraud risk by eliminating intermediaries and automating the process. The blockchain system can ensure accurate and transparent financial transactions so that costs can be cheaper, because it reduces the role of the Indonesian Central Securities Depository (KSEI) as a third party in securities transactions.

This phenomenon is the starting point of writing a chapter that seeks to answer several questions: How does the transaction security system in Securities Crowdfunding (SCF) apply the blockchain system, and how do the regulations, opportunities, and schemes created by the blockchain system apply to the SCF transaction system? This chapter is divided into several sections. First, it examines the background, phenomena, and literature related to disruptions, SCF, and blockchain. The second section presents the proposed blockchain-based ISCF platform. Third, we discuss methods to validate the proposed model. Finally, the discussion answers these questions. Finally, conclusion. Overall, the aim of this chapter is to propose blockchain-based ISCF.

Disruptive Innovation

Christensen (1997) introduced the term Disruptive Innovation to explain the failure of companies to remain at the top of their industry in the face of market and technological change. The company was well managed, had a highly competitive 'antenna', listened carefully to customers, and invested aggressively in new technology. However, the company still loses market dominance. According to Christensen (1997), there are five principles of Disruptive Innovation, one of which is directly related to technology, namely, Technology Supply May Not Equal Market Demand.

Rahayu and Astuti (2022) describe a crowdfunding platform as disruptive innovation. The platform has the potential to disrupt established commercial banks. Crowdfunding replaces the risk model in funding businesses by

spreading risk to a larger group. This is different from the risk model of traditional banking, which bears risk alone.

Blockchain is also seen as part of disruptive innovation in the financial services industry (Lokhande and CHS, 2021). Blockchain has transformative potential and the ability to overcome external challenges faced by the traditional financial system, including inefficiencies. Blockchain can revolutionize the financial services industry by providing transparency, decentralization, security, efficiency, cost reduction, and innovative solutions that challenge traditional business models and practices.

The Role of Regulation in the Digital Economy

Regulations in the economy can be designed, enacted at the instigation of, or compelled by, industry (Stigler, 1971). Economic regulations are institutionalized with the aim of protecting and benefiting society. Economic regulations can also be created because of the political processes that develop in a region. Driven by this cause, economic regulations that are already in place can be changed. A change in regulation is called deregulation, which is an institutional change in regulation that requires a new legislative initiative to reverse the situation (Peltzman (1989).

Deregulation can occur because regulations are outdated, and therefore fail to protect consumers from possible risks (Edelman and Geradin, 2016). In the digital age, deregulation is possible owing to the emergence of increasingly innovative digital platforms. In Indonesia, in particular, there are no regulations on blockchain management. The lack of regulations related to blockchain could be a new disruption to the centralized supervision of financial transactions by OJK and KSEI.

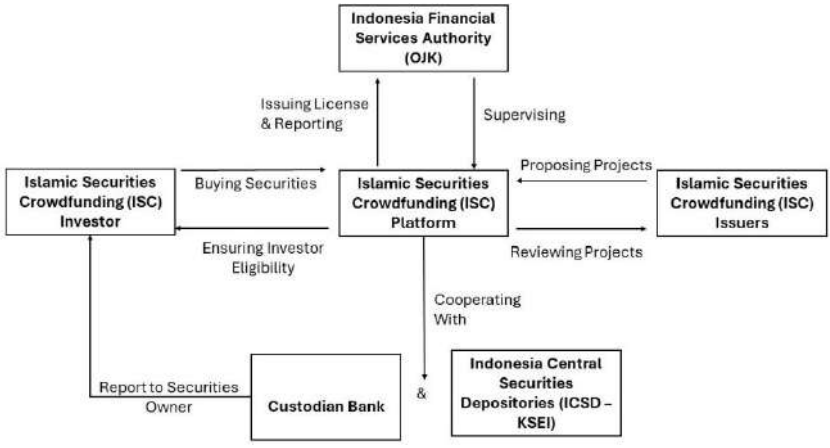
Current Securities Crowdfunding (SCF) System

Crowdfunding is a forum for collecting funds that appeal to the public, usually via the internet, to provide financial resources, either in the form of donations, rewards, or voting rights, to collectively support efforts to achieve certain goals. This platform is a financial innovation that uses technology to facilitate donations and provide financing solutions for startups and MSMEs with functions such as banks and cooperatives (OJK, 2020). The concept of crowdfunding was first coined in the United States in 2003 with the launch of

a site called Artistshare. At this site, musicians attempt to raise funds from fans to produce work. Crowdfunding can be divided into four types: donation, reward, debt, and equity (Majid and Nugroho, 2022).

SCF is the development of an equity crowdfunding scheme by expanding its scope to include all MSMEs that are not required to be legal entities (Hakim et al., 2022). The main objective of SCF is to provide alternative funding for MSMEs and start-up business actors in order to obtain funds through the capital market. SCF is a new form of equity crowdfunding that is useful for addressing the concerns of crowdfunding actors such as publishers, organizers or platforms, and financiers. (Edward et al., 2007).

Ramdania et al. (2022) stated that several parties are involved in implementing Islamic securities crowdfunding (ISCF), as shown in Figure 1.



Source: Ramdania et al., 2022:36.

Figure 1. Securities Crowdfunding (SCF) Scheme.

Referring to this scheme, the supervision system is carried out by OJK through KSEI, so it is considered less effective with such a long flow and less efficient because MSMEs or Start-Ups must pay first to KSEI to enter the crowdfunding ecosystem; then, the OJK supervision system uses a market conduct scheme. as stated inside OJK (2023) stated that OJK supervises platform behavior through proactive, reactive, and thematic supervision in the sense of monitoring and handling processes when only receiving complaints from consumers. Many researchers want to apply the blockchain system in securities crowdfunding so that transactions are more effective, efficient, and make it easier for the OJK to carry out supervision.

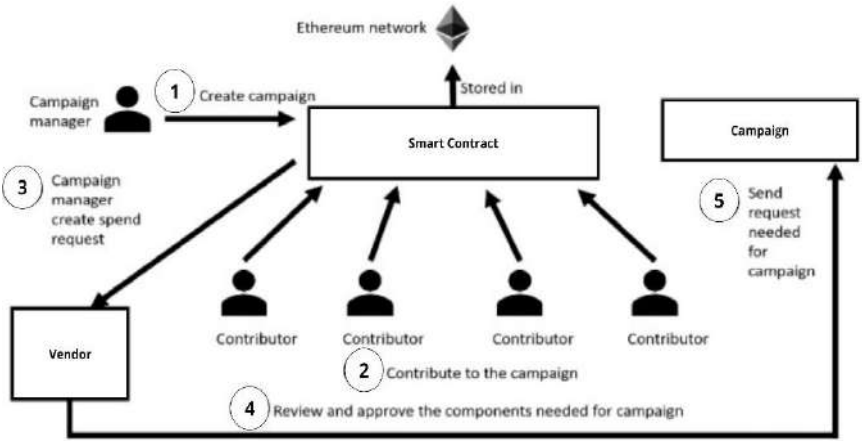
Current ISCF Security and Reporting Mechanism

The system currently run by the ISCF platform covers security with more than five security and ISO 270001 implementations to anticipate cybercrime, which threatens investor data and affects transactions. To implement the transparency functions of ISCF, they regularly report to investors and OJKs related to the project, which OJK also checks. Every transaction from the beginning of the submission to liquidation is supervised by a board of supervisors on the Sharia platform to keep it in accordance with the principles of Islam. The role of KSEI as a third party in securities transactions is crucial for the storage and settlement of securities and increases public confidence in investing. This is in accordance with the regulation of OJK No. 57 of 2020 on Offering Effects through Information Technology-based Fund Management Services (OJK, 2020a).

Blockchain System

A blockchain is a distributed/decentralized database that uses independent nodes to store and retrieve data. The blockchain technology connects data blocks sequentially in a distributed ledger. Each block stores various content, including the "hash," which is the unique identifier of the block itself. The hash identifies and links this block to all blocks, both the previous and subsequent blocks. (Utomo, 2021) Thus, it can be concluded that blockchain is a collection of blocks containing transaction data that are linked (chain) and sequenced. Blockchain can be considered a digital data storage system in which each new block or the most recently connected block must have hash information (hash = alphanumeric code that represents a word, message, or data) from the previous block. Each block refers to a previous block that formed a chain.

Saadat et al. (2019) explain that one area where blockchain can be implemented through crowdfunding platforms. Most crowdfunding platforms are centrally based. This could potentially lead to further problems. Blockchain can solve crowdfunding problems such as fraud, money laundering, and information asymmetry (Lokhande and CHS, 2021). Data on the blockchain is transparent, and investors can check the data on the block against the authenticity of the project. The blockchain implementation scheme for an SCF is illustrated in Figure 2.



Sources: Saadat et al., 2019: 412.

Figure 2. Securities Crowdfunding (SCF) Based Blockchain System Scheme.

An Ethereum blockchain can be integrated into a smart contract. A detailed agreement or contract that binds the parties is stored in a blockchain system. This is in line with the development of regulatory technology (RegTech). Therefore, regulations can be created across jurisdictions, formats, and languages. Of course, this can help bring transparency to Islamic finance (Fachsandy et al., 2023).

Potential Blockchain System in ISCF

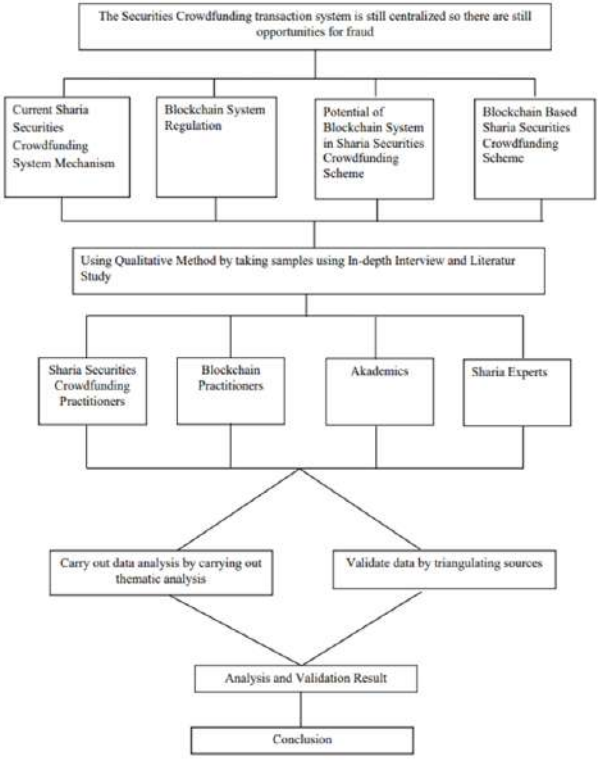
The existence of a blockchain system does not violate the Sharia principles. Blockchain is a database system that can help ISCF more efficiently. This refers to the foundation of openness in the blockchain, which can be a solution for ISCF to increase the effectiveness and efficiency of transactions on any platform (Guggenberger et al., 2024). Zhu (2016) supports the argument that blockchain technology-based SCF can streamline SCF by proposing secure registration, simplifying transactions, and empowering peer-to-peer investment and voting rights for investors every time an annual general meeting is held. Finally, this system improves regulatory supervision by OJK and KSEI (Zhu & Zhou, 2016).

The blockchain-based ISCF can solve almost all ISCF problems. Several obstacles must be overcome in the implementation of blockchain-based ISCF. These include developer costs (Zarir et al., 2021), infrastructure related to energy consumption (Sedlmeir et al., 2020), and the systems and education of

actors (Schuetz, 2020). Constraints must be overcome for the system to function optimally and provide benefits to financial institutions and users, especially ISCFs.

Proposed ISCF Scheme Based on Blockchain System

The blockchain-based ISCF system must be integrated and vetted by regulators to ensure decentralization (Collomb, 2019). Practitioners operate the system in accordance with the Sharia principles. A Sharia supervisory board is required to oversee the operational processes of practitioners (Muryanto, 2023). The cost of the system consists of development costs charged to the platform and administrative costs charged to investors and issuers. This system is easier for users to understand than previous systems.



Source: Data processed by the author.

Figure 3. The Framework of Proposed Blockchain Based ISCF

Validating the Proposed Blockchain-Based ISCF Model to Experts

This chapter explores how blockchain technology can improve ISCF. The current system is centralized and fraudulent. Blockchain, with its decentralized nature and tamper-proof records, has been proposed as a potential solution to improve crowdfunding practices. A presentation of this proposal is shown in Figure 3. The process of validating the proposed blockchain-based ISCF was conducted through expert interviews with ISCF practitioners, blockchain experts, Sharia experts, and academics in the digital field.

Discussion

Security System in the Current ISCF Scheme

The study of the system in the current ISCF found four major points: the data and transaction security system, the reporting system, the integration of Shariah principles, and the role of KSEI as a third party in transactions.

Data Security System and Investor Transaction Funds in the Current ISCF

A security system is a series of mechanisms that ensure the integrity of the data of investors and entrepreneurs. The security system was designed to maintain the security of transactions by investors and entrepreneurs. The system aims not only to secure data and transactions, but also to maintain the transparency and stability of securities to anticipate fraud, hacking, and misuse of data and funds.

Academics, blockchain practitioners, and Sharia scholars share the same view that ISCF needs to maintain data and transaction security. Security is performed by establishing a security standard operating procedure (SOP) for the platform, determining the SME assessment score, implementing the ISO 27001 system, implementing data encryption, and maintaining database security and payment processes for investors.

ISCF practitioners emphasize the security of investor data and transactions that must be carried out in layers to anticipate system hacking, database maintenance, and synchronization with funding when needed or in contact with the KSEI. System security is carried out by implementing an ISO

27001 system that has been tested by OJK, cloud-based system protection with a recovery plan, application of encryption to every data, application of penetration testing by web hackers, and use of a custodian bank.

Data security and transaction funds implemented by the ISCF are layered for anticipated hacking with database maintenance and synchronization with the KSEI. This is in accordance with the regulation of OJK No. 57 of 2020 on Offering Effects Through Information Technology-Based Fund Management Services in the list of readiness lists of infrastructure for electronic systems and operational data activities that the platform must complete before obtaining permission from data centers, recovery systems, security systems, and monitoring (OJK, 2020a).

Reporting System in the Current ISCF System

The ISCF Reporting System is a set of systems that presents all the information that must be communicated to some parties, such as investors, issuers, and regulators. This system serves as a supervisory advocate for the platform and OJK. The purpose of this system is to act as a form of platform transparency to protect the rights of investors and help the platform in its supervision function.

The reporting techniques were performed in accordance with each platform. Platform features always update the use of funds and reports from issuers. Reports are sent regularly by the platform via email to investors and OJK. Reports are in the form of notifications related to securities and use of customer funds. In addition, ISCF reporting uses a website feature that investors can access. The same was also reported for OJK.

Reporting is in line with the ISCF module guidelines for investors proposed by Fahmy et al. (2022). In this case, organizers should include reports from issuers to be published on the platform's website and monitor issuers in the production of these reports. These are also covered in POJK No. 57 on Offering Effects Through Information Technology- Based Fund Management Services in Section 7 on Reports of Sections 22–26, which mention the three types of reports to be submitted by the platform or organization, namely the mid-year report, annual report, and incidental report, with the terms of the content of the report (OJK, 2020a).

Integration of Sharia Values in ISCF

The integration of Sharia values in the ISCF is performed by applying Sharia values to transactions. This aims to ensure that the ISCF runs in accordance with Sharia and Halal guidelines. It is important to note that the Sharia legality

of the ISCF must be validated by the DSN MUI. Another issue is the criteria for issuers aligned with sharia and accents that are confirmed according to the sharia.

Sharia values must also be integrated into corporate culture. The company's culture must reflect an Islamic environment for all stakeholders. The verification process of the company must also be in accordance with the criteria set by the DSN-MUI. Each Sharia platform must have a Sharia supervisory board whose task is to oversee the platform's operations so that they are always in accordance with Sharia principles. In general, the integration of Sharia values in the ISCF was performed. Among these are legal entities, systems, contracts, project objects (products), and operations. The reference on which the integration relies is the Fatwa of the DSN-MUI (National Sharia Council of the Indonesian Ulema Council) and POJK. The Sharia supervisory board (OJK, 2022b) controls integration activities.

The Roleplay of KSEI in ISCF Transactions

KSEI is the central custodian of the effect, which is a third party in transactions that stores and settles the transaction of the effects. The KSEI is self-regulatory and is under the OJK to help monitor and guarantee securities. The role of KSEI as a third party in transactions of effects is very important. Based on regulations, KSEI is the custodian who stores and completes transactions. KSEIs are an extension of the OJK hand, which will improve data and transaction security, as well as increase the confidence of investors to invest. The functioning of KSEI as a depository and settlement can increase investor confidence in investing. The role of KSEI is stated in POJK Number 3/POJK.04/2021 concerning Field Implementation in the Capital Market in Chapter 3 Articles 17-29 which discuss the requirements and functions of KSEI as a depository and settlement of trading securities (OJK, 2021).

Potential Implementation of the Blockchain System in ISCF

Some believe that blockchain has considerable potential for application in ISCF. The benefits and capabilities of the system are considered to increase the effectiveness and efficiency of ISCF. Others, however, responded to a pessimistic attitude. The issue of applying blockchain to ISCF is still less discussed. Another reason is that there are no regulations governing this in

Indonesia. The absence of regulations affects the operation of the platform and the protection of investors' interests.

The potential application of blockchain systems to ISCF remains neutral. The decentralized capability of the blockchain system is helpful for ISCF. However, the lack of legal support for blockchain systems makes ISCF actors hesitant. This is in line with the finding of Harahap et al. (2020) that the potential for the application of blockchain technology in the economic sector is quite large. Blockchain offers a more efficient and rapid solution than conventional transactions. Blockchain can enhance the development and advanced. The same thing was conveyed by Muneeza et al. (2018), blockchain is a decentralised and distributed bookkeeping technology to ensure security, transparency, and data integrity that cannot be tampered with or falsified. Blockchain has great potential for applications in the financial industry.

Benefits of the Blockchain System from a Sharia Perspective

The blockchain system was previously used to support cryptocurrency transactions. This system is estimated to provide many benefits to cryptocurrency investors (Akbarpour, 2019), but its value is still illegal in Islamic countries. The presence of a blockchain system in an ISCF raises both the pros and cons. Some argue that blockchain does not provide benefits from the Sharia perspective. Others argue that blockchain systems provide the benefits of transparency, increasing the effectiveness and efficiency of the platform. Therefore, blockchain does not contradict the Sharia principles. Regardless of the debate, blockchain makes the system more open and secure. Blockchain does not break sharia transactions, thereby increasing platform efficiency.

The presence of a blockchain system in an ISCF raises both the pros and cons. Some argue that blockchain does not provide benefits from the Sharia perspective. The blockchain is in a gray area, which contains elements of uncertainty. The use of blockchain in the ISCF platform, which is feared, damages transactions from the Sharia perspective. Another point of doubt is that there is no regulation governing the blockchain for SCF. Others argue that blockchain systems provide the benefits of transparency, thereby increasing the effectiveness and efficiency of the platform. Therefore, blockchain does not contradict the Sharia principles.

Regardless of the debate, blockchain can make a system more open, but it must be supported by a security system. The blockchain system is decentralized, so it is more transparent and in line with the Sharia principles. Septianda et al. (2022) mentioned that blockchain is a positive step in the

Shariah financial sector as a guarantee that the offer of financial service providers is implemented in accordance with Shariah standards. The Smart Contract feature can reduce the uncertainty and speculation in a contract. Similarly, Pangestu (2023) states that blockchain technology, in its transparent nature, can help reduce ambiguity and uncertainty in financial transactions as well as avoid gambling and speculation practices that do not conform to Sharia principles.

Blockchain is a Solution to the ISCF Problem

Not all ISCF issues can be addressed using blockchain. The problems of risk assessment, issuer verification, and investment liquidity risk in the ISCF cannot be fully addressed through blockchain. However, blockchain systems offer innovative solutions for solving problems on the ISCF platform. Bahauddin (2019) mentioned that the application of blockchain technology using smart contracts on the ISCF platform can help funders identify, check, and track the flow of funds channeled to fund seekers through the platform. In line with Bahauddin (2019), Rafiqi (2022) argued that the application of blockchain technology provides many benefits for agencies and companies, especially the financial sector. These benefits include increased efficiency, transparency, and validity of records; increased data integrity in terms of minimizing losses; faster processing and services; and higher capital and cost efficiency.

Challenges of Integrating Blockchain to ISCF

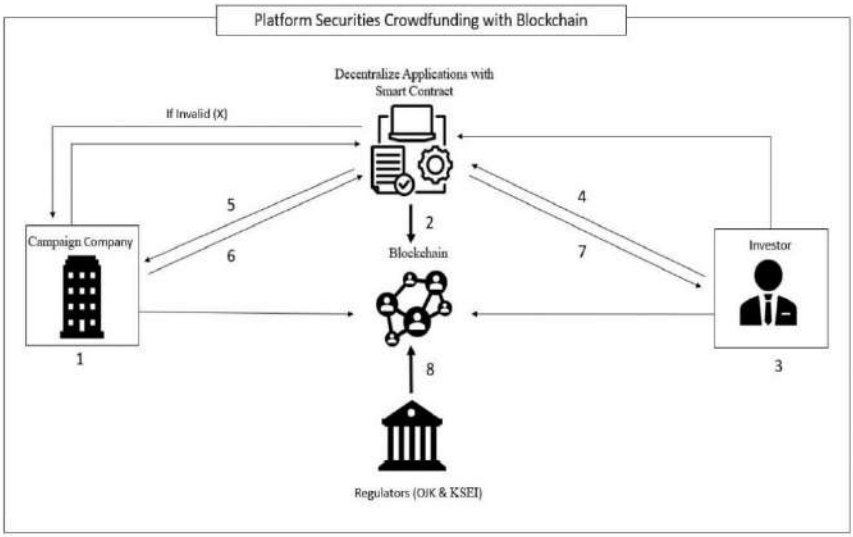
Christensen (1997) states that disruptive technology, which, in turn, becomes disruptive innovation, does not arise by chance. Disruptive innovation emerges as a response to the use of the latest business technology. The absence of a response to disruptive technology makes it debatable, and the development and improvement of the technology have been carried out (Hamid, 2017).

The blockchain system is a new technology that was previously a cryptocurrency transaction system but is being challenged to enter financial institutions, particularly the ISCF. Of course, this system will face obstacles in its implementation. It is also a countermeasure to the potential ratio of the blockchain if applied to the ISCF. There are obstacles to implementing blockchain, including high installation costs, lack of knowledge, unsupported infrastructure, system operationalization, and the absence of regulations governing the system. However, obstacles are not barriers to the implementation of blockchain-based ISCF.

The cost of installation is the main obstacle to its implementation. This is in line with the findings of Indraprakoso and Haripin (2023). He mentioned that the cost of implementing the blockchain technology is significant. The cost not only covers the initial investment in infrastructure and software but also the costs of sustainable maintenance and training.

Blockchain-Based ISCF

An overview of the blockchain system scheme in the ISCF is the workflow of the effect transactions used in the ISCF using a blockchain system. The scheme refers to the implementation of the blockchain system such that the functions and features of the system can be exploited by the ISCF. The role of the regulator in this scheme as a supervisor remains important. KSEI is a supervisor in the scheme. To ensure that this scheme is also running smoothly, this schema must pass prior permission from the OJK. Blockchain-based ISCF schemes must be truly decentralized by eliminating third parties. The blockchain-based ISCF scheme is illustrated in Figure 4.



Source: Data processed by the author.

Figure 4. Overview Scheme ISCF Based Blockchain System.

6. The publisher has a project that requires funding. The publisher attempts to access the ISCF platform by entering the project into a decentralized application. The publisher can also directly access the blockchain. The data will be stored for verification using the platform.
7. The project passed the verification phase through the platform. If it is invalid, it is returned to the publisher. Thus, the project status in the blockchain was rejected. If valid, there will be an agreement for the smart contract that will be forwarded to the blockchain, and the status of the project will be verified and ready to be funded.
8. Investors will be able to see the project and its status through an application or blockchain, but the one that can be funded is the one that has been verified.
9. If an investor is interested in a project that has been verified, they are ready to fund. The funds are then sent to a decentralized platform. The investor gains the amount of effect according to the funds invested, which is then held in the smart contract until the fund agreement is fulfilled later.
10. If the funds in the smart contract are already in line with the agreement, they are sent automatically to the publisher for the progress of the project. The project will create a report in accordance with the platform format and send it to a decentralized application, which will be forwarded to the blockchain.
11. The project is completed, the publisher will distribute the results.
12. The platform distributes securities to investors according to the amounts and conditions stated in the smart contract.
13. All records and transaction flows are recorded and monitored by investors and companies and cannot be deleted according to the characteristics of the blockchain system.

Integrating Sharia Principles into Blockchain Systems

The integrity of blockchain-based ISCF must integrate the principles of Sharia into it. Integrating such a need for special steps to ensure that the blockchain-based ISCF conforms and runs with principles. There are some specific steps to ensure that blockchain-based ISCF is in line with Sharia principles. Blockchain schemes must first be checked for illegal elements. It also needs to be checked against bottlenecks when incorporated into the system. Furthermore, the operation of the scheme should be monitored against any contravention of the Shariah principles by the Shariah Supervisory Board.

Two important activities require monitoring by the Sharia Supervisory Board: campaign verification and smart contracts. The campaigned project must fulfil the Sharia principles. If the project does not conflict with the Sharia principles, the platform criteria can be opened for funding. Each project has its own type and function. This determines the contract that will be agreed upon by the parties. The contract is checked and determined in accordance with the smart contract. Smart contract design should be in accordance with the principles of Shariah. Supervision and verification were performed by Sharia authorities, and Sharia audits were carried out by independent parties (Pangestu, 2023).

Regulatory Implications of Integrating Blockchain into the ISCF

The existence of regulations is important in implementing new systems, especially in financial institutions. This is the case with blockchain, which is new to society. Therefore, regulations are required when implementing blockchain in the financial sector. Regulation is also needed to clarify the relationship between blockchains. Boundaries that separate blockchain from cryptocurrencies. Blockchain systems in financial institutions must be regulated. Regulations that regulate the activities of blockchain systems. The Government of the Republic of Indonesia, through the Ministry of Communication and Information Technology, has conducted studies related to technological developments, including big data, artificial intelligence, blockchain, and financial technology. These four technologies have brought new opportunities and challenges to the socio-technical aspects of Indonesia. The existence of opportunities and challenges requires the government to issue policies that can optimize the potential of technology. Of course, the development of these four technologies has both positive and negative risks (Director General of Informatics Application, 2018).

The Future of OJK and KSEI's Role with the Presence of the Blockchain System

Referring to existing developments, some parties argue that the existence of blockchain for financial transactions, especially blockchain-based ISCF, is not necessary. However, others argue that the presence of blockchain schemes can help KSEI and OJK oversee the activities of blockchain-based ISCF.

Blockchain implements decentralization by eliminating third parties in the transaction flow. Blockchain plays the same role as KSEI as a depository and

settlement institution for securities transactions. If blockchain is applied to the financial system, the role of KSEI will likely be replaced by a blockchain. However, given the high risk of financial transactions, especially those involving the public, some argue that KSEI is still needed. Blockchain plays the same role as KSEI. However, in practice, there are issues that cannot be replaced by a blockchain. Among these roles is the supervision of dispute resolution that may occur. Therefore, the existence of a KSEI is still required if a blockchain system is implemented.

Blockchain has functions beyond transactional storage and execution. A blockchain can maintain data security and track the flow of funds. All the activities in the blockchain can be monitored to ensure transparency. A blockchain system features immutable records that cannot be altered at any time. This means that blockchain can track the flow of funds from investors. This condition can minimize fraud committed by both the organizer and the investor. Therefore, blockchain has a role similar to that of OJK, namely, the supervisory function of financial institutions. As with KSEI, blockchain cannot fully replace OJK's functions. The function of imposing sanctions or penalties and their follow-ups cannot be replaced by a blockchain.

Blockchain is suitable for improving compliance processes (Drori (2019). Blockchains can be used to assist compliance officers. Financial transactions that correlate with complex regulations can be tracked using blockchain. Specific blockchain-related regulations for financial transactions have not yet been established. However, OJK issued POJK No. 13/2018 on Digital Financial Innovation. This proves that OJK is open to digital financial innovations. Thus, there is a need for deregulation that specifically regulates the use of blockchain in financial transactions, especially blockchain-scheme-based ISCF. The roles of KSEI and OJK as supervisors of financial institutions and transactions will become more optimal with this system.

Conclusion

The current ISCF platform includes five security levels. The ISCF also implements ISO 270001 to anticipate cybercrime that threatens investor data and securities transactions. In carrying out the transparency function, the ISCF regularly provides reports to investors and OJK via email and websites. Every transaction, from submission to liquidation, is supervised by the Sharia supervisory board. The role of the KSEI as a third party in securities

transactions is very important for security custody and settlement to increase public confidence in investing.

Blockchain-based ISCF has great potential for implementation, although some parties are still concerned about the risk aspect. The presence of blockchain-based ISCF is believed not to violate Sharia principles. Blockchain-based ISCF has a foundation of openness, which increases the effectiveness and efficiency of transactions on any platform. Several obstacles need to be overcome, including development costs, inadequate infrastructure, and education for actors.

OJK issued POJK No. 13/2018 for Digital Financial Innovation. OJK is open to digital financial innovation. There is a need for deregulation that specifically regulates the use of blockchain in financial transactions, especially blockchain-based ISCF. The roles of KSEI and OJK as supervisors of financial institutions and transactions will become more optimal with this system.

Disclaimer

None.

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