

Using Blockchain Technology to Revolutionize Waqf: The Finterra Waqf Chain Model

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Abstract:

Blockchain is one of the most promising technologies in the financial system, carrying the potential of reducing corruption, ensuring speedy and safe transactions and exchanges, and eventually assisting in risk management within the interconnected world financial system. This paper aims to provide insights into the potential of Blockchain to change WAQF application by presenting Finterra as a FinTech company that provides a platform that could bring multiple parties in contact with Waqf managers.

The Finterra WAQF Chain platform is an online resource for social crowdfunding that employs Blockchain notions and solutions. Finterra succeed to find solutions to the issues of poor management, liquidity, and uncertainty of the old Waqf properties that have been placed in an idle state via its WAQF Chain platform, it also adds an extra element of openness and assurance through feedback.

Keywords: Blockchain; WAQF Chain; FinTech; Islamic Social Finance; Endowment; Finterra.

JEL Classification: A13; O35.

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Introduction

Islamic social finance is currently regarded as the most important feature of Islamic finance and economics. This sector is primarily characterized by several instruments, including waqf, which is gaining in popularity. Islamic Endowment or usually known as “waqf” is described as the confinement of the asset so that it is not disposed of by sale, gift, or inheritance, and directing its gains to a destination of righteousness. waqf has wide economic implications and can play an important role in increasing social welfare.

Islam delegates to Muslims to endowment because of the great interests that this entails, and many benefits as it establishes the values of solidarity, brotherhood and love among the classes of society, by providing permanent fixed financial resources of funding that achieves private interests and public benefits, With the participation in various economic, social, cultural, educational and other development processes, which reduces the burden on governments, especially those that suffer from deficits in their budget, and fills the void left by some countries in the field of care and services.

Although the endowment framework and process have existed since Islam's inception, it has been affected by several problems, including weak asset management, transparency, accountability, and incompetence. However, due to poor management, many waqf assets are underutilized and receive low returns, with some endowments needing additional donations to stay afloat. Donations must be committed to clear targets, making it almost impossible to repurpose a waqf. This also restricts fundraising from banks, which would struggle to liquidate such properties. And, when considering the various factors affecting endowment documents in the Islamic world today, ranging from delays in archiving, communication, and registration systems in endowment departments in some cases to the possibility of document manipulation, concealment, or falsification from various parties in others, In addition to the benefits that blockchain technology experts discuss, such as its credibility, openness, accuracy, speed of deployment, and cost savings, The use of blockchain technology could solve this by electronically monitoring each contract during the investment's life cycle.

Many Islamic finance experts believe that blockchain could be used in the waqf system to improve trust between society and government. Within that case, blockchain technology allows for responsible and transparent crowdfunding. As a result, Islamic social finance may play a significant role in bridging the gap between rising humanitarian needs and budget

constraints. Finterra, a Singapore-based financial technology firm, has created a crowdfunding platform that employs blockchain technology to build "smart contracts" tied to unique waqf ventures. The company hopes that this will make it easier to collect funds, administer waqf, and pass control of social projects such as mosques, colleges, and welfare systems. Finterra's plans represent a desire by several fintech firms to extend their reach into the main Islamic finance markets.

In this study, we are simply highlighting the potency of blockchain in managing the Islamic endowment, by evaluating the Finterra Waqf Chain model. The main objective was to define: **How the blockchain of Finterra Waqf Chain supports the raise of capital WAQF development?**

The following are some of the sub-questions that can be posed in this context:

- What is the purpose of the WAQF chain? And how does it work?
- What are the advantages of the WAQF chain?
- How can Finterra make use of the instrument's relevance to develop Islamic Finance elements?

This study provides greater knowledge of waqf blockchain among academics, regulators, and practitioners. which will help them realize its promise and overcome the obstacles that lie ahead. It might lead to the development of new business models, apps, or services, all of which would have a significant impact on Islamic financial markets and institutions

The rest of the paper is organized as follows. Section 2 discusses the previous research. Section 3 presents and evaluates the Finterra Waqf Chain Model. Section 4 concludes the paper.

2- Literature of Previous Studies:

Understanding how digital Waqf works begins with understanding the fundamentals of blockchain technology. According to (Ducree, 2020), the word "blockchain" refers to the grouping of digital currencies into data blocks that provide a unique, complicated trail ("hash"/"Merkle tree") of their forerunners. (Voshmgir, 2020, p. 60) defined Blockchain as a distributed, trustworthy, accessible ledger of transactions that anybody can view but no single person has control over. It's a distributed database that keeps track of a growing list of transaction data records and protects them from manipulation and alteration using cryptography. While (Tschorsch & Scheuermann, 2016) believe that Distributed ledger technology is another name for blockchain technology. It enables participants to protect transaction settlement, complete transactions, and transfer assets at a reasonable cost. (Crosby, Nachiappan, Pattanayak, Verma, & Kalyanaraman, 2016) were one of the first to learn about the blockchain,

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which he termed as a distributed database that contains records of completed transactions or digital events that are shared among participants. Each of these transactions is confirmed by the agreement of a majority of the system's members. According to (Guang, Bing, Manli, & Nian-Shing, 2018, p. 4) Blockchain technology has four technological characteristics: immutability, decentralization, traceability, and currency properties. While (Douglas, Holloway, Lohr, Morgan, & Harfoush, 2020, p. 1) argued that Blockchain as a technology has numerous advantages, the foremost prominent of which are its decentralized trust, immutability, auditability, and distributed nature. These benefits make blockchains appealing for a wide range of applications. As a consequence, it's no surprise that the financial services industry has adopted Blockchain to enhance many of its out-of-date processes while also saving money. Banks can trade faster and cheaper with a Blockchain, making them more efficient. However, (Golosova & Romanovs, 2018) listed several disadvantages of blockchain, the primary downside of Blockchain is that it consumes a lot of energy. The Blockchain's challenge is signature verification; because each transaction must be signed with a cryptographic technique, a large computational capacity is required for the calculation process to sign. It is one of the causes of high energy usage. The opportunity to separate the chain is the Blockchain's next concern. The nodes that are still running the old software will refuse to accept transactions in the new chain. Another issue with Blockchain is the equilibrium between the number of nodes and the low fees for users. The Blockchain's high prices are a significant disadvantage. Energy consumption is one of the factors contributing to this condition. The second factor is the Blockchain's hefty initial capital requirements.

The use of technology in Islamic finance has received a great deal of attention in recent years. Waqf and charity sectors dealt with digital technology developments and oriented their assets toward the digital economy via digital platforms, intending to improve the quality of their services, develop their resources and investments, and maximize their social effect. The application of blockchain in Waqf has been a high priority, so researchers have looked at it from a variety of perspectives, including (Alharthi, 2021), (Vidiati, Hendra, Santoso, & Faturrizky, 2021) (Ghezal & Lahsasna, 2020), (Ismail Abdel Mohsin, 2019), (Siti & Arif Rusmita, 2018).

Researchers agree that the blockchain is an effective means to develop the Waqf, as well as help address some of its difficulties and meet some of its obstacles. (Alharthi, 2021) suggests that the absence of data, compromised historical records in the event of the Founders' demise, lack of

openness, and incorrect auditing are the key obstacles to the renewal of the Waqf system. According to (Siti & Arif Rusmita, 2018, p. 1157) blockchain has the potential to solve many current challenges in waqf administration by allowing for readily auditable transactions and costless verification of a device's properties. Due to this and other capabilities, blockchain has the potential to play a vital role in tracking supply chain sources as well as handling and dealing with a large number of transactions. Thus, Waqf's efficacy and effectiveness are assured through smart contracts on Blockchain, as well as its founders' objectives. On the other hand, (Azganin, 2019) believed that the major problem in Waqf is not a lack of trust, but a lack of understanding about the crowdfunding platform. He discovered that 69% of people had never given to a crowdfunding portal. When it comes to contributions, 70% of people trust Awqaf management. He also agreed that there is a lot of promise and possibility for using crowdfunding and blockchain concepts in Waqf, particularly for fundraising, improving Awqaf lands, and increasing transparency.

When it comes to the Islamic financial industry, blockchain is used for more than only Waqf. (Ghezal & Lahsasna, 2020, p. 8) believed that Waqf may have a tremendous potential to improve and develop its idle asset by using blockchain. The methodology might be used in a variety of Muslim jurisdictions to maximize the potential and benefits of waqf for the benefit of the entire Community. In this regard (Ismail Abdel Mohsin, 2019, p. 139) pointed to Waqf-coin as a more innovative method of collecting and tracking donations than traditional cash waqf and waqf-crowd. Waqf-coin, like waqf-crowd models, capitalizes on numbers by accepting small amounts of money from a large number of donors. The main distinction is that the waqf-coin model employs cryptocurrencies, which can be donated or mined by donors. Donors could also track their donations in real-time, rather than waiting for the project initiator or waqf institution to notify them.

Governments have been increasingly interested in blockchain technology and its use as a tool for digital transformation in recent years. It has been viewed as a source of economic diversification and has risen to the top of many governments' strategic objectives. (Vidiati, Hendra, Santoso, & Faturrizky, 2021, p. 66) explained that Government support is required to enforce waqf blockchain security regulations. This prototype is very effective in assisting waqf management to be more ideal for welfare and sustainability, especially in emergencies like the current pandemic, where sources of funds other than government financial sources are limited, and waqf is one of the public's sources of funds through Muslim financial sources.

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The introduction of Crowdfunding and Blockchain into the Waqf system presents major legal and practical problems. Government support must be accompanied by the development of appropriate laws and regulations. For this reason, (Nor Razinah, Engku, Adewale, & Hamizah, 2019) saw that smart contracts must fulfil the needed components as stated by the legislation to have legal and enforceable contracts under the law. It's also important to recognize that computer scientists and lawyers are not the same things. Regardless of how computer scientists argue that smart contracts are legally binding contracts, lawyers are still responsible for examining the laws and validity of smart contracts. Ultimately, it is the computer scientist's job to create the right computer codes for the smart contract's conditions.

Due to the topic's novelty, few studies have focused on presenting case studies of blockchain's usage in Islamic finance in general or Waqf in particular. (Abd Razak, Ag Omar, Samsulbahri, Gazali, & Ishak, 2020) presented a conceptual paper that highlights the discussions on waqf blockchain for Islamic finance education. The study also designed a waqf blockchain prototype for Islamic financial education at UNIVERSITI MALAYSIA SABAH. And through a case study of smart Sukuk issued through the platform of Blossom Finance in Indonesia, (Babas, 2020) discover the uses of Blockchain in the Islamic financial industry. According to the study Smart Sukuk, which was issued in Indonesia through the Blossom Finance platform, was one of the earliest technical breakthroughs in this sector, and it played a significant role in funding microfinance cooperatives in the country.

The goal of this study is to explore blockchain technology as an innovative technology, and analyze the possibility of applying this technology in Waqf, and how it changed this field. This research also aims to review Finterra's use of blockchain technology in the realm of endowments and charity activities.

3- The Finterra Waqf Chain model

3-1- Establishment of Finterra Waqf Chain

Finterra, a prominent technology-based firm that provides blockchain-based Islamic applications that meet international concerns, was founded in 2017 and has offices in Malaysia, Singapore, Hong Kong, the United Arab Emirates, and India, with intentions to expand further into Africa and the Middle East. Finterra serves as a Social Platform for Blockchain, promoting

community growth and advocating for the widespread adoption of groundbreaking blockchain technology. Through several verticals that support Islamic Social Finance, the Finterra ecosystem provides customers with an inclusive platform. On February 19, 2019, Finterra unveiled the "Finterra Waqf Chain," the world's first blockchain-based waqf chain. The Islamic Social Finance Suite, one of Finterra's main products, was created to revitalize the Islamic Social Finance system for the digital age utilizing blockchain technology. It helps solve essential difficulties in unlocking and integrating alternatives for Capital raising, Waqf management, and Asset management while providing powerful reporting capabilities, thanks to applicable regulatory compliance embedded into the goods and services. FINTERRA has developed a GALLACTIC Blockchain solution that incorporates important regulatory compliance into its goods and services. Expertise in developing solutions based on the GALLACTIC Blockchain technology for global use cases and issue statements. (Finterra, 2021)

Figure number (01): WAQF Chain on GALLACTIC Blockchain



Source : (Rashid, 2021, p. 20)

3-2- Finterra WAQF Chain Structure

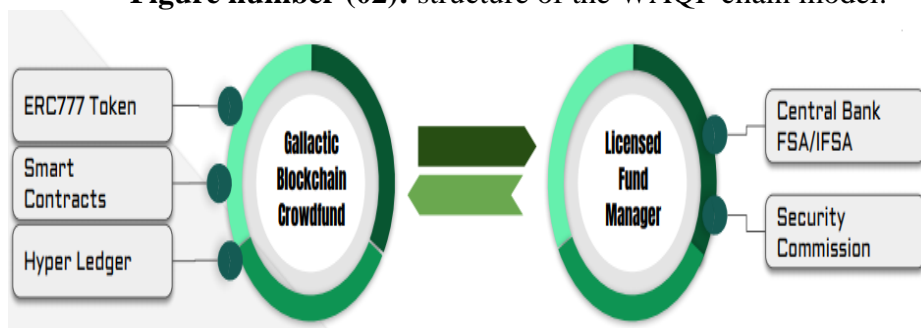
Waqf is widely regarded as the most prominent form of Islamic charity. It is a philanthropic foundation through which long-term assets that generate revenue flows can be developed and conserved, and it stands out as one of the greatest achievements of Islamic civilisation. These assets, in turn, aid in the creation and generation of wealth for the betterment of

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society as a whole. The Finterra WAQF Chain platform is a web-based tool for charitable fundraising that incorporates Blockchain, Waqf, and crowdsourcing concepts and technology. Only campaigns from registered NGOs are hosted on the WAQF Chain. This criterion is in place so that donors can rest assured that their money is going to the right people. Additionally, all donations made through the WAQF Chain platform are routed directly to Finterra's collaborating bank's trust account. After that, only if the soft target is met by the campaign deadline will the cash be given to the campaign owner. Otherwise, the cash will be completely repaid to the contributors. All donation receipts will be recorded on Finterra's blockchain and may be accessed in the dashboard's "My Smart Contracts" section. (Finterra, 2021)

Under the ERC-777 standard, each project has its Smart Contract standard. These Smart Contracts are used to fund a project, which can only begin if all due diligence needs are addressed. The resulting Smart Contracts associated with the project are claimable by participants when the fundraising is concluded, as these digital assets represent a participant's share in that specific Waqf and/or Charitable project or cause. The following figure explains the structure of the WAQF chain model:

Figure number (02): structure of the WAQF chain model:



Source: (Finterra, 2021)

All Endowment Smart Contracts follow the ERC-777 standardized interface, while vital documentation is uploaded and kept publicly on IPFS in an immutable and distributed way, assuring the project's safety and transparency as it progresses. While specific project terms are tamper-proof inscribed into (and enforced by) a Smart Contract. Whereas Smart Contract distribution, KYC/AML, payment methods, and project revenue are all

handled automatically by the Smart Contract logic, ensuring fairness and accounting accuracy for Smart Contract holders.

3-3- Modus operandi of Finterra WAQF Chain

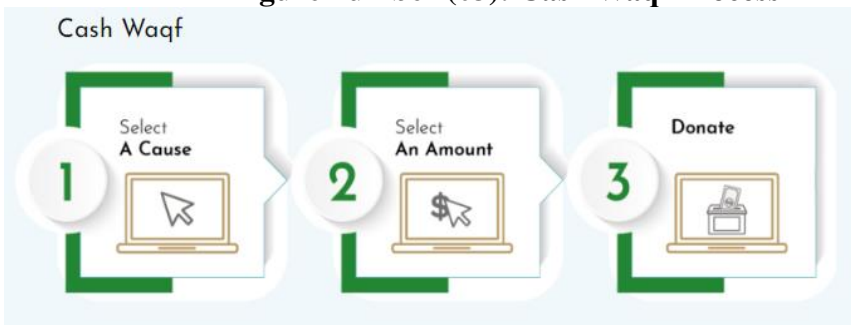
The Finterra Waqf Chain platform offers two services: CASH WAQF and WAQF PROJECT.

CASH WAQF: Cash Waqf can simply be defined as a monetary kind of waqf capable of providing help to the working class. This aid could take the shape of interest-free loans or non-refundable financial assistance to help with the start-up or operation of a small business. Similarly, it has two sorts of applications: direct and indirect cash waqf. The fundamental distinction between the two types is that, whereas direct waqf is created in cash and directed directly to the development of any waqf property, indirect cash waqf must first be established in cash and then invested before the revenue/profit can be transferred to the beneficiaries.

In the CASH WAQF, Islamic financial institutions post Islamic investment possibilities on the Finterra Waqf Chain for audience involvement. Participants register, create an account and then deposit funds into the Finterra Waqf Chain, which are held in an Islamic Bank Trust Account. Profit-sharing applies to all money in the trust account, and depositors can view causes formed on the Finterra Waqf Chain platform, such as:

- Waqf Charitable Causes.
- Islamic Investment Opportunities.
- Islamic peer-to-peer Lending.

Figure number (03): Cash Waqf Process



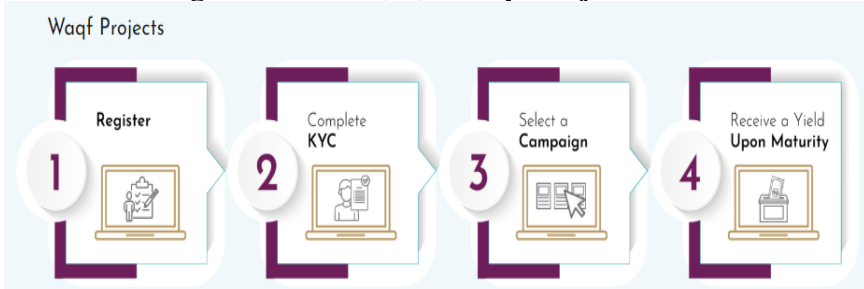
Source: (Finterra, 2021)

As for the WAQF PROJECT, Users (individuals, corporate CSR, and trust and foundations) obtain their participation in charity, Islamic investment, and P2P lending via Smart Contracts once SMEs advertise Islamic trade credit offers for crowd involvement. Knowing that users may

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follow their involvement and transactions within the Finterra Waqf Chains (Blockchain), ensuring immutability and transparency, is reassuring.

Figure number (04): Waqf Projects Process



Source : (Finterra, 2021)

Finterra's platform is built with users in mind, offering a great user experience and a wide range of campaigns. It has a strong track record of delivering robust solutions with Islamic social finance at its core, and its processes adhere to strict ISO and IDE compliance guidelines, earning it global recognition and multiple awards for its proprietary technology. The model is distinguished by many features:

- Transparency in all financial transactions, which are saved in an immutable and publicly accessible format for stakeholders to review.
- Eradication of corruption thanks to Blockchain consensus backing Smart Contracts.
- An integrated ecosystem with all connected parties on the same platform.
- Fundraising for Islamic Social Finance development and causes.
- Releasing liquidity trapped in Waqf assets.

3-4- The importance of Finterra WAQF Chain to develop Islamic Finance

Finterra is a global Blockchain platform that manages and develops WAQF assets while also providing a social solution for WAQF recipients and mankind. The Finterra WAQF Chain has a 6 million-dollar revenue. Using innovative technologies, the platform works to optimize the value of Waqf and build confidence among the public social community for WAQF property development. To retain a very high long-term sustainable income and leverage assets and land for business and growth through crowdfunding on a new technological platform. Companies and organizations can now

create a much more engaging and dynamic experience for contributors by developing specialized charity campaigns with defined targets and transparent disclosure of how many donations have been gathered in real-time, due to Finterra's WAQF Chain platform.

Finterra WAQF chain ensures that internal transactions and property development are transparent, as it eliminates corruption. It also supports the creation of an integrated Property development ecosystem by allowing property developers to crowdfund their projects, allowing them to profit from frozen liquidity in property assets. According to the statistics of December 2021, the platform has a wide reach and is already having an impact on 9450 people's lives. 8 Countries are represented, with 12 Waqf fund pools and 680 verified donors.

Waqf assets are handled by non-profit advisory boards to provide value and social advantages to the general population. The usage of blockchain technology could address this by electronically tracking each contract throughout the investment's life cycle. Participants in the Endowment (Waqf) Chain can create project ideas to develop and revitalize endowment properties. Others can help support these project ideas by donating money. If the project's objectives are accomplished, the proposal is approved, and a set number of Endowment tokens is created and distributed to the participating funders. The distributed ledger, created by blockchain technology, is a viable, decentralized record of transactions that can replace a single master database. It retains an immutable record of all transactions, all the way back to the beginning. This is also known as provenance, and it is critical in financial transactions since it allows financial institutions to analyze all business activities and decrease errors and fraud.

The endowment chain has become fully operational on the Finterra platform, making it a powerful tool for communities, crowd funders, and the charities they support. Charitable contributions made through Waqf Chain improve the lives of the underprivileged and poor by funding long-term structures and organizations. Waqf Chain provides assistance to those in need while also sharing in one another's fortune, ensuring a socially developed and working collaboratively. The Finterra platform also lowers wealth hoarding by facilitating the equitable division of wealth throughout the society, resulting in not only financial but also social fairness. Finterra will offer a social solution in the shape of the Endowment Chain by combining the specialist knowledge of an IVY trained team with their groundbreaking blockchain technology. Finterra's approach to

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crowdfunding and waqf development is attempting to alter the financial landscape.

Conclusion

This paper illustrates how blockchain technologies might assist endowments in better management, lower transaction costs, greater transparency, and increased confidence, so improving the waqf process and having a significant impact on Muslim society. It also presents a related case study of Finterra WAQF Chain platform that is now in the works as proof of the viability of blockchain technology in the Islamic social finance field.

Because it uses smart contracts to automate manual operations, Blockchain technology is recognized to make processes more effective, traceable, cheaper, and faster. This eliminates superfluous middlemen from typically difficult tasks. Financial institutions can use the Finterra WAQF Chain platform to enable all of their clients to participate in philanthropic endeavours and create social influence. However, Blockchain solutions, have faults in a multitude of areas, making general use a long way off. It would be naive to assume that blockchain's challenges aren't significant barriers to its adoption in Waqf.

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