

ZakatDAO

Governance by the People, for the People.

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1 Introduction

ZakatDAO, a decentralized zakat distribution system built on blockchain technology, AI-based prioritization, and DAO (Decentralized Autonomous Organization) governance. The platform aims to ensure fairness, efficiency, and transparency in distributing zakat to eligible recipients (asnaf), while maintaining strict adherence to Islamic teachings.

Short story here...

In Malaysia, the traditional zakat system has long been the backbone of charitable giving. According to recent reports, over RM3 billion is collected annually through zakat across all states, with Selangor alone recording RM1.1 billion in collections and distributions in 2023 [3, 4]. While this system has served its purpose, there are challenges. Many donors lack visibility into where their contributions go, and the process remains somewhat centralized, with decisions on fund allocation often made by a small group of administrators. This creates a gap between the donors and the recipients, with some voices getting lost in the shuffle. Moreover, administrative delays and inefficiencies in fund disbursement sometimes result in those in desperate need receiving help too late!

Now, imagine a ZakatDAO system that solves these very issues. By harnessing blockchain technology and DAO governance, ZakatDAO brings a revolutionary shift to zakat distribution in Malaysia. With blockchain, all transactions are

recorded on a public, immutable ledger, ensuring that every donation is traceable and transparent. Donors no longer have to wonder where their money goes. They can track in real-time how their zakat is being used, providing complete transparency—a fundamental Islamic value of accountability (amānah).

In the ZakatDAO system, community governance takes center stage. Instead of a few authorities making decisions behind closed doors, donors themselves have the power to vote on how funds should be allocated. Should they go to education, healthcare, or disaster relief? It's up to the community to decide, reflecting the Islamic principle of Shura (consultation), where decisions are made collectively and inclusively. Through the DAO voting mechanism, each donor has a say, ensuring that community welfare (maslahah) is always at the forefront.

And... This is the core concept of ZakatDAO!

1.1 Problem Statement

Despite various government and institutional efforts to digitize Islamic financial services, traditional zakat systems still face several persistent issues:

The specific problems include:

1. **Lack of Transparency:** Donors often cannot trace where their donations go, and there is no clear record of fund usage, leading to a loss of trust.
2. **Centralized decision-making:** Fund allocation is often handled by authorities, reducing public participation.
3. **Inefficient Distribution:** The distribution of funds is often slow, prone to errors, and may not be optimized to serve those in need.
4. **Limited Accessibility:** Underprivileged communities, including those without access to formal banking services, face challenges in receiving aid and donations through traditional means.

These limitations hinder the effectiveness of zakat as a tool for social justice and poverty alleviation.

1.2 Objectives

1. **To Enhance Transparency:** Ensure that all donations and fund distributions are traceable and verifiable through a digital ledger. It also engages donors and stakeholders to participate in decision-making via blockchain-based voting mechanisms.
2. **To Increase Efficiency:** Automate disbursements using AI and smart contracts to eliminate the need for intermediaries and traditional organizational structures, lowering the costs.
3. **To Promote Inclusivity:** Provide an easy-to-use platform for the Muslim community, especially focusing on underprivileged communities and those without access to traditional banking.

1.3 Solution Overview

The proposed solution is a Decentralized Charity Fund Management System using blockchain and DAO (Decentralized Autonomous Organization) principles to ensure transparency, community participation, and Shariah-compliance in the allocation of funds [2].

Donors can contribute via digital payments like TNG e-Wallet and FPX, while recipients redeem funds through digital vouchers or tokens at verified merchants. The DAO governance model enables donors to vote on the allocation of funds to various projects, ensuring democratic decision-making. Blockchain records all transactions on a secure, immutable ledger, providing real-time transparency and traceability. The system also adheres to Shariah principles, ensuring proper Zakat management and ethical distribution of funds[5, 1].

2 Project Architecture

The proposed platform aims to provide a seamless and transparent process for zakat donations and distribution through an integrated digital solution. The architecture is designed around efficiency, security, and transparency, utilizing cutting-edge technologies like blockchain, DAO governance, and digital wallets.

Below, we will explore the experience of key users interacting with the system, each benefiting from its unique features.

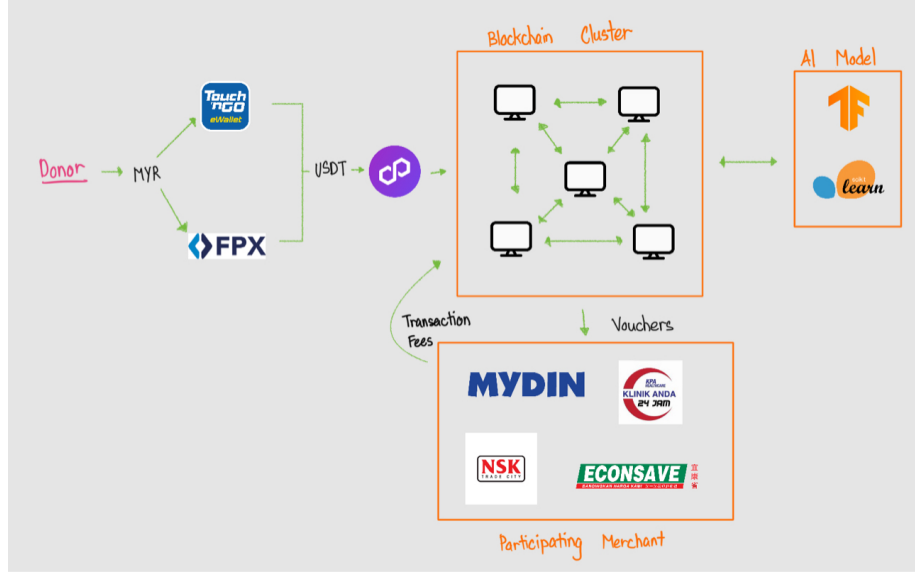


Figure 1: System Architecture for ZakatDAO

The ZakatDAO system begins with donors to donate using Malaysian Ringgit (MYR) through familiar payment platforms like Touch n Go eWallet, a widely used digital wallet in Malaysia, or FPX. These platforms allow seamless fiat contributions, catering to donors who prefer traditional currency over cryptocurrency.

Once the MYR donations are received, they are converted into USDT, a stablecoin pegged to the US dollar, to enable compatibility with the Polygon blockchain. Polygon, a layer-2 scaling solution for Ethereum, is chosen for its low transaction fees and high scalability, making it ideal for handling micro-transactions like Zakat donations [6]. The conversion to USDT ensures that the funds maintain a stable value while being processed on the blockchain.

The donations, now in USDT, are processed through a blockchain cluster on the Polygon network, represented by a network of nodes in the diagram. These nodes, operated by validators (often referred to as miners), validate and secure the transactions. Validators are incentivized with Polygon’s native token, MATIC, for their role in maintaining the network’s integrity, ensuring that all

Zakat transactions are transparent, immutable, and auditable on the public ledger.

A smart contract, backed by the USDT stablecoin, governs the entire process on the Polygon blockchain. It securely holds the USDT funds, logs all transactions, and ensures that the Zakat is distributed according to predefined rules. Integrated with the smart contract is an AI model, powered by TensorFlow and Scikit-Learn, which prioritize the recipients based on in-house scoring algorithms, optimizes the distribution process, and helps prevent fraud or misuse of funds.

Once the asnaf are identified and verified, the smart contract releases the funds in the form of digital vouchers, which are also backed by USDT to maintain their value stability. These vouchers are distributed to the asnaf, ensuring that the Zakat is used for permissible and essential purposes in line with Islamic guidelines. The use of vouchers instead of direct cash allows for controlled and targeted spending.

To ensure the sustainability of the program, a 2% transaction fee will be charged to merchants, covering costs such as gas fees and business operations. This approach ensures that donors and other parties are not burdened with additional fees, allowing the system to remain cost-efficient while supporting its long-term functionality and growth.

3 DAO Architecture

The ZakatDAO platform utilizes a Decentralized Autonomous Organization (DAO) governance model that enables donors and NGOs to directly participate in the decision-making process. In this system, both donors and NGOs, along with the State Councils are the DAO members, and they have the authority to propose and vote on the allocation of zakat funds. Each donor's voting power is proportional to their contribution, ensuring that those who contribute more have a greater say in how funds are distributed.

When a proposal is submitted, it must receive a 60% approval threshold from the DAO members to be passed. Once approved, the proposal is executed through a smart contract, which automatically allocates the funds according to

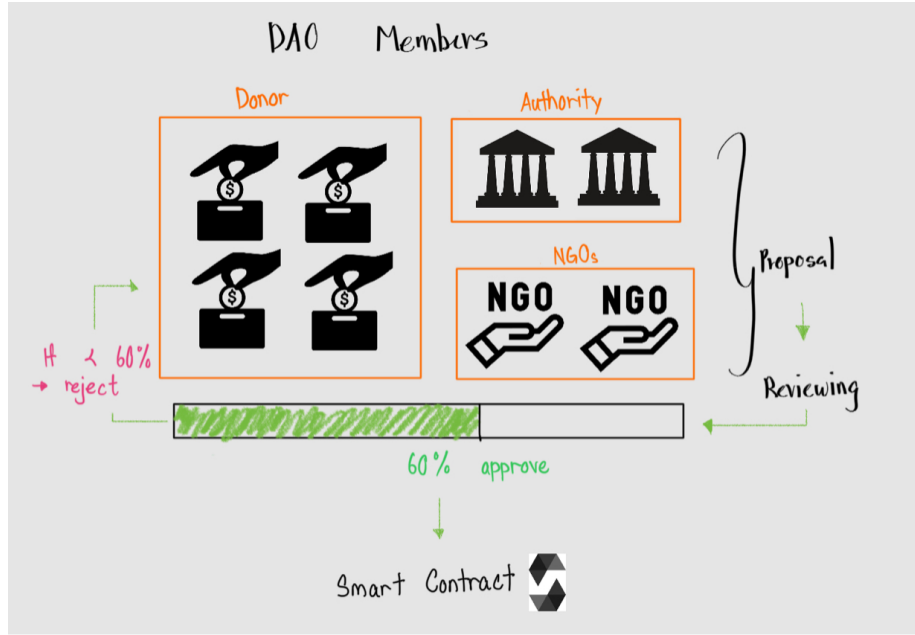


Figure 2: DAO Governance Architecture for ZakatDAO

the approved plan. The smart contract ensures that the distribution process is secure, transparent, and automated.

The main objective of this DAO architecture is to empower the community in the decision-making process, ensuring that fund allocation reflects the needs and priorities of the community while maintaining full transparency and accountability on the blockchain.

4 Conclusion

The ZakatDAO platform is just the beginning of a revolutionary shift in how zakat is managed and distributed. Starting small, it has the potential to scale exponentially, reaching new heights in efficiency, transparency, and community-driven impact. By harnessing the power of blockchain technology and DAO governance, this system sets a new standard for how charitable giving should operate—secure, transparent, and fully accountable.

As the platform grows, it can seamlessly handle an increasing number of donations and recipients, expanding across borders and impacting thousand of lives. The beauty of ZakatDAO lies in its ability to scale rapidly while keeping transaction costs low, ensuring that zakat reaches those in need efficiently, no matter how large the system becomes.

The platform delivers a transformative impact on three core areas:

1. **Transparency:** Every transaction, every decision, is recorded and visible on the blockchain. Donors can track their contributions in real-time, fostering trust and ensuring complete accountability.
2. **Efficiency:** Thanks to smart contracts and AI algorithms, zakat distribution becomes automated, fast, and optimized, eliminating bottlenecks and unnecessary costs.
3. **Community Empowerment:** The DAO governance model puts decision-making power in the hands of donors and NGOs, ensuring that zakat distribution reflects the true needs of the community and stays rooted in Islamic principles of equity and justice.

ZakatDAO isn't just a new platform; it's the future of zakat—a bold step toward a more inclusive, democratic, and effective system. With this model, we can reshape the future of charitable giving, ensuring that zakat serves its true purpose in uplifting Muslim communities worldwide.

References

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