

PureGiving

1. Introduction

In this digital age, the way we save, invest, and transact has been transformed by the application of fintech (financial technology), however many existing charity systems still face challenges such as transparency issues or distribution issues, leaving donors uncertain where their money is going. This proposal recognizes these systemic issues and demonstrates a solution that reimagines charity using fintech.

PureGiving combines mobile payment systems, blockchain and AI personalization to offer a transparent and secure platform that efficiently connects donors with verified beneficiaries. It ensures real-time tracking and fund allocation, allowing donors to put their concerns about where their money is going to rest.

PureGiving is a scalable, fintech-powered platform that aims to build a charitable ecosystem where every contribution is visible, meaningful and has a lasting impact.

2. Problem statement and objectives

Problem Statement

Despite the rapid advancement of financial technology, Islamic charitable funds management, particularly Zakat, Waqf, and Sadaqah continues to face significant challenges that hinder their effectiveness and impact. Current systems suffer from:

1. **Lack of Transparency:** The Islamic charitable funds management suffers from incomplete records and documentation. This means donors cannot see where their money goes or how it's being used. For example, when someone donates to build a mosque or school through waqf, they often receive no updates on construction progress or confirmation that their funds reached the intended project. This lack of visibility and feedback creates distrust and makes it difficult for donors to understand the real impact of their generosity which then discourages them from donating.

2. **Inefficient Fund Distribution:** Traditional donation systems involve too many middlemen before money reaches those in need. For instance, a donation might pass through collection centres, administrative offices, and local distributors before reaching beneficiaries. Each step takes time and may deduct administrative fees, reducing the actual amount that reaches the intended recipients. These inefficiencies significantly reduce the impact of charitable giving.
3. **Limited Accessibility:** Many traditional donation methods require in-person visits to offices or banks during specific hours, making it difficult for working people to contribute. Additionally, potential recipients in remote areas may need to travel long distances to register for assistance or collect funds. This creates barriers for both donors and beneficiaries. Younger generations especially want more convenient digital options for making charitable contributions.
4. **Security Concerns:** Current donation systems often lack robust security measures. This leads to problems like fraud, where funds are misappropriated, or identity theft, where donor information is compromised.
5. **Regulatory Compliance Challenges:** Islamic charitable funds must follow both Shariah principles and national financial regulations, creating a complex compliance environment. For example, zakat calculations differ based on various assets like gold, business income, crops, and each requires different documentation and distribution methods according to Islamic guidelines. Most platforms don't effectively navigate these dual requirements, leading to potential non-compliance.

Objectives

PureGiving aims to revolutionize Islamic charitable donations through financial technology innovation by:

1. **Creating Complete Transparency:** We will implement blockchain technology to create unchangeable records of every transaction. This means donors can track their

contributions in real-time from the moment they donate until the funds reach beneficiaries. For example, a donor contributing to an orphanage fund can see exactly when their donation was received, allocated, and used for specific needs like food, education, or healthcare.

2. **Streamlining Fund Distribution:** Our platform uses technology to send donations directly to recipients without unnecessary middlemen. This means your donation reaches those in need within hours instead of weeks, and more of your money goes to the actual cause rather than being spent on administrative costs.
3. **Making Donations Accessible to Everyone:** PureGiving will offer multiple easy-to-use payment options including mobile wallets, QR code payments, bank transfers, and even options for those without bank accounts. The platform will be available 24/7 through smartphones, computers, or assisted kiosks in community centres to serve those with limited technology access.
4. **Enhancing Security Measures:** We will implement advanced encryption for all transactions and multi-factor authentication for accounts. All beneficiary organizations will undergo thorough verification before being listed on the platform, and continuous monitoring systems will detect unusual activities that might indicate fraud.
5. **Ensuring Full Regulatory Compliance:** The platform will incorporate built-in Shariah compliance checks for all transactions while simultaneously adhering to national financial regulations. For example, zakat calculations will automatically apply the correct rates for different asset types, and distribution will follow the prescribed categories of recipients according to Islamic principles.
6. **Providing Detailed Impact Reporting:** Donors will receive regular updates showing exactly how their contributions have been used, including photos, testimonials from beneficiaries, and measurable outcomes like the number of meals provided, students educated, or medical treatments funded. This creates a stronger connection between donors and the causes they support.
7. **Educating Users About Islamic Charity:** The platform will include easy-to-understand information about Zakat, Waqf, and Sadaqah, explaining their importance, calculation methods, and proper distribution according to Islamic principles. This addresses the knowledge gap and helps users make informed decisions about their charitable giving.

3. Our solution

Our solution, PureGiving, is a website that simplifies and improves the Sadakah, Zakat and Waqf donation process. It ensures efficient fund allocation, transparency, accountability and inclusivity as it creates a direct connection between donors and beneficiaries (individuals or organisations). PureGiving simplifies charitable giving by offering direct donations, real-time tracking, and personalized experiences, making sure that every contribution has a meaningful, transparent, and lasting impact. The solution uses AI, mobile payment systems, and real-time updates for maximum impact, and it is made to be inclusive of both banked and unbanked people. It is an all-inclusive, scalable solution for charities, NGOs, and individual donors.

- AI-Powered Suggestions: AI is used to enhance engagement and relevance by tailoring donation recommendations according to donor history, urgency, and preferences.
- Dashboards: Donors will have personal dashboards to track donations, create schedules, and see the results of their contributions, etc.

4. Our solution's features

Key features of our solution include:

- Inclusivity: Designed for both banked and unbanked users, with mobile payments for those without access to banks.
- Efficiency: Eliminates intermediaries, ensuring donations go straight to verified beneficiaries.

- **Automated Fund Allocation:** For Sadaqah, donations are allocated to causes based on need, urgency, and transparency scores. Donors can also select categories such as education.
- **Recurring Donations:** For steady funding of long-term projects, users can set up recurring donations, such as monthly contributions for Zakat and Waqf.
- **Real-Time Transparency:** Donors can monitor the use of their money through donation trackers and update systems where beneficiaries provide frequent updates and photos to verify authenticity.

5. What makes it different from other solutions

Differentiation from Existing Solutions

Innovative Technical Architecture

Unlike conventional donation platforms, PureGiving uses a unique combination of technologies specifically designed for Islamic charitable giving:

1. **Blockchain-Based Transparency System:** Our platform leverages established blockchain technology to create verifiable records of donations and disbursements. Rather than relying on external religious authorities to manually approve transactions which would be impractical and create bottlenecks, our system uses predefined rules and parameters based on Islamic finance principles that are encoded into the platform's algorithms. This ensures compliance with basic Shariah requirements through automated validation while maintaining the transparency benefits of blockchain.
2. **Smart Fund Allocation with AI:** The platform uses artificial intelligence for intelligent fund distribution in specific circumstances: This feature is only activated in two specific scenarios:
 - When donors specifically choose the "Sadaqah Pooling" option, allowing their donations to be directed where most needed

- When a project is banned or non-compliant, requiring funds to be reallocated to similar causes

In these specific cases, the AI makes allocation decisions based on:

- How urgent the need is
- How transparent and accountable the receiving organization is
- How much positive impact the funds could create
- Where the need is greatest geographically

For example, if a natural disaster occurs and donors have opted into Sadaqah Pooling, the system can automatically prioritize relief efforts in that area while maintaining regular support for ongoing programs elsewhere. This goes beyond basic donation collection offered by platforms like GoBaraka, while still respecting donor intent in all other donation scenarios.

3. **Location Verification for Authenticity:** When beneficiaries post updates about how they've used donations, our system verifies their location using GPS coordinates to confirm they're actually at the reported project site. This prevents fraudulent reporting and ensures donors receive authentic updates. For instance, if an organization claims to be building a water well in a specific village, their update photos must have location data matching that village.
4. **Mobile Credit System for Unbanked Users:** PureGiving includes a phone-based payment system that allows unbanked individuals to participate using just their mobile numbers:
 - **Send Money with Just a Phone Number:** Similar to how you add phone credit, you can send and receive donations using only a phone number, so no bank account needed
 - **Works on Any Phone:** Whether you have a smartphone or a basic feature phone, you can use simple text messages to send donations and check your balance
 - **Cash Out Anywhere:** Turn your received donations into cash at local shops, mobile outlets, and community centres in your neighbourhood

- **Direct Help to Friends and Family:** Easily send support directly to loved ones in remote areas, even if they don't have banks or internet access
- **No Minimum Amount:** Send as little as a few ringgit, making it possible for everyone to help others regardless of their income level

This ensures that PureGiving serves everyone in the community, regardless of their banking status, while maintaining the same level of transparency and accountability.

Comprehensive Accountability System

PureGiving introduces a structured approach to ensure all participants remain accountable:

- **Multi-Layer Verification System:** Our platform implements a robust yet practical verification framework to ensure trust and security. This multi-layered approach creates a self-regulating ecosystem that builds trust without relying on complex external integrations:
 - **Document Verification:** Organizations submit registration certificates and financial statements through our secure portal, which are manually reviewed by our admins.
 - **Two-Factor Authentication:** All transactions require email or SMS verification, protecting both donors and recipients from unauthorized access.
 - **Community Trust Network:** We leverage a peer-review system where established users can earn "Verification Partner" status after consistent platform usage, allowing them to endorse new organizations.
 - **Activity Transparency:** Organizations must regularly upload evidence of fund utilization through photos, receipts, and impact reports, viewable by all donors who contributed.

2. **Clear Consequences for Non-Compliance:** Unlike other platforms that lack enforcement, PureGiving implements a transparent warning system:

- First 29 days: Normal operation status
- After 30 days without required updates: WARNING status visible to all donors
- After 45 days: FROZEN status where funds are temporarily paused

- After 60 days: PENALTY status where remaining funds are redirected to similar causes
- After 3 penalties: Permanent removal from the platform

This system ensures organizations remain accountable or face consequences.

3. **Community-Based Governance:** PureGiving allows donors, beneficiaries, and religious authorities to participate in platform governance through voting on policy changes and reviewing organizations. For example, community members can flag suspicious activities for investigation, and respected scholars can provide guidance on Shariah compliance issues.

Complete Islamic Finance Integration

While most existing platforms focus only on collecting donations, PureGiving provides:

1. **All-in-One Islamic Charity Tools:** Our platform integrates management tools for all Islamic charitable mechanisms like Zakat, Waqf, and Sadaqah with features tailored to each type's specific requirements. For instance, Waqf contributions can be directed toward long-term investments that generate ongoing benefits, while Zakat funds are distributed according to the eight categories specified in Islamic teachings.
2. **Easy-to-Use Calculation Tools:** The platform includes calculators for different types of Zakat such as income, business, savings, gold or silver, that help users determine exactly how much they need to contribute according to Islamic guidelines. For example, a business owner can input their business assets and liabilities, and the calculator will automatically determine their Zakat obligation.
3. **Partnerships with Official Institutions:** Unlike standalone platforms, PureGiving works directly with:
 - Official Islamic Religious Councils that oversee charitable giving
 - Government registry agencies to verify legitimate charity organizations
 - Banking institutions for secure and efficient financial processing

- Telecommunications providers to facilitate the mobile credit system for unbanked users
- Local businesses that serve as cash redemption centres

These partnerships ensure the platform operates within both religious and legal frameworks while reaching all segments of society.

4. **Visual Impact Dashboard:** Donors can access an interactive dashboard showing the real-world impact of their contributions through charts, maps, and stories. For example, someone who donates to an education fund can see statistics on student enrolment increases, graduation rates, and career outcomes, making the impact of their giving tangible and visible.

Through these distinctive features, PureGiving addresses the core challenges in Islamic charitable giving while providing a more comprehensive, secure, and efficient platform than existing solutions. One that truly serves everyone, including the unbanked population.

6. Technology used

Blockchain and Smart Contracts

PureGiving utilizes blockchain technology to ensure full transparency, data integrity, and security in all donation activities. Every donation is recorded on the blockchain, providing an immutable ledger that donors can verify at any time. This guarantees that funds are traceable from the moment they are donated to the point they reach beneficiaries. Smart contracts are used to automate the disbursement of funds, especially for Zakat, Sadaqah, and Waqf. These contracts execute based on predefined rules aligned with Islamic finance principles, removing the need for intermediaries and ensuring that transactions are carried out fairly, instantly, and in a Shariah-compliant manner. For instance, Sadaqah can be pooled and redistributed based on urgency and need, while Waqf funds are allocated to long-term initiatives like education or infrastructure.

Mobile and Digital Payment Integration

To ensure accessibility for all users, PureGiving integrates with a wide range of digital payment gateways through APIs. These include local and global services such as Touch 'n Go, Maybank2u, Google Pay, Apple Pay, and GrabPay, offering users flexibility in how they make their contributions. Additionally, the platform supports unbanked users through a mobile credit system that allows donations and fund withdrawals using just a mobile phone number. This system is compatible with both smartphones and basic phones, using SMS or USSD interfaces. Donations can be cashed out at local shops or community centres, making it easy for beneficiaries in underserved areas to access support.

Artificial Intelligence and Machine Learning

AI and machine learning power several core features of PureGiving to enhance user experience, security, and donation effectiveness. For platform security, AI monitors for abnormal behavior, identifying and flagging potential threats such as fraud or unauthorized access. Donors can set up recurring automated payments for Zakat and Sadaqah, ensuring consistency in their charitable giving without needing to manage each transaction manually. Additionally, AI analyzes donor behavior and platform data to recommend causes that align with a donor's interests, while also spotlighting underfunded or urgent needs. This promotes equitable distribution and ensures funds reach the causes where they are most needed.

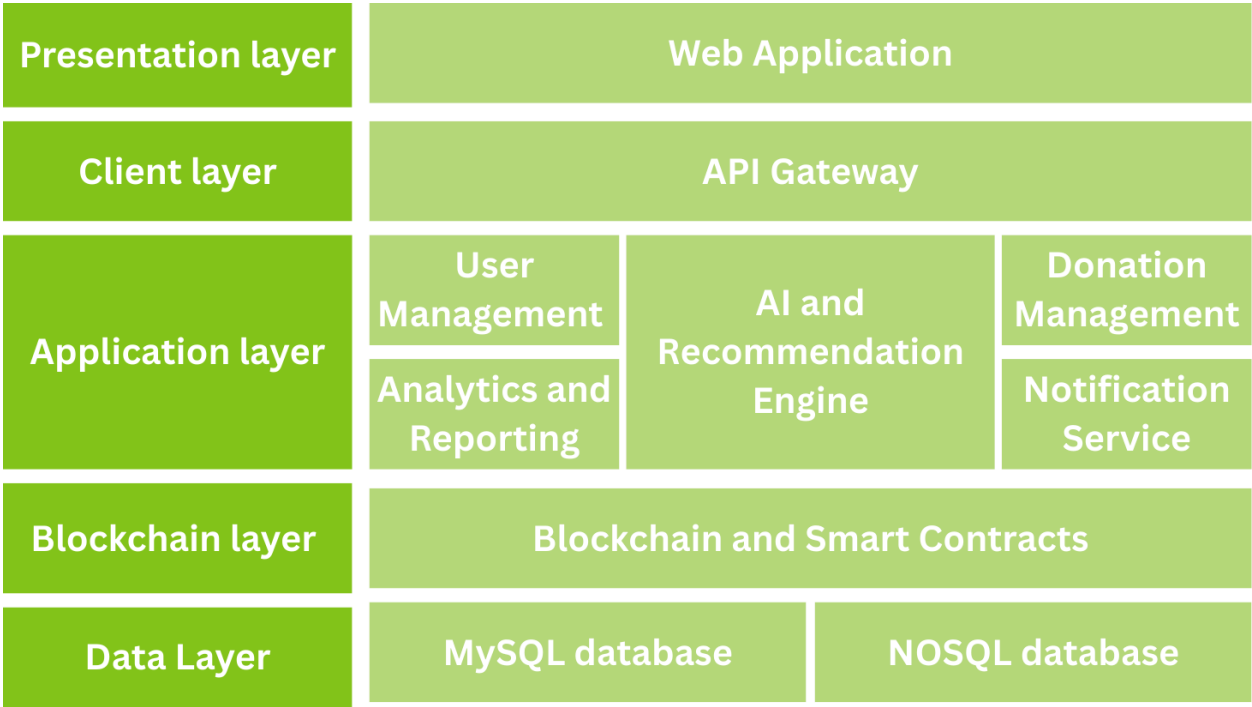
Data Analytics and Visualization Dashboards

PureGiving provides both donors and beneficiaries with intuitive dashboards designed to build transparency and accountability. Donors have access to detailed visual reports, including impact metrics that show the number of individuals or projects their donations have supported. A contribution breakdown shows how their funds were used—categorized into areas like food, shelter, education, and healthcare. The recurring donation tracker gives users oversight of both upcoming and past recurring payments. Beneficiaries, on the other hand, can track the progress of fundraising goals through visual progress bars and are required to provide updates—such as photos or receipts—to confirm how funds have been used. This ensures visibility and maintains trust between all parties.

Cloud Infrastructure and API Integration

PureGiving is built on a secure and scalable cloud infrastructure, enabling it to handle large volumes of users and transactions reliably. Through API connectivity, the platform seamlessly integrates with a variety of external systems, including financial institutions, telecom providers, religious councils, and government charity registries. These integrations support everything from payment processing and user verification to compliance with financial regulations and Islamic charitable guidelines. This architecture allows PureGiving to adapt and expand, supporting new partnerships, regulatory updates, and future growth.

6.1 Architecture Diagram



The **Presentation Layer** serves as the front-facing interface of the system, comprising the web application that users interact with. This layer is responsible for delivering a seamless and intuitive user experience, allowing donors and other stakeholders to browse available causes, make donations, and monitor their activity. It handles all visual elements and ensures the user journey is clear and efficient.

The **Client Layer** features the API Gateway, which functions as the single entry point for all client requests. It efficiently routes these requests to the appropriate services in the backend, ensuring a smooth interaction between the frontend and backend systems. Additionally, the API Gateway manages key operations such as authentication, load balancing, logging, and aggregating responses from various microservices into a unified result for the client.

At the heart of the system is the **Application Layer**, which contains the core logic and essential functionalities. This includes **User Management**, responsible for user registration, authentication, and role handling. **Analytics and Reporting** components collect and analyze user interactions and system performance, providing valuable insights for administrators. The **AI and Recommendation Engine** leverages machine learning to personalize the user experience by suggesting relevant charities or campaigns based on behavioral data. The **Donation Management** module handles all aspects of the donation workflow—from initiation and processing to confirmation and tracking. Additionally, the **Notification Service** ensures timely communication through various channels, including emails, SMS, or push notifications.

Beneath the application logic is the **Blockchain Layer**, which introduces transparency, immutability, and trust into the system. It utilizes blockchain technology and smart contracts to securely handle donations, ensuring that funds are directed appropriately and all transactions are auditable. This layer eliminates the need for intermediaries and enhances the system's overall integrity.

Finally, the **Data Layer** is composed of both **MySQL** and **NoSQL databases**, catering to different data storage needs. MySQL is used for structured, relational data such as user information, donation records, and transaction history. In contrast, the NoSQL database is suited for handling unstructured or semi-structured data, like logs, recommendation model outputs, and analytics data, offering greater flexibility and scalability.

7. Impact

PureGiving shapes the landscape of charity with its strategic use of financial technology, addressing transparency issues and operational efficiency. Through the design of this platform, it aims to deliver lasting impacts for all parties involved.

- **Increased Donor Trust and Transparency:** With the implementation of blockchain and real-time tracking of funds, donors can verify that their donations are received and used as intended. This fosters trust and encourages more people to partake in donating which allows for more satisfactory outcomes for charitable causes.
- **Optimal efficiency:** The application of blockchain eliminates unnecessary intermediaries during the donation process, which ensures that an individual's contribution is able to reach its intended cause directly. It reduces administrative overhead and allows for a more efficient distribution of funds.
- **Accessibility:** The platform accommodates both banked and unbanked populations, providing support to mobile wallets, QR codes and various forms of transaction methods. This ensures that participating in charitable causes is accessible to everyone without having to be dependent on their financial background.
- **Empowerment of beneficiaries:** PureGiving benefits verified NGOs, government charity causes, Waqaf and Zakat centers with streamlined donations and improved visibility of donation causes. They are able to utilize provided tools to monitor updates and outcomes on the donation process, thus building a stronger connection with donors.
- **Emotional Engagement of Donors:** With the feature of personalized dashboards and AI-driven recommendations for each individual, donating is transformed into an emotionally fulfilling journey for donors. They get to see the direct outcomes of each charitable cause. Thus, they are likely to remain more engaged and partake in more charitable causes even after they reach their Zakat maximum.

8. Conclusion

PureGiving is a website to enhance charity and donations through real-time tracking, and direct donation flows to provide a transparent, inclusive and effective charitable giving solution. Even if a donor is unbanked, our platform enables them to make a significant impact while guaranteeing that money is spent effectively and openly. We want to build a system that encourages pure and consistent giving, trust, and long-lasting impact for the underserved communities through features like automated fund allocation, recurring donations, and AI-driven recommendations. PureGiving also onboards Waqf institutions and Zakat centers, ensuring that the beneficiaries are legitimate as well as plans to enable government officials to supervise Nisab rates for Zakat and control the distribution process for fairness and trust

In conclusion, in addition to meeting the needs of donors, PureGiving lays the groundwork for a scalable, inclusive, and significant charitable ecosystem.