# Blockchain Oriented Effective Charity Process During Pandemics and Emergencies

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***Abstract*: The implementation of the "Blockchain Oriented Effective Charity Process During Pandemics and Emergencies" project involves a systematic approach to revamp the existing charitable landscape. This begins with a comprehensive analysis of stake- holder requirements, understanding the nuances of aid distribution during crises. The heart of the system lies in the development of smart contracts that automate resource allocation, donation distribution, and verification processes. The purpose is to ensure that tracking of a person's contribution, and keeping money safe. This will help address the decline in public trust in charities. With blockchain, donations will be much higher publicly. The giver will be able to track his or her donations to help the poor, and beyond. The Donation System uses a blockchain to record everything that is done. Due to such properties of blockchains for data consistency and resistance, it further enhances project transparency and accountability.**

***Keywords*: Blockchain, Database, Donor, Algorithm, Security, Donations.**


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## INTRODUCTION

In recent years, India's charity exposed a variety of problems, which caused a trust crisis towards India's charity among the public, and further led to India's charity being once deadlocked. This paper designs a charity donation system by using a blockchain distributed ledger based on smart contracts made by using the Ethereum platform and software engineering method, aiming to use blockchain to get through the related links of charity donation, to improve the transparency and credibility of donation behaviour. Blockchain technology is a revolutionary technology based on an established and decentral system of blocks which are interconnected. It works upon the concept of decentralized distributed digital ledger. This technology enables cryptographically encrypted and hidden financial transactions among the users using this platform.This system was created by a team of computer engineers and crypto enthusiasts using several technologies for both, the frontend design and backend support which will be mentioned later in this system.

Charity is an important part of a democratic society. It is well-known that there are many incidents in this world that cause terrible losses, whether related to wealth or health and causing severe damage every year. In order to recover from the various types of losses many victims need help from charities that can provide financial assistance for basic needs. Now people love to dedicate themselves to the community. Charity, therefore, is the fastest growing sector in the modern world and has shifted from its traditional organizational system to a crypto-currency-based system. The traditional system around the world suffers from various problems such as lack of transparency, mistrust between donors and charity organizations. There is a need to allow donors to track their donations and deliver openly in social support. Blockchain is a remarkably transparent and dedicated platform for storing these different types of services based on helping the needy. We will therefore propose a blockchain-based charity donation system that serves as a platform for donating money in form of cryptocurrency (Ethereum) to other need users who have requested a donation and all this

happens under high security and full trust. The purpose is to ensure that tracking of a person's contribution, and keeping money safe. This will help address the decline in public trust in charities. With blockchain, donations will be much higher publicly. The giver will be able to track his or her donations to help the poor, and beyond. The Donation System uses a blockchain to record everything that is done. Due to such properties of blockchains for data consistency and resistance, it further enhances project transparency and accountability.

## LITURATURE SURVEY

The paper explores the potential for deploying blockchain within existing organizations to support smooth conduction of charity funds from the donor to the actual needy person using a stable Ethereum based Blockchain oriented platform. In this fast developing world of modernization, some people are becoming too competitive to earn money while others have no clue about getting even a penny. But at the same time, there exist people who wish to contribute to the society out of altruism. There exist many online donation platforms in the world and yet issues concerning extra fees, accountability and processing delay still exist as well as these existing centralized systems for charities are so corrupt that people lose belief in these trustless systems and hence the charities become futile. This paper explores how the blockchain can be leveraged in the philanthropic sector, through charitable donation services via a web- based donor platform. [1].

This paper explores how the blockchain can be leveraged in the philanthropic sector, through charitable donation services in fiat currency or Bitcoin via a web-based donor platform. The philanthropic model is then used for a case study providing humanitarian aid for a community living in a challenging geographical environment with limited internet availability. An SMS based mobile payment system is proposed for provisioning the received donations using the existing GSM network, very basic mobile phones and One Time Password (OTP) security tokens. The proposed scheme is finally evaluated for security while discussing the impact it has on charities and donors.
[ 2].

This paper proposes an approach of decentralisation, cryptocurrency and finance for donations, the system of charity can be improved to a great extent with the added advantage of the involvement of even these people in a conducive way. We propose a system, backed by cryptocurrency transactions, to make the system of charity more transparent and trustworthy where the charity (in form of work) by individuals or organizations is done first and then that work can be sold later as a stock (here we call it a certificate). This will work in a manner similar to the exchange market using crypto-currency. So, people can raise money out of it, just like stocks but finally the money would go to the charities, as the certificates can only be generated by the charity doers. The complete system will be decentralised using Blockchain Technology, Smart Contractsl and Cryptocurrency. This system would facilitate any individual to contribute independently to the society using his time and abilities apart from just money, and ultimately this will lead to an increase in hands towards the amelioration of the society. [3].

The article investigates the potential for blockchain technology to be used for charity reasons. Problems in this field need the introduction of new storage mechanisms and the flow of information between donors, foundations, contribution receivers, and other charity players to assure data privacy, fund integrity, and donation control. Using the blockchain to ensure data security and the capacity to track themovement of funds and transactions would peak the interest of potential donors in non-profit organisations. In this paper, the writers look at the requirements of blockchain-based charity networks around the world. They show how distributed registry systems can be utilized to build a forum for charitable donation making and tracking. During their research, the authors worked with local funds and non-profits to validate the solution, learn more about ecosystem needs, and publish their results in the paper. Donors are wary of how their funds are handled. Blockchain technology is being employed in a wide range of sectors right now. Payments will be made via blockchain technology. The donation and fund-transfer process will be transparent. It is required to construct a single database for tracking donations that will track all donations, transactions and donor information. This article is to illustrate how a blockchain-based framework for tracking donations can be implemented. The System, which is based on blockchain technology, enables contributors, charitable foundations, and recipients with transparent and secure operations. [4].

## AIM & OBJECTIVES

- To create a blockchain-based system that provides donors with real-time, transparent, and immutable records of how their contributions are utilized in charitable efforts during pandemics and emergencies. This transparency aims to build trust and confidence among donors.
- To develop smart contract-driven mechanisms that automate the allocation and distribution of charitable funds and resources, ensuring that aid reaches the intended recipients swiftly and efficiently during crises.
- To utilize blockchain's security features to create a system that safeguards against fraud, corruption, and the misuse of charitable resources, ensuring that aid reaches those in need in a secure and transparent manner.

## MOTIVATION

The motivation behind this rooted in the recognition of several pressing issues and challenges that have been evident during times of crisis, particularly in the context of charitable efforts. Traditional charitable processes often lack transparency, making it challenging for donors to track how their contributions are being utilized. In times of pandemics and emergencies, trust and accountability are paramount. Blockchain technology offers an immutable ledger that ensures all transactions are recorded transparently. Donors can see exactly where their contributions are going, enhancing trust in the charity process. During crises, rapid and efficient resource allocation is crucial. Blockchain's smart contract technology allows for automated, condition-based fund distribution. This reduces administrative delays and ensures that aid reaches the intended recipients promptly, potentially saving lives in emergency situations. Blockchain's security features can help prevent fraud, corruption, and misallocation of funds.

## SYSTEM ARCHITECTURE

1. User Registration and Authentication: Donors, charitable organizations, and beneficiaries create accounts and authenticate their identities using the system's digital identity verification module.
2. Donation Process: Donors make contributions to specific causes or campaigns using various methods, including cryptocurrencies and traditional currency.
3. Aid Request Submission: Beneficiaries can submit aid requests, detailing their needs and circumstances through the system.
4. Reporting and Analytics: The system offers reporting and analytics tools to monitor sales trends, inventory turnover, and profitability.
5. Resource Allocation: The system's resource allocation module assesses the aid requests and uses predefined criteria, such as location, urgency, and need, to allocate resources efficiently.
6. Blockchain Transactions: All transactions related to donations, aid requests, and resource allocation are recorded on the Blockchain, ensuring transparency and accountability.
7. Aid Request Submission: Beneficiaries can submit aid requests, detailing their needs and circumstances through the system.
8. Reporting and Analytics: The system generates reports on the impact of donations and provides data analytics tools to optimize resource allocation and decision-making.

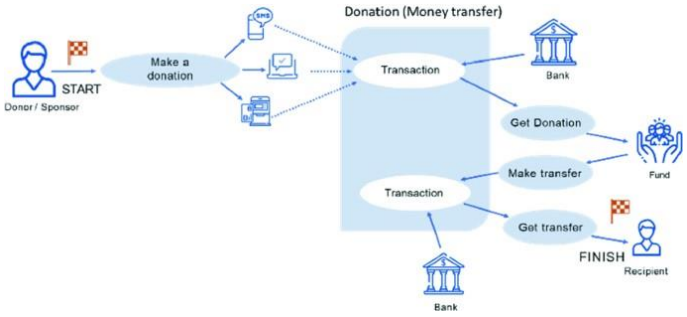


**Fig -1**: System Architecture Diagram

## ADVANTAGES

- Donations are secured through cryptographic techniques, making it extremely difficult for malicious actors to manipulate or steal funds.

- Donations and transactions are recorded on a decentralized and immutable Blockchain ledger. This ensures that all transactions are transparent and tamper-proof.
- The transparency and security of Blockchain can enhance donor trust, as they can see exactly how their donations are being used.
- Blockchain can provide real-time updates on donation progress and outcomes, encouraging more engagement from donors.
- Blockchain can provide a level of anonymity and data privacy for donors who wish to remain anonymous.

## FUNCTIONAL & NON-FUNCTIONAL REQUIREMENTS

**Nonfunctional Requirements**

User Registration and Verification: The system should allow donors, charitable organizations, and beneficiaries to register their accounts securely.

Donation Management: Donors should be able to make one-time or recurring donations in various forms, including cryptocurrencies and traditional currency.

Communication and Messaging: The system should facilitate communication between donors, charitable organizations, and beneficiaries.

Data Security and Fraud Prevention: The system should implement robust security measures to protect against cyber threats and fraudulent activities.

**Nonfunctional Requirements**

1. Security
2. Authentication and Authorization
3. Reliability
4. Usability
5. Performance
6. Scalability

## SYSTEM REQUIREMENTS

**Software Used:**

- Operating System : Windows xp/7/8/10
- Programming Language : Python
- Software Version : Python 4.4
- Tools : Anaconda/pycharm
- Front End : Python

**Hardware Used:**

- Processor - Pentium IV/Intel I3 core
- Speed - 1.1 GHZ
- RAM - 512 MB(min)
- Hard disk - 20 GB
- Keyboard - Standard Keyboard
- Mouse - Two Or Three Button Mouse
- Monitor - LED Monitor

## CONCLUSION

In conclusion, the concept of a "Blockchain Oriented Effective Charity Process During Pandemics and Emergencies" has the potential to reshape and enhance the landscape of charitable activities in times of crisis. The traditional methods of aid distribution often suffer from lack of transparency, accountability, and efficiency, hindering timely and impactful assistance to those in need. By harnessing the power of blockchain technology, a transformative shift can be achieved. Through automated smart contracts, transparent ledgers, and real-time tracking, this approach ensures that resources are allocated, distributed, and utilized in a manner that is both transparent and tamper-proof. The system's ability to prevent fraud, reduce administrative costs, and enable collaboration among various stakeholders further strengthens its effectiveness. Donors can witness the direct impact of their contributions, and beneficiaries can access aid more swiftly and fairly. This forward-thinking approach has the potential to revolutionize the charitable sector, not only during emergencies but also in ongoing development efforts. By combining technological innovation with the core principles of humanitarianism, this solution offers a way to deliver assistance with greater precision, accountability, and compassion, ultimately leading to a more resilient and responsive global community.

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