

A Decentralized Approach To Fundraising

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1.ABSTRACT

The objective of this paper was to propose a decentralized approach to fundraising. Decentralization is taking away control from a central authority. A blockchain network called Ethereum was used to raise funds for a campaign. Smart contracts written upon Ethereum ensures that the campaign creator or admin does not misuse the funds provided to him/her. A person can contribute to any campaign of their choice. Ether is the cryptocurrency which is used as the trading token on the entire platform. After contributing, the contributor and the campaign admin are both part of a smart contract which locks the funds. After the desired funds are collected before the mentioned deadline, admin can create spending requests for using the funds. Contributors can vote for the spending request and if more than 70% of the contributors approve of the request, the funds then are free for the admin to use

2.INTRODUCTION

A. The Problem

Charities, NGOs and other similar organisations has always been on the forefront when it comes to aiding for any social cause. These organisations are always a great way of helping the community where needed. These Organisations rely on donations and grants from the masses for financing their activities.

Through these organisation any person can contribute for the right cause and show his/her support to different communities. But these methods also face a huge problem which *is the lack of transparency*

Any person can contribute to the campaign of their choice but after the funds are transferred, it is very difficult to gurantee whether the funds collected will be used for the mentioned cause or not.

It may even encourage toxic organisations to raise funds in the name of any Social cause and then use those funds for personal benefits.

B. Solution

It is very clear from the problem mentioned above that transparency is a very important factor in fundraising. So if somehow a proper transparent environment can be established between the contributor and these organisations then that may solve the Problem.

Transparency can be achieved through Blockchain so we tried to use this technology for creating a decentralized fundraising platform.

A blockchain platform can be used to ensure that the contributor is aware of the flow of funds and can donate without any extra worries.

There are also other things like *locking the funds* which means that the funds can be locked and can not be used without the permission of contributors.

We decide to create a platform which can be used for creating and contributing a campaign in a decentralized way

C. The Platform

CANARY is a decentralised social impact network built on the Ethereum blockchain. It

helps social organisations (charities, NGOs, social enterprises) to run projects transparently, using smart contract-based incentives to ensure their impact is independently verified and accessible to everyone.

This makes it much easier for funders (philanthropic organisations, impact investors, small donors) to identify and scale social projects that demonstrably work, while reducing due diligence, reporting and other transaction costs.

3.METHODOLOGY

Ethereum Smart Contract

Blockchain is essentially a database where the data is updated only if the community called miners and validators agree to it. Ethereum is one of the earliest blockchain networks and also the biggest network after Bitcoin. But unlike bitcoin, Ethereum was extended even further and prepared as a platform which can be used by other people for creating decentralized organisations.

Ethereum Smart contracts are used in our Solution for ensuring that fundraising and campaigning can be achieved in a decentralized way

Ethereum smart contracts are written in the programming language **Solidity**. Through solidity it is possible to code smart contracts which are nothing but a set of rules that are written for the mentioned ethereum addresses for the mentioned cause.

When an organisation creates a campaign, they are essentially deploying a pre-coded Smart contract on the Ethereum Blockchain.

The people who are contributing to the campaign are sending money to the smart contract deployed to the Ethereum Blockchain.

All the identities on the blockchain(creator and contributors) are represented in the form of a hexadecimal encoded string called Ethereum address. Every entity has a unique ethereum address.

The Smart Contract involves the addresses of both the creator and the contributors. It also store details like *minimum contribution, deadline and goal*. When people contribute to a campaign, their addresses and donations are added to the smart contract.

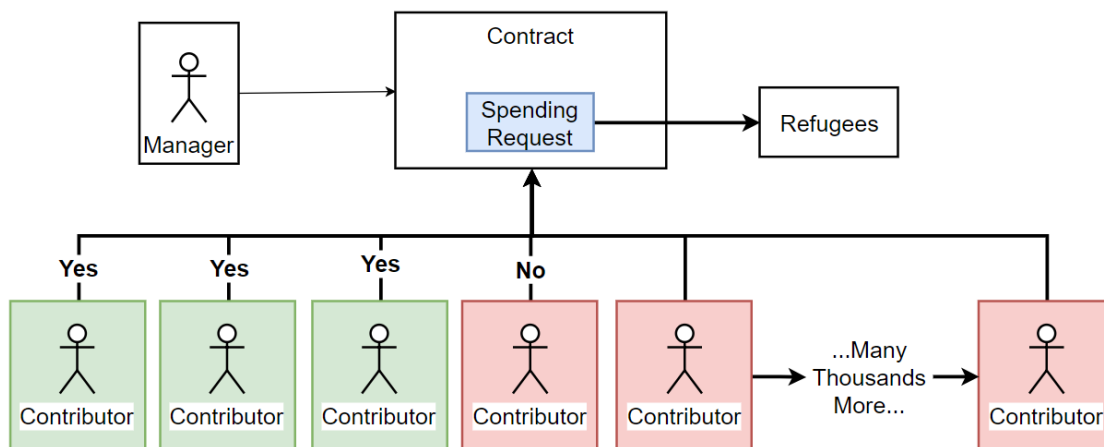


Fig.no.1: A Single Campaign Contract Working

A **Spending Request** is created every time the campaign admin or manager wants to use certain amount of funds. The request involves details like *funds required, reason or description and recipient*

An example of a Request is given below

Request Struct		
Name	Type	Purpose
description	string	Describes why the request is being created.
value	uint	Amount of money that the manager wants to send to the vendor
recipient	address	Address that the money will be sent to.
complete	bool	True if the request has already been processed (money sent)

Fig.no.2: A Spending Request Structure

A **Voting mechanism** is also put in place so that the contributors can vote for each request and if more than 70% of the contributors vote for a request then the manager can use the funds mentioned in the spending request

4. Discussion

A. Data Storing

Ethereum is an immutable and unhackable database that means that once something is stored on the blockchain, it is going to stay their for eternity. So if required we can store data on the ethereum. But there are a lot of issues associated with data storing on blockchain.

Storing data on ethereum cost money . For every update you make to the blockchain, its going to cost you some amount of ether. That's why it is important to limit the amount of data being stored on the blockchain. But then how can we create platforms which deals with large amount of data ? That brings us to our next discussion.

B. Onchain and Offchain Storage

Onchain means storing data on the ethereum blockchain whereas off-chain means using other alternatives for storing the data.

In General when we create Decentralized applications with large data requirement, we separate data into two types –

1. Data essential to business logic of the platform
2. Data essential for user Experience

B. Centralization of Trivial Data

In Our Platform **Canary**, all the data that is unrelated to the business logic is stored on the centralized storage called MongoDB. It is a non relational database

Also the multi-part data like files and images are stored on Google Cloud Storage

5. CONCLUSION

Fundraising is and always will be a great measure of tackling problems and difficulties of our Society and Environment whether its helping the people who suffered because of a natural disaster or just helping poor kids in their studies. And it is our job as developers to ensure that it can be done as efficiently as possible.

The Platform Canary is still in early stages and can be improved for future uses. We can use data stores like IPFS or Swarm for completely removing the centralized aspects of the platform.

Protocols like Whisper Protocol can be used for establishing peer to peer connectivity between contributors and creators.

Canary is certainly not 100% free from fraud and can be improved further by adding even more smart contracts but it certainly is a nice initiative in establishing transparency between donors and organisations

6. ACKNOWLEDGEMENT

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7. REFERENCES

[1] https://www.sapien.network/static/pdf/SPNv1_3.pdf

[2] <https://github.com/alice-si/whitepaper/blob/master/Alice%20white%20paper%20-%20FV%200.9.pdf>

[3] <https://s3.amazonaws.com/gohelpfund.com/assets/whitepaper.pdf>

[4] <https://github.com/ethereumbook/ethereumbook/blob/develop/book.asciidoc>