Crowd Funding Platform Using Blockchain

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Abstract—**Crowdfunding has revolutionized the way individuals and organizations raise funds for their endeavors. With the rise of online platforms and social media, this innovative method of fundraising allows entrepreneurs and non-profit organizations to reach a global network of potential investors and donors. Trust and credibility are key factors in the success of crowdfunding, and the integration of blockchain technology has taken this to new heights. The decentralized nature of blockchain brings a new level of democracy to the fundraising process, giving donors and recipients greater freedom, transparency, and incentives to participate. The trend towards distributed autonomous organizations (DAOs) has further disrupted traditional fundraising methods, as more capital is being directed towards blockchain-based crowdfunding campaigns. This has made fundraising more accessible, flexible, and efficient, freeing it from the limitations of centralized gatekeepers. Crowdfunding with blockchain technology has immense potential for growth and impact, and it is an exciting development in the world of fundraising**

Index Terms— **Keywords — Blockchain, DAOs, Decentralized, Transparency.**

I. INTRODUCTION

Crowdfunding has emerged as a powerful tool for sourcing funds, offering an alternative to traditional financing methods. With the integration of blockchain technology, crowdfunding has taken on a new level of innovation, allowing for the safe and secure financing of various projects and initiatives, such as start-ups, new products, and welfare causes. The decentralization and transparency provided by blockchain technology have transformed the interaction between innovators, donors, and consumers, giving donors the assurance of a safe investment and innovators a platform to launch their ideas.

The decentralized application built on the Ethereum blockchain ensures that all information related to campaigns, contributions, and transactions is stored on a secure and decentralized network, visible to all users. This eliminates the need for centralized servers and makes the process more efficient and less susceptible to fraud. With the creation of a campaign taking only a few minutes, anyone can easily share their project and invite contributions from a wide network of supporters. The use of smart contracts further strengthens the integrity of the system, making it a truly innovative solution in the world of crowdfunding.
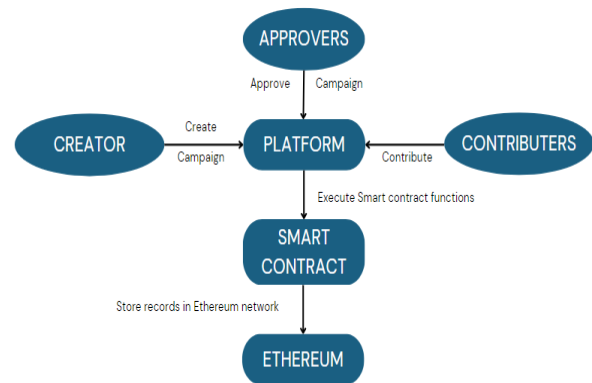
—Fig 1: System Architecture

II. LITERATURE REVIEW

A. Literature Review

1) Crowdfunding Platform Using Blockchain Technology June 2022: The primary objective of the authors is to address the limitations of existing crowdfunding platforms by leveraging a decentralized application powered by the Ethereum Blockchain. By doing so, they aim to provide a platform where all campaign details, donations, withdrawals, and funds are stored on an open blockchain network that is accessible to everyone. With a shared ledger, transactions only need to be recorded once, eliminating the need for redundant efforts. This approach improves the transparency and security of the crowdfunding process, ensuring that all transactions are immutable and irreversible.

2) Applying Ethereum Smart Contracts to Blockchain-Based Crowdfunding System to Increase Trust and Information Symmetry July 2021: The focus of the author's investigation is the creation of a

crowdfunding platform utilizing the Ethereum Blockchain. This platform's key feature is a smart contract that tracks the status of user-generated contracts and executes them automatically when the conditions are satisfied. The usage of this system leads to greater transparency, minimizing information asymmetry. However, the study does not cover the use of smart contract tokens, which may be difficult to comprehend for users lacking a fundamental understanding of blockchain technology.

3) Study on Crowdfunding Platform At International Conference Of ICT: This study proposes an innovative approach to fund the development of smart cities using crowdfunding. The study examines the investment behaviour of individuals participating in crowdfunding and their response to such platforms. The idea is presented in a theoretical manner, providing a framework for the creation of a crowdfunding platform for smart cities. It should be noted that the framework proposed in this study is centralized, which means it is controlled by a central authority.

4) Study On Conventional Crowdfunding Platform At Shingai: This study employs text analytics to examine the effect of sentiment orientation on crowdfunding. The proposal aims to eliminate intermediaries in crowdfunding applications. To achieve this goal, a blockchain-based crowdfunding platform is proposed, although no detailed framework is presented. The study concentrates on the behaviour of investors and developers in crowdfunding, but the platform does not account for the self-interested motives of developers.

5) Crowdfunding - A Literature Review And Research Direction: The literature on crowdfunding primarily concentrates on the motivations behind capital-seeking parties, factors contributing to crowdfunding success, and legal limitations of equity-based crowdfunding. However, most of these platforms are confined to a single country, and governmental access is essential for their operation.

6) Kickstarter, Facebook: This study employs social network analysis to examine the correlation between the success of crowdfunding projects and the social networks of initiators and media activities. However, the platform utilized in this research is not available on GitHub.

7) Interviews, Kickstarter, Indiegogo, and Rockthub: This research intends to examine the amount of effort that capital-seeking parties need to exert in order to prepare and conduct a successful crowdfunding transaction. However, the white paper for this study is currently unavailable, creating concerns over the trustworthiness of the research among potential readers. The lack of supporting documentation might cause doubts in the minds of readers regarding the accuracy and validity of the results.

B. Survey of Existing Systems

1) Crowdfunding platform in a centralized system: In a centralized crowdfunding platform, building a trustworthy relationship between the product team and supporters is crucial. The product team relies on receiving funding based on project progress and completion, while supporters expect their funds to be allocated properly and refunded if the project fails. The crowdfunding platform serves as a middleman, charging significant fees to both the product team and supporters to cover risks such as incomplete projects or lack of further support. However, the need for trust in the platform and high fees may deter potential supporters and product teams.

2) Research of Charity: Researchers have proposed various methods to increase the credibility of charity organizations. For instance, Liu Na has suggested the need to supervise charity in law, administration, industry, and society. Bi Rui Xiang has concluded that Chinese charity organizations have low financial information disclosure. Yu Yu Xi has recommended improving the liability system and government supervision to restrict the power of charity organizations. Wang Jian and Xu Yuchao have designed a charity donation information management system to manage and publicize charity donations. Various other researchers have explored the use of blockchain technology to manage and increase transparency in charitable donations, including the use of Bubi blockchain and Ethereum platforms. Danushka Jayasinghe et al. have even built a Bitcoin charity platform based on blockchain technology to facilitate safe and convenient donations to difficult areas without an Internet connection. These studies collectively inform our proposed new model of a charity system that leverages blockchain technology.

C. Limitations in Existing System / Research Gap

1) High Fees: Crowdfunding platforms have become an increasingly popular option for startups to

raise funds. However, one downside of these platforms is the fees that are charged. These fees can vary from platform to platform and may be a fixed amount or a percentage of the total amount raised. For startups, who are often operating on tight budgets, these fees can be a hindrance to accessing the funds they need. It is important for entrepreneurs to carefully consider the fees associated with different crowdfunding platforms before deciding which one to use.

2)Scam Campaigns: While crowdfunding platforms can be a valuable source of funding for startups, there are certain risks associated with investing in these campaigns. One such risk is the possibility of falling victim to a scam campaign. Unfortunately, it is not uncommon for some fraudulent campaigns to appear on crowdfunding platforms, which can result in investors losing their entire investment. This can be damaging not only for the affected investors but also for the reputation of crowdfunding platforms as a whole.

3)Non-Transparent: Transparency is a critical aspect of any financial transaction, and this is no different when it comes to crowdfunding platforms. However, in some cases, the transactions on these platforms may lack transparency, making it difficult to trace the source of the funds. This can be a concern for investors who want to know where their money is going and how it is being used. It is crucial for crowdfunding platforms to ensure that all transactions are transparent, with clear documentation and disclosure of the flow of funds.

4)Centralized Authority: One concern is the centralized authority that controls and manages the data. This centralized authority has the power to change and modify the data, making it vulnerable to data theft and loss in the event of a cyberattack or backup failure. This centralized control can be a risk for both investors and startups, as it puts their data and investments in the hands of a single entity.

III. METHODOLOGY

Campaign Creation: Users can create a Campaign by connecting their Metamask wallet to the web application. After connecting their wallet, they can create a unique campaign by entering the campaign details such as Campaign Title, Campaign Photo, Campaign Details, Fund-Raising Amount. All the

contract code is written in Solidity which is used to deploy the contract in the blockchain platform. A new campaign is created by making an instance of the Campaign factory. For every transaction, a specific amount of gas fee is required for processing. Gas fee is the amount of money (very small) to make that transaction a valid one. Thus, when the user clicks on "Create Campaign" button a new campaign will be created with the gas fees associated. After a few seconds, the transaction will be completed and a new block will be added to the blockchain with the contract address.

After the campaign is created it will be displayed in the home page of the website. Other users can interact with it. Once the campaign is created and added to blockchain then an E-Wallet such as Metamask is required to manage the transaction associate with it.
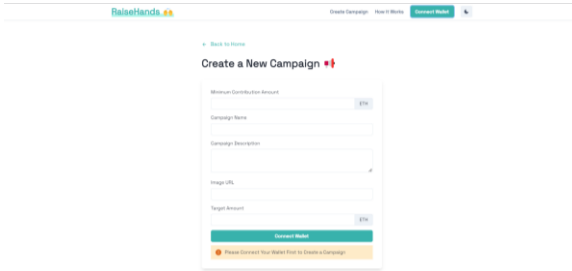
Contributors & Approvers: Contributors are the users who contribute and fund the campaigns. After connecting their Metamask wallet to the application, they can search for the campaigns they want to fund. The funds will go to the address of the campaign and not to the creator of the campaign, thus making the process more efficient and anti-fraudulent. Approvers are the contributors who have contributed more than the Minimum Contribution, and they can approve the withdrawal requests.

Withdrawal of Funds: Contributors who have contributed more than a certain amount are known as approvers and are given the power to either approve or deny the request. This process ensures that the funds are being used in a manner that is agreed upon by the community of investors. In order to withdraw the funds, the approval of at least 50% of the approvers is required. Once approved, the funds will be transferred to the address that has been decided upon by the group. All transactions and decisions made during this process are securely stored in the blockchain, ensuring that they are transparent and cannot be altered or manipulated. This level of transparency and community decision-making adds an extra layer of security to the crowdfunding process, making it a more trustworthy and reliable way for startups to raise funds.
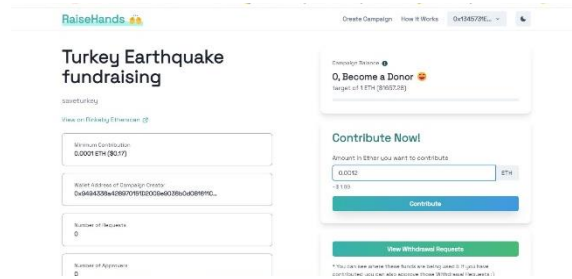
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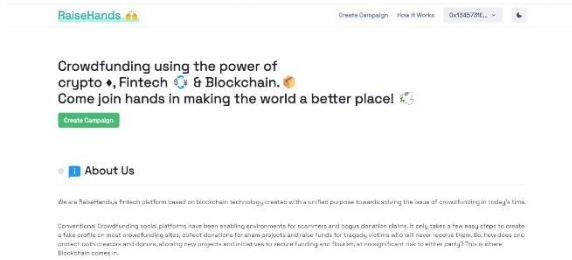
—Fig 2: Homepage

—Fig 3: Campaign Creation

—Fig 4: Contributors & Approvers

V. CONCLUSION

In this paper we conclude that the proposed web-based crowdfunding system developed using blockchain technology addresses the critical issues faced by traditional crowdfunding platforms by leveraging Ethereum smart contracts and the solidity programming language this system offers enhanced trust transparency control over funds and secure storage of transactions the use of Infura provides a reliable connection between the web system and the Ethereum network ensuring that all transactions are recorded in a safe and credible manner this innovative approach to crowdfunding eliminates the need for charging fees and offers a more secure and trustworthy way for startups to raise funds overall this system offers a promising solution to the challenges faced by traditional crowdfunding platforms and it has the potential to revolutionize the way startups are funded.

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