Decentralized Crowd funding with Blockchain

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Abstract **-** Crowd funding is a new and innovative strategy for funding different sorts of ventures, wherein individual founders of the ventures can demand funds. A decentralized user network with transaction tracking in an accessible distributed ledger is made possible by blockchain technology. Blockchain is a unique, autonomous, and transparent mechanism that maintains the transparency of party trades. Blockchain's features enable a transparent and cost-effective platform for a multitude of applications. Based on the need for an effective platform to create smart nations and the inherent advantages of blockchain technology, a global crowdfunding platform is proposed. Blockchain is secure because it can be used with smart contracts to establish a campaign aimed at raising money in a decentralized way. This has liberated fundraising from the constraints of centralized methods and increased its accessibility, flexibility, and efficiency. Crowdfunding with blockchain technology has immense potential for growth and the required quantity of money. This is because a large number of people utilize social media and the Internet these days, which allows the project founder to impact, and it is an exciting development in the world of fundraising.

Index Terms- Blockchain, Crowdfunding, Decentralized Smart Contracts, Campaign.

I. Introduction

Every transaction is recorded in an uncorruptible digital ledger called the blockchain. Since the system is dispersed, all of the records are. stored on each decentralized network node. Ethereum permits "smart contract" apps to operate on the blockchain. The Ethereum Virtual Machine is used to execute all smart contracts. To put it simply, crowdfunding is the process of obtaining money for a project or campaign by a group of people rather than through traditional channels like banks or loan providers. Three key parties were involved in the crowd funding action: the project managers, the crowd funding site, and the contributors. Crowd funding's primary advantage is its ability to quickly raise

quickly contact the public through these channels. Obtaining funds for creative project ideas is made simple with the help of crowdfunding.The issue with the

present crowd funding platforms is that they occasionally commit fraud and charge exorbitant fees. By using blockchain technology to implement a crowd funding approach, these kinds of issues can be avoided. by the use of Peer. Peer-to-peer smart contracts eliminate the typical transaction and platform costs found on other crowd funding websites like mystartr.com, kickstarter.com, and indiegogo.com.

The first advantage of crowd funding is that it facilitates more successful connections between worldwide funders and entrepreneurs. The second advantage is that investors may get access to more information in the project's early phases. Investors will find this information to be quite helpful, which may increase their desire to contribute to such crowdfunding initiatives. But even with their numerous benefits, crowdfunding platforms still have a lot of shortcomings that need to be fixed. Fraud cases, which contend that online fundraising exposes contributors to fraud as standard legal and reputation protection procedures may not be successful, are one of the main issues with traditional crowd funding platforms. This can be countered by integrating smart contracts into the mechanism for crowd funding, it can establish a contract holding contributors' funds until a specific date or objective is met. Depending on the decision, the funds will either be given to the project owners or securely refunded to the contributors. A blockchain could be defined as a distributed database of transaction records shared by all parties involved.

II. Literature Survey

Numerous blockchain-related investigations have been conducted over the last several years, and the number is increasing every day. Blockchain technology has various advantages and may be applied in a range of businesses, but more research is required because this technology is still in its development stages.

The process of raising modest sums of money from a large number of people is known as crowd funding. Products and businesses that might not have been able to raise money on their own are frequently the most successful ones on crowd funding sites. Crowd funding impacted diverse entities, facilitated by blockchain technology for online fundraising campaigns. It serves businesses, entrepreneurs, NGOs, and individuals, addressing non-profit, personal, and business causes. While crowdfunding offers opportunities, concerns persist due to lack of regulation, fraudulent campaigns, and project delays. Blockchain is seen as a solution, ensuring secure transactions in crowd funding platforms [1].

The integration of blockchain technology, particularly through smart contracts, ensures a secure and transparent crowd funding process. The study aims to enhance user interaction by providing interactive platforms for campaign development and financial contributions, fostering a dynamic relationship between campaign creators and donors. Notably, the use of blockchain technology, beyond its cryptocurrency roots, demonstrates its versatility across industries, with crowdfunding websites emerging as a promising application area. The literature survey exploring the advantages and challenges associated with this novel approach, emphasizing the role of Ethereum smart contracts in mitigating issues such as fraud, lack of control, and ensuring the successful execution of crowd funding campaigns within designated time limits [2].

Crowd funding is an innovative avenue for startup fundraising, emphasizing its diverse forms and the overarching goal of securing funds for the production or provision of services. Acknowledging the crucial role of the internet and social media in this process, the abstract highlights blockchain as a decentralized and secure technology fostering transparency in interactions. Trust between investors and stakeholders forms the bedrock of crowd funding, and blockchain-based smart contracts emerge as a promising tool. The literature review is about to go into the principles of crowd funding, its existing constraints, and the revolutionary effect of blockchain technology in augmenting legitimacy and drawing significant financing. Additionally, the paper aims to explore emerging blockchain-based crowd funding systems, providing insights into their structures, implementations, and outcomes. [3]

The main objective of the developers is to use a decentralized application powered by the Ethereum Blockchain to overcome the shortcomings of current crowd funding platforms. As a result, they intend to provide a platform where all mission specifics, withdrawals, and cash are stored on an accessible open blockchain network. Exchanges should only need to be recorded once when using a shared ledger, eliminating the need for repeated efforts. This method relies on the simplicity and safety of the crowd sourcing platform; it is non-transferable and non-reversible to ensure every transaction. [4]

The critical point of the creator's examination is the production of Smart contracts. Most importantly, smart contracts will empower individuals to distinguish the two sides of the exchange, so there is a lesser likelihood of extortion. Smart contracts are likewise quicker than regular asset moves since they are mediator free. Speed improvement can help in times when deadlines arrive. This technology will fabricate more transparent correspondence among investors and new companies, so blockchain-empowered crowd funding projects have higher efficiency on account of smart contracts [5].

III. Methodology

Blockchain is an immutable, decentralized database that facilitates asset tracking and transaction recording within an enterprise network. Physical or intangible assets are both possible. Almost everything of value may be listed and sold on a blockchain network, reducing risk and boosting productivity for everybody involved. All users of the network have access to the distributed ledger and its unchangeable transaction record. This shared ledger eliminates the redundancy of effort present in traditional business networks by recording transactions once.

No participant may change or tamper with a transaction once it has been added to the shared ledger. Errors in transaction records must be corrected with a new transaction before both transactions are shown. Information is stored on the blockchain using a set of instructions called a smart contract, which is automatically executed to speed up transactions. In addition to a host of other things, a smart contract can define requirements for corporate bond transfers and the minimum payment for travel insurance. This can be achieved by implementing the following steps: -

A} User Onboarding and Campaign Creation:

By linking their MetaMask wallet to the website and providing information such as the Campaign Title, Photo, Details, and Fundraising Goal, users may create personalized campaigns. The Campaign Factory is used to launch a new campaign. Processing each transaction costs money for gas. The moment the user selects "Create Campaign," a new campaign with related gas costs is created. The transaction is finished after a short processing period, and the agreement address is added to a new block that is added to the blockchain. After then, the established campaign is shown on the home page of the website so that other users can interact with it. Any further campaign-related transactions must be handled with an e-wallet such as MetaMask.

B} Givers, Approvers and Smart Contracts:

The clients who fund and support the initiatives are known as patrons. They can search for the campaigns they need to fund by later connecting their MetaMask wallet to the app. Because the money will flow to the campaign's location rather than its creator, the process will be more fruitful and unfriendly to dishonesty. Beneficiaries who have contributed more than the Base Commitment are known as approvers, and they are able to bolster withdrawal requests.

C} Transparent Fund Handling:

Patrons who have offered in excess of specific sum are referred as approvers and are provided the ability to rather endorse or to deny the solicitation. Following interaction guarantees that the funds will be utilized in a way that is settled upon by the local area of financial backers. To pull out the funds, the endorsement of no less than half of the approvers is required. All exchanges and choices made during this process are safely put away in the blockchain, guaranteeing that they are straightforward and can't be modified or controlled. This enables user engagement as investors contributing to campaigns, establish an approver’s role for transparent oversight of withdrawal requests, and implement a consensus-based blockchain ledger for secure transaction recording making it a more dependable and solid way for startups to raise funds.

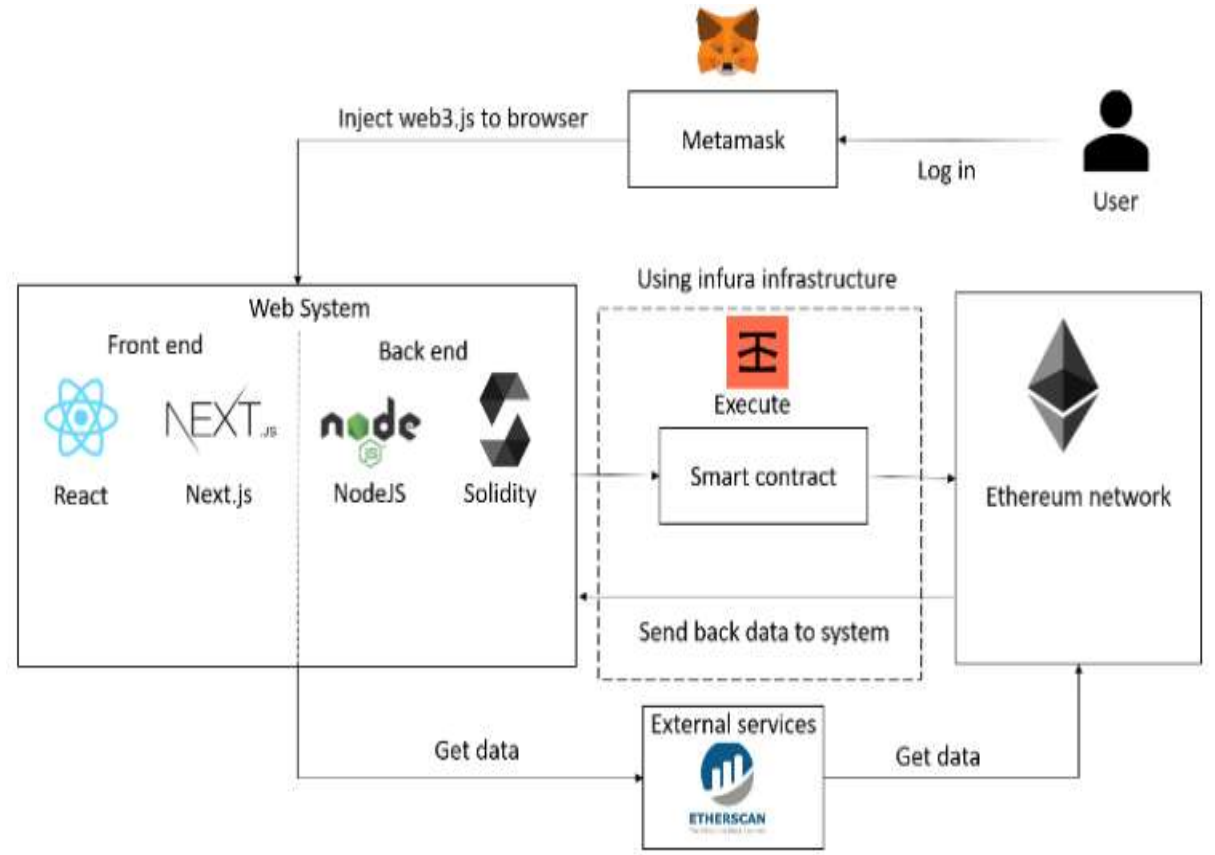

Fig.1. System architecture

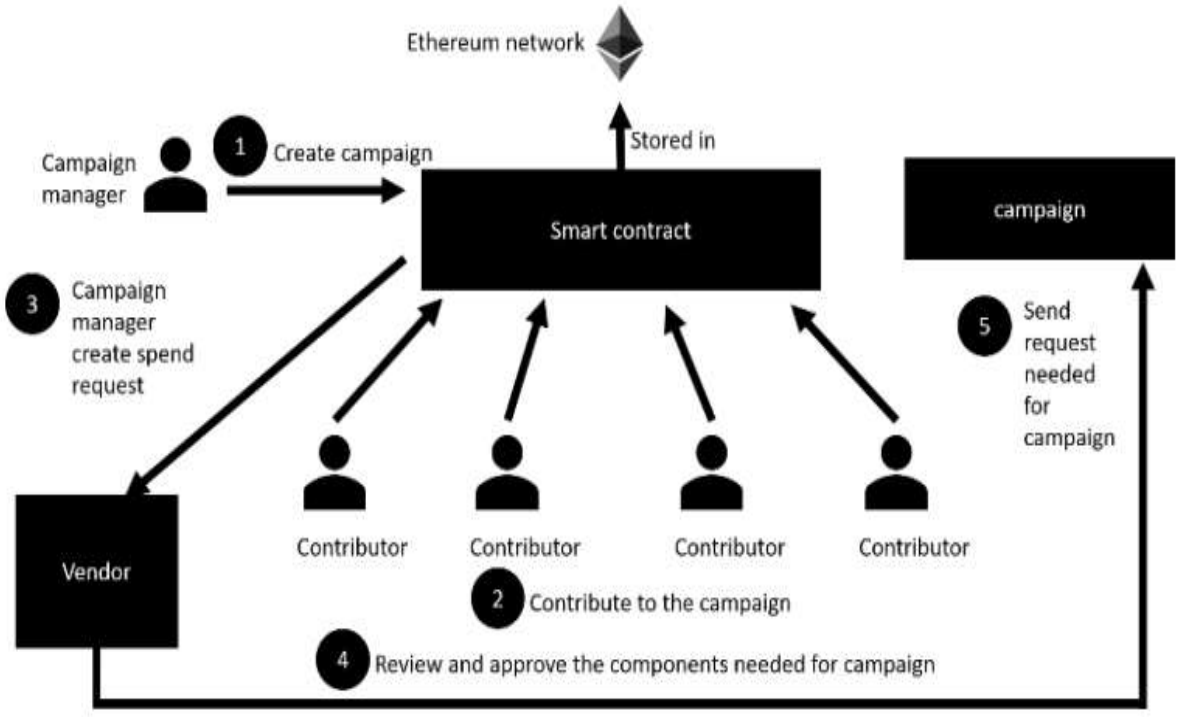

Fig. 2. Ether flow in proposed model

IV. Future Scope

Blockchain's impact on crowdfunding is substantial, offering endless potential. The future envisions widespread adoption of blockchain for secure online transactions globally. Specifically, in crowdfunding, blockchain, especially through Ethereum smart contracts, addresses common issues of lack of regulation and fraud. This project aims to use smart-contracts having internal consensus to automatically execute crowdfunding contracts, preventing fraud and ensuring timely project completion.

V. Conclusion

In conclusion, crowdfunding using blockchain-based technology is a new and innovative concept. Successful coding and deployment using Solidity mark initial progress. The decentralized web app, though exploratory, offers functionalities for project creation and contribution. Challenges, both legal and technical, remain. The evolving blockchain landscape promises a bright future for our proposed work, suggesting ample room for improvement in creating a more secure and user-friendly crowdfunding application.

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