

Peer To Peer Fund Raising using Blockchain

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Abstract— Crowdfunding has emerged as a transformative financial model in the contemporary business landscape, providing a decentralized avenue for entrepreneurs, creatives, and innovators to secure funding for a wide range of projects. This Project explores the multifaceted nature of crowdfunding, encompassing its origins, evolution, and the diverse platforms that facilitate this alternative form of financing. The study delves into the key mechanisms and principles that underpin successful crowdfunding campaigns, emphasizing the role of social media, community engagement, and trust-building in fostering financial support. Furthermore, the project investigates the impact of crowdfunding on traditional funding channels, examining how it has disrupted conventional investment models and empowered individuals and small businesses. The project also addresses the challenges and risks associated with crowdfunding, including issues of accountability, regulatory concerns, and the potential for project failure.

Index Terms— MetaMask, Web System, External Services, Ethereum Network, Blockchain, Smart Contract, Taxation, Crowd Funding

I. INTRODUCTION

In recent years, the intersection of crowdfunding and blockchain technology has given rise to a paradigm shift in the way projects are funded and financial transactions are conducted. This introduction explores the symbiotic relationship between crowdfunding and blockchain, shedding light on how the integration of decentralized ledger technology is revolutionizing the landscape of fundraising and investment. Blockchain, initially designed as the underlying technology for cryptocurrencies like Bitcoin, has evolved into a robust and transparent system for recording and verifying transactions. Its decentralized nature, characterized by distributed ledgers and smart contracts, presents an innovative solution to longstanding challenges in traditional crowdfunding. Crowdfunding, as a concept, has democratized finance by enabling individuals, startups, and organizations to access capital directly from a global pool of backers. Traditional crowdfunding platforms, while effective, have faced challenges related to trust, transparency, and intermediary costs.

Recent years have seen a dramatic convergence of blockchain technology and crowdfunding, which has completely changed the way that financial transactions and project fundraising operate. A paradigm that not only reshapes existing funding techniques but also improves transparency and confidence in the financial ecosystem is the result of this symbiotic interaction. Blockchain, which was first envisioned as the underlying technology for cryptocurrencies like Bitcoin, is at the center of this change. Its development into a robust and transparent transaction recording and validation system has made it a game-changer in the investing and fundraising industries. The ideas of transparency and trust have become essential to any financial system's survival in the modern world of financial transactions. Financial transactions are based on trust, and transparency is essential to ensuring that

stakeholders are aware of how their money is being spent. With the current climate of skepticism and worries about the accuracy of financial transactions, it is especially important that crowdfunding sites use blockchain technology. The capacity of blockchain to create an unchangeable and impenetrable transaction ledger is its primary contribution. Since every transaction is dispersed and recorded over a network of nodes, it is nearly impossible for one entity to tamper with or change the transaction history. Because of its intrinsic transparency, every person taking part in the crowdfunding process may independently confirm and validate the money flow, which builds trust between all parties.

Furthermore, crowdfunding platforms can solve trust and credibility problems that have historically beset traditional fundraising methods by utilizing blockchain technology. In order to ease transactions, traditional platforms frequently rely on middlemen, which adds layers of complexity and possible sites of failure. Blockchain, on the other hand, offers a decentralized, peer-to-peer network for fundraising, doing away with the need for middlemen. In addition to lowering the expense of using middlemen, this direct communication between project creators and backers improves the speed and effectiveness of the fundraising process.

The utilization of funds is likewise transparent thanks to blockchain. Automated and verifiable execution of predetermined terms is made possible by smart contracts, self-executing code incorporated in the blockchain. This offers an extra degree of protection and responsibility by guaranteeing that funds are only issued if specific requirements are satisfied. Because every transaction and fund allocation is traceable on the blockchain, offering an unambiguous and auditable record of financial activity.

Essentially, crowdfunding platforms are able to establish a more dependable and accountable fundraising environment by utilizing blockchain technology. In addition to addressing the issues with credibility and trust that come with traditional fundraising, blockchain's openness, immutability, and efficiency open the door to a more safe, accessible, and inclusive financial environment. This breakthrough ushers in a new era of trust and openness in crowdfunding by bringing about a fundamental transformation in the way financial interactions are carried out.

II. LITERATURE SURVEY

[1] This paper explains about Financial backing and also tells us about a mechanism for validating business ideas and creating brand awareness. The paper's motivation stems from the desire to contribute to the evolving landscape of crowdfunding and to develop a project that educates the new generation about alternative funding mechanism.

[2] In this paper the authors recognize crowdfunding not only as a means of financial backing but also as a mechanism for validating business ideas and creating brand awareness.

[3] Crowdfunding using Blockchain." It investigates the role of technology in crowdfunding, emphasizing the potential of blockchain to enhance transparency, security.

[4] This paper discusses about the innovative approach of using blockchain in crowdfunding, acknowledging the rising significance of technology in reshaping financing methods.

[5] This paper discusses the revolutionary role of crowdfunding and its evolution with online platforms. It highlights blockchain's contribution, emphasizing decentralization's democratic nature.

[6] The introduction discusses the revolutionary role of crowdfunding and its evolution with online platforms. It highlights blockchain's contribution, emphasizing decentralization's democratic nature.

[7] This paper explores the use of blockchain technology in crowdfunding platforms. It addresses the vulnerabilities of traditional crowdfunding methods to data breaches and fraud.

[8] This paper signifies the significance of blockchain in fundraising efforts, emphasizing its potential to represent value as blockchain-enabled assets. It highlights the benefits of blockchain-based crowdfunding, including transparency, efficiency, and accessibility to various investors

III. ARCHITECTURE

MN (MetaMask): MetaMask serves as a secure browser extension, enabling users to seamlessly interact with the Ethereum blockchain. It ensures the safety of transactions and enhances user experience by providing a user-friendly interface for accessing decentralized applications.

WS (Web System): The Web System stands as the central hub of the architecture, facilitating crowdfunding activities for both project creators and backers. It offers a user-friendly interface for launching campaigns, exploring projects, and engaging in financial support, thereby fostering a vibrant crowdfunding community.

ES (External Services): External Services encompass third-party integrations that augment the functionality of the crowdfunding platform. These services include payment processing systems, analytics tools, and communication platforms, enriching the user experience and expanding the capabilities of the crowdfunding ecosystem.

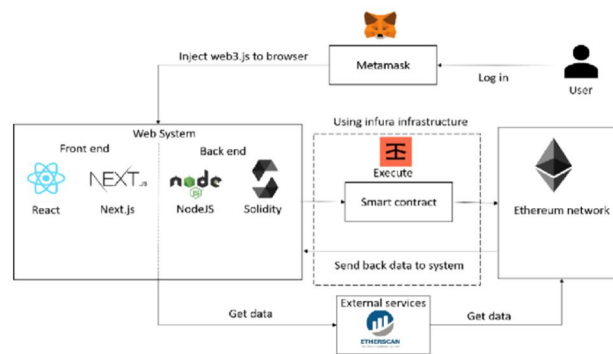


Fig. 1: Architecture diagram

EN (Ethereum Network): The Ethereum Network forms the decentralized infrastructure that powers the architecture, enabling the execution of smart contracts and the recording of transparent transactions. It ensures the integrity and immutability of crowdfunding activities, fostering trust among participants and promoting accountability throughout the ecosystem.

U (User): Users are the lifeblood of the architecture, encompassing both project creators and backers. They leverage MetaMask for secure transactions and interact with the Web System to explore projects, participate in crowdfunding campaigns, and contribute to the growth of the community. Users play a vital role in driving innovation and supporting diverse projects within the crowdfunding ecosystem.

The architecture diagram centers on a strong crowdfunding environment that is supported by essential elements. Users may safely connect with the Ethereum blockchain thanks to MetaMask, a secure browser extension, and the Web System, which acts as the primary hub for campaign launches and crowdfunding operations. The usefulness of the platform is enhanced by external services, such as communication tools and payment processors. The design is based on the Ethereum Network, which makes transactions through smart contracts visible. Users are essential to the ecosystem's health because they use MetaMask to protect transactions, communicate with the Web System, and take part in crowdfunding, which fosters creativity and provides money for a variety of initiatives in this ever-changing decentralised environment. Encapsulating a smooth crowdfunding experience, this design harmonises the Web System's key role, the enriching External Services, and MetaMask's safe Ethereum interaction. Smart contracts on the Ethereum Network's decentralised framework ensure transparent transactions while maintaining integrity and confidence. With the help of MetaMask, users may now securely complete transactions while simultaneously actively participating in the vibrant Web System crowdfunding community, which promotes creativity and helps a wide range of projects. When combined, these elements offer a thorough and safe ecosystem that completely changes the decentralised crowdfunding scene.

III. IMPLEMENTATION AND APPLICATION

Implementing a blockchain-based fundraising system involves strategic steps to harness the technology's potential. The initial focus lies in smart contract development, leveraging blockchain's self-executing agreements to automate and streamline fundraising processes. This includes defining terms, ensuring transparent fund allocation, and enabling secure, programmable transactions without third-party intervention.

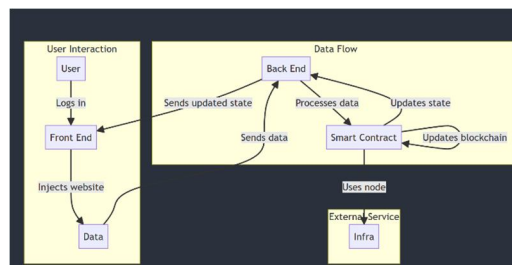


Fig. 2 Flow Diagram

Tokenization plays a pivotal role by representing ownership or investment through blockchain-issued tokens. These tokens enhance liquidity and broaden the investor base, allowing for fractional ownership and straightforward transferability. Establishing a decentralized peer-to-peer network eliminates intermediaries,

reducing costs and increasing accessibility for a diverse range of participants, particularly benefiting small and medium-sized enterprises (SMEs).

Security measures are paramount, integrating robust cryptographic algorithms to safeguard transactions and maintain the immutability of the blockchain. The transparent ledger nature of blockchain provides real-time access to fundraising transaction data for all network participants, fostering trust and addressing challenges related to opaqueness in traditional fundraising.

Community engagement becomes central, utilizing the decentralized nature of blockchain to create a global community of backers. Direct engagement mechanisms between project creators and backers enhance communication and trust-building within the fundraising ecosystem. Regulatory compliance is crucial; integrating features into smart contracts ensures adherence to legal requirements, enhancing the credibility of the blockchain-based fundraising system.

The development of a user-friendly interface, incorporating elements like Metamask for secure transactions, is essential for seamless interaction with the platform. This enhances usability and accessibility, encouraging wider participation. Finally, educational initiatives are implemented to inform potential users about the benefits and functionalities of blockchain-based fundraising, building awareness and acceptance within the broader community. Through these comprehensive steps, the implementation of a blockchain-based fundraising system aims to revolutionize traditional funding methods, fostering inclusivity and transparency in the financial landscape.

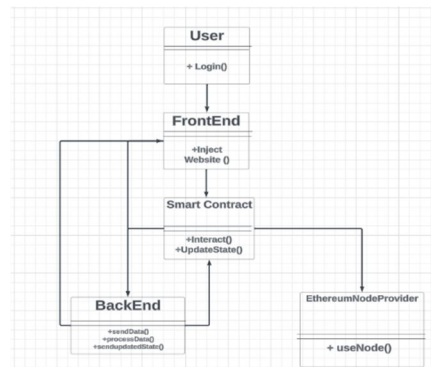


Fig 3 Use Case Diagram

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1) Fundraising Landscape

Traditional fundraising methods encompass a range of strategies, including venture capital investments, angel funding, initial public offerings (IPOs), bank loans, and crowdfunding platforms. While these avenues have facilitated capital raising for countless ventures, they often entail significant hurdles such as stringent regulatory requirements, lengthy approval processes, and limited access for small and medium-sized enterprises (SMEs). Despite the diversity of traditional fundraising options, many businesses and projects encounter difficulties in accessing capital, particularly during early stages of development or when pursuing innovative endeavors. This highlights the need for alternative fundraising mechanisms that can democratize access to capital and streamline fundraising processes.

2) Blockchain Technology

Blockchain technology serves as the underlying framework for cryptocurrencies and digital assets, enabling secure, transparent, and decentralized transactions across a distributed network of nodes. At its core, blockchain comprises a series of blocks containing transactional data, cryptographically linked to form an immutable ledger.

Key features of blockchain technology include

Decentralization: Blockchain operates on a peer-to-peer network, eliminating the need for centralized authorities or intermediaries to validate transactions.

Transparency: Transaction data stored on the blockchain is accessible to all network participants, promoting transparency and accountability.

Security: Cryptographic algorithms secure transactions and prevent unauthorized tampering or alteration of data.

Smart Contracts: Self-executing contracts coded on blockchain platforms facilitate automated transactions and enforce predefined conditions without third-party intervention.

These inherent characteristics make blockchain technology well-suited for applications beyond cryptocurrency, including fundraising, supply chain management, identity verification, and asset tokenization.

3)Blockchain-Based Fundraising

Blockchain-based fundraising leverages the unique capabilities of blockchain technology to revolutionize the way capital is raised, allocated, and managed. By harnessing blockchain's transparency, security, and automation features, fundraising platforms can overcome many of the limitations associated with traditional fundraising methods.

One of the primary mechanisms for blockchain-based fundraising is through tokenization. Tokens represent digital assets or rights on a blockchain network and can be customized to serve various functions, including fundraising, voting rights, or asset ownership. Through tokenization, fundraisers can offer investors access to fractional ownership of assets, revenue-sharing agreements, or utility tokens redeemable for goods and services.

Smart contracts play a pivotal role in automating fundraising processes and ensuring compliance with predefined conditions. These self-executing contracts are programmed to execute specific actions when predetermined criteria are met, such as releasing funds to fundraisers upon reaching fundraising targets or refunding investors if project milestones are not achieved within specified timelines.

Blockchain-based fundraising platforms offer several advantages over traditional fundraising methods, including:

- i. *Increased Transparency:* Transactional data recorded on the blockchain is transparent and immutable, fostering trust and accountability among fundraisers and investors.
- ii. *Global Accessibility:* Blockchain technology enables borderless transactions, allowing fundraisers to access a global pool of investors and supporters without geographical constraints.
- iii. *Enhanced Security:* Cryptographic encryption and decentralized architecture protect sensitive transaction data from unauthorized access and tampering, enhancing the security of fundraising platforms.

4) Regulatory Landscape

The regulatory environment for blockchain-based fundraising varies across jurisdictions and is subject to ongoing legislative and regulatory developments. Regulators grapple with balancing innovation and investor protection while addressing concerns related to fraud, money laundering, and market manipulation.

Key regulatory considerations for blockchain-based fundraising include:

- i. *Securities Laws:* Determining whether digital tokens issued through fundraising campaigns constitute securities subject to existing securities regulations.
- ii. *Know Your Customer (KYC) and Anti-Money Laundering (AML) Compliance:* Implementing robust KYC and AML procedures to mitigate risks associated with illicit activities and safeguard investor interests.
- iii. *Taxation:* Clarifying the tax treatment of blockchain-based transactions, token sales, and capital gains for investors and fundraisers.
- iv. *Regulatory compliance is essential for ensuring the legitimacy, stability, and sustainability of blockchain-based fundraising platforms and fostering investor confidence in emerging digital asset markets*

IV. CONCLUSION

In conclusion, the motivation behind integrating blockchain into crowdfunding encapsulates a vision of enhanced financial efficiency, transparency, and inclusivity. The technology's transparent and immutable ledger fundamentally transforms the trust dynamic in crowdfunding, providing real-time verification and fostering a sense of reliability among participants. The removal of intermediaries not only streamlines transactions but significantly reduces costs, ensuring that a larger proportion of funds directly benefit project creators. Furthermore, the global accessibility facilitated by blockchain transcends geographical boundaries, opening up unprecedented opportunities for backers and creators alike.

The introduction of tokenization adds a new dimension to crowdfunding by offering digital ownership, enabling fractional investment, and enhancing liquidity. This democratization of ownership aligns with the project's

overarching goal of fostering inclusivity within the financial landscape. Smart contracts, another cornerstone of blockchain technology, bring unparalleled efficiency to crowdfunding campaigns. By automating contractual terms, these self-executing agreements not only reduce the potential for fraud but also streamline the entire funding process, ensuring a more seamless and secure experience for all participants.

In essence, the motivation behind this project is rooted in the transformative potential of blockchain technology in decentralized and secure financing. By leveraging its key features — transparency, cost-effectiveness, global accessibility, tokenization, and smart contracts — the project aspires to revolutionize crowdfunding, paving the way for a future where financial transactions are not only efficient and secure but also inherently inclusive. The journey towards this vision signifies a significant step in reshaping the landscape of fundraising and investment, placing the power back into the hands of creators and backers in an era defined by technological innovation and financial democratization.

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