

# Revolutionizing Crowdfunding Using Blockchain Technology

Himanshu Mehra<sup>1</sup>, Chirag Bansal<sup>2</sup>, Jatin Chopra<sup>3</sup>, Vinod Kumar<sup>4</sup>, Nehal Garg<sup>5</sup>  
<sup>1,2,3,4,5</sup>Dr. Akhilesh Das Gupta Institute of Professional Studies, Delhi, India

**Abstract-** Cryptocurrencies are a game-changer in the world of finance and crowdfunding. They offer a secure and decentralised way for businesses to generate funds. Unlike traditional crowdfunding websites, cryptocurrency systems provide transparency and control over donated funds. Social media and crowdfunding platforms make it easier than ever to attract investors and entrepreneurs. Cryptocurrencies can give entrepreneurs access to international capital, improve transparency, and lower transaction costs. However, it is important to be aware of the risks, such as market volatility, security concerns, and regulatory issues. It is an exciting field with lots of potential. Cryptocurrency, like Bitcoin, has gained popularity as a decentralised digital currency, and crowdfunding has become a popular way for startups and projects to raise funds. High-level languages such as Solidity provide an abstract and user-friendly approach to developing smart contracts for crowdfunding platforms. These languages offer a more accessible way for developers to create and manage transactions, ensuring transparency and security. Exploring the intersection of blockchain technology, high-level languages, and crowdfunding can provide valuable insights into the future of finance and fundraising.

**Keywords:-** Cryptocurrency, Crowdfunding, Entrepreneurial finance, Crypto assets, Decentralised, Transparency.

## I. INTRODUCTION

Crowdfunding with blockchain technology has revolutionised how we source funds for various projects and causes. It offers a powerful alternative to traditional financing methods, providing a safe and secure platform for innovators, donors, and consumers. With the integration of blockchain technology, crowdfunding has reached new heights of innovation. Start-ups, new products, and welfare causes can now benefit from blockchain's decentralisation and transparency. Knowing that their funds are being used for the intended purpose, the donors can have confidence in their investments. Blockchain technology operates on a distributed, decentralised ledger, which records the history of digital assets. This immutable nature ensures that the details of a cryptocurrency cannot be modified, making it a disruptive force in industries such as payments and cybersecurity. One of the primary issues with traditional crowdfunding platforms is

the lack of control and transparency for donors. Many platforms do not offer a Contributor Assured Policy, leaving donors uncertain about using their funds. However, with blockchain-based crowdfunding, we can address these concerns. By utilising blockchain technology, we can provide a safe, secure, and transparent method for crowdfunding. Both campaign makers and contributors can easily create and pool campaigns using interactive forms. This allows for seamless campaign creation, donation, and request approval processes. The decentralised nature of blockchain ensures that there is no single point of failure, making it highly resilient. Additionally, the transparency provided by blockchain allows for greater accountability and trust between all parties involved. Blockchain-based crowdfunding has transformed the way we fund projects and causes. It offers innovation, safety, and transparency that traditional financing methods cannot match. With blockchain, donors can have confidence in their investments, and innovators can launch their ideas with a secure and reliable platform. It is an exciting time for crowdfunding, and blockchain technology is at the forefront of this revolution.

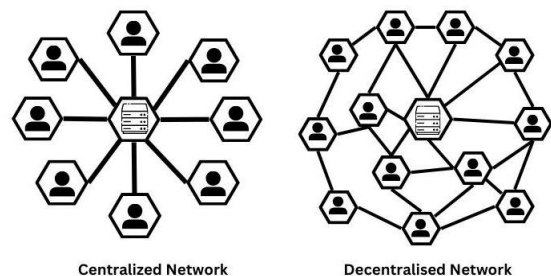


Fig 1: Differential Working structure of centralized and decentralized network.

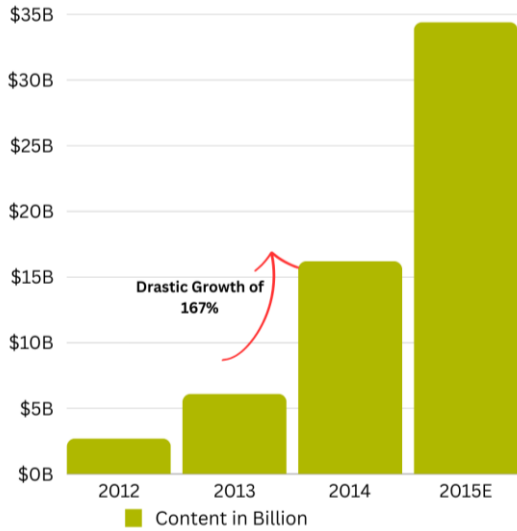


Fig 2: Expansion pace of crowdfunding sector

**II. LITERATURE REVIEW**

- **Crowdfunding Platform Using Blockchain Technology:** The authors' primary objective 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 for storing all campaign details, donations, withdrawals, and funds on an open blockchain network. 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, as represented in Figure 1.
- **Smart Contract:** A smart contract could be a code running on top of the blockchain containing a group of rules under which the parties to it contract to interact with one another. The agreement is automatically enforced if and when the predefined rules are met. The smart contract code facilitates, verifies, and enforces the negotiation or performance of an agreement or transaction; it is the only kind of decentralized automation. A smart contract is tampered-resistant, self-verifying, self-executing code.
- **Quantum-Resistant Cryptography: Navigating the Post-Quantum Landscape** As quantum computing technologies advance, the security of traditional cryptographic methods faces unprecedented challenges. This subheading delves into the realm of quantum-resistant cryptography, exploring innovative cryptographic algorithms and protocols designed to withstand the computing power of quantum machines. The discussion encompasses the urgency of transitioning cryptographic standards, exploring new mathematical structures, and evaluating practical implementation strategies. By navigating the post-quantum landscape, this section of the research paper aims to provide insights into the ongoing efforts to future-proof cryptographic systems in the face of quantum threats,

ensuring the continued integrity and confidentiality of digital information.

- **Decentralised Consensus Mechanisms in Blockchain: A Comprehensive Exploration.** The focus is on the fundamental aspect of decentralization within blockchain systems, specifically examining the various consensus mechanisms that underpin decentralized networks. The subheading delves into the intricate details of consensus algorithms, exploring their role in achieving agreement among distributed nodes without a central authority. The analysis encompasses popular consensus mechanisms such as Proof of Work (PoW), Proof of Stake (PoS), and newer models like Delegated Proof of Stake (DPoS) or Practical Byzantine Fault Tolerance (PBFT). The aim is to provide a nuanced understanding of how these mechanisms contribute to the decentralized nature of blockchain, ensuring security, transparency, and resilience in distributed ledger systems. The subheading may also touch upon real-world applications, challenges, and potential future developments in decentralized consensus protocols.

**III. OBJECTIVE**

The project sets forth several key objectives that it seeks to accomplish. Firstly, it aims to establish a censorship-resistant fundraising protocol, emphasizing the importance of enabling fundraising activities without the risk of censorship. Secondly, the project strives to circumvent direct taxes on donations, indicating a commitment to ensuring that the donated funds are utilized efficiently without additional tax burdens. Thirdly, a significant focus is placed on achieving high decentralization, highlighting the intention to distribute decision-making and operational authority across a diverse network. Additionally, the project seeks to eliminate the possibility of account blocking, underlining the importance of maintaining open access to accounts without the threat of restriction. Lastly, the objective is to prevent any single point of failure, emphasizing the importance of creating a robust and resilient system that can withstand potential challenges and disruptions. These objectives underscore the project's commitment to fostering a censorship-resistant, tax-efficient, decentralized, and resilient fundraising environment.

**IV. METHODOLOGY**

Crowdfunding has a future with endless possibilities. It can be used for various purposes like supporting startups, funding creative projects, charitable causes, and even endeavours. With advancements in technology, platforms are becoming more accessible and efficient. Additionally, the rise Of social media has made it easier to reach a larger audience and gain support. The potential for crowdfunding is vast, and it continues to evolve as new ideas and innovations emerge. Exciting times ahead. 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, and fundraising amount. All the contract codes are 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. A gas fee is the amount of money (very small) to make that. A specific gas fee is required to process a valid transaction.

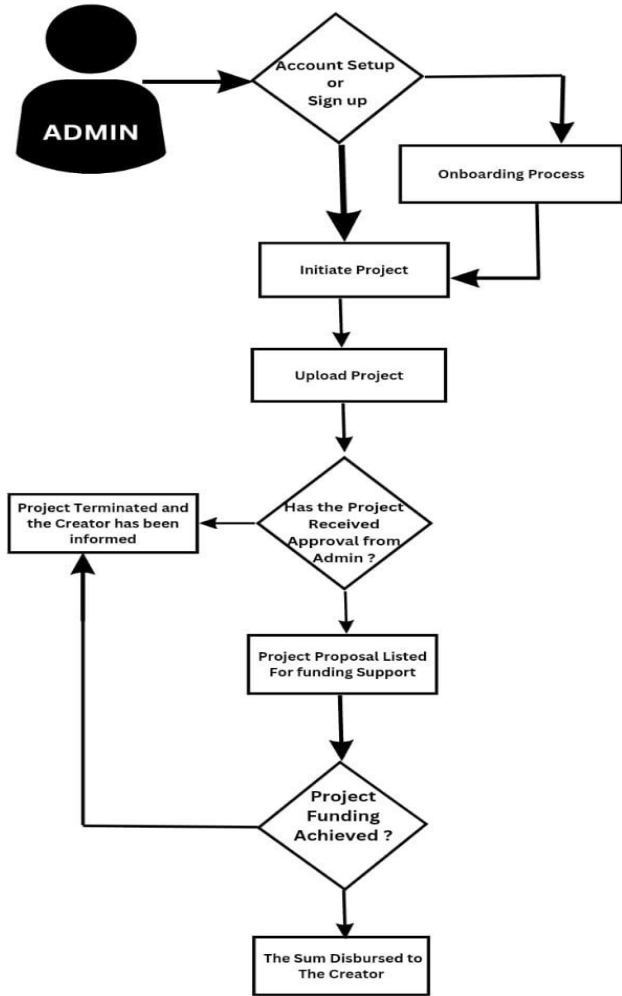


Fig 3 Flowchart of the operations

Figure 3: Discuss the systematic operations of the decentralized crowdfunding, which take part sequentially as further discussed in methodology.

Thus, when the user clicks the "Create Campaign" button, a new campaign will be created with the associated gas fees. After a few seconds, the transaction will be completed, and a new block with the contract address will be added to the blockchain with the contract address. After the campaign is created, it will be displayed on the website's home page. Other users can interact with it. Once the campaign is created and added to the blockchain, an E-wallet such as Metamask is required to manage the associated transaction.

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 campaign's address and not to the campaign's creator, 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. 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 as agreed.

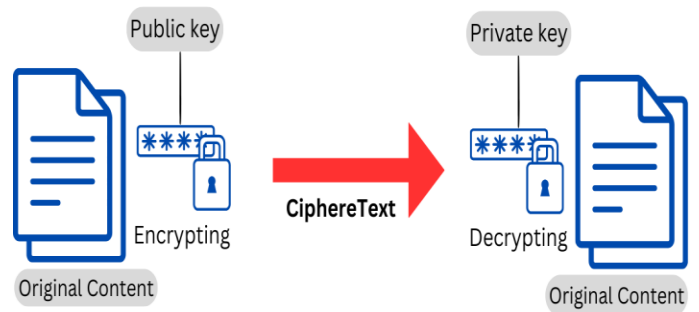


Fig 4: Cryptography working

Cryptography working (Figure 4) is crucial in securing crowdfunding with blockchain. It uses complex mathematical algorithms to encrypt and protect transaction data, ensuring the integrity and confidentiality of the crowdfunding process. This helps build trust among participants and safeguards against fraud.

## V. RESULT

The discussion around crowdfunding through blockchain centers on the potential benefits it brings to the traditional crowdfunding model. By utilizing blockchain technology, crowdfunding platforms can offer increased efficiency, trust, and global participation. Additionally, the elimination of intermediaries reduces costs and enhances the speed of transactions, making the process more efficient. The transparent and secure nature of blockchain ensures that funds are allocated and utilized as intended, fostering trust between project creators and backers.

One notable case study in the realm of blockchain crowdfunding is the "DAO" (Decentralized Autonomous Organization) project. The DAO aimed to create a decentralized venture capital fund, allowing investors to contribute funds and participate in the decision-making process. However, the project faced a major setback when a vulnerability in the smart contract was exploited, resulting in a significant loss of funds. This case study highlights the importance of thorough auditing, security measures, and community consensus in blockchain-based crowdfunding.

projects. As a result it's evident that "Crowdfunding through Blockchain: Transforming the Way We Fund Projects" captures the essence of the potential impact of blockchain technology on crowdfunding. The results show increased accessibility, transparency, security, and reduced intermediaries. Through discussion and case studies like the DAO project, we can further explore the benefits and challenges of implementing blockchain in crowdfunding. By leveraging smart contracts and decentralized platforms, blockchain crowdfunding minimizes the need for intermediaries, streamlining the process and reducing associated costs.

## VI. CONCLUSION

Crowdfunding through blockchain can potentially transform how we raise funds for projects. With increased transparency, lower transaction costs, enhanced security, global participation, and democratized access to funding, blockchain technology offers a more efficient and inclusive crowdfunding ecosystem. By leveraging the power of cryptography and smart contracts, we can create a trusted and decentralized platform for supporting innovative ideas and initiatives. Crowdfunding through blockchain brings efficiency, trust, and global accessibility to fundraising. It empowers individuals, promotes transparency, and opens new possibilities for project creators and contributors alike. The future of crowdfunding with blockchain is full of exciting opportunities and potential for positive change

## VII. APPLICATIONS

- Initial Coin Offerings (ICOs): Companies raise funds through digital tokens, representing ownership, access, or voting rights.
- Blockchain in Supply Chain Management: Enhances transparency, traceability, and ethical sourcing, preventing fraud.
- Cryptocurrencies for Cross-Border Transactions: Facilitates cross-border transactions, reducing reliance on traditional banks and lowering fees.
- Decentralised Crowdfunding Platforms: Enables direct contributions to projects, empowering creators and backers by eliminating barriers and reducing costs.
- Blockchain in Fundraising Campaigns: Ensures transparency and accountability through smart contracts, automating fund releases based on predefined conditions.
- Revolutionising Project Funding: It has the potential to transform traditional funding methods, providing innovative solutions for supporting projects.

## VIII. FUTURE SCOPE

The future of crowdfunding through blockchain is auspicious; with blockchain technology, we can expect increased transparency, lower transaction costs, and enhanced security in crowdfunding campaigns. Smart contracts on the blockchain can automate the entire process, eliminating intermediaries and ensuring that funds are distributed according to predefined rules. This opens up opportunities for global participation and democratizes access to funding.

While the nature of the app involves complexities inherent to managing mass funding and investments, we have prioritized user experience. The interactive and engaging user interface streamlines the sequential flow of transactions and ensures a smooth and user-friendly experience. Despite the intricacies involved in handling funding and investments on a large scale, the user interface is designed to provide an intuitive and efficient experience.

Regarding runtime performance, the app is seamlessly connected to the blockchain through the solidity chain. Our unique selling proposition lies in delivering the least latency and efficient runtime, anticipating concerns about responsiveness. The app is engineered to save time, executing tasks precisely and at a pace that aligns with user expectations. This commitment to responsiveness and Figure three contributes to an overall positive user experience and reinforce our dedication to delivering a cutting-edge crowdfunding solution.

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