

Crowdfunding Platform Powered by Blockchain Technology

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Abstract - Equity crowdfunding via the Internet is a new channel of raising fund for startups. It features low walls to entry, low cost, and high speed, and therefore encourages invention. In recent times, equity crowdfunding in India has endured some developments. still, some problems remain unsolved in practice. Blockchain is a decentralized and distributed tally technology to ensure data security, transparency, and integrity. Because it cannot be tampered, the technology is supposed to have great eventuality in the finance assiduity. This study examines current problems in the practice of equity crowdfunding in India. Grounded on the analysis of the characteristics of blockchain technology, this study further explores its practical operations in crowdfunding. Blockchain technology is a secure, effective, low- cost result for the enrolment of stocks and shares of a establishment financed by crowdfunding. First, a vendor initiates a request for ensuring a product, then the interested lenders participate in a project

Key Words: Blockchain, crowdfunding, Fundraising, Project Registration and Transaction, Voting of Shareholders, Ethereum, Smart Contracts

1.INTRODUCTION

Crowdfunding is a way to raise funds from a large number of individual investors or companies. In this, investors can contribute to any project they're interested in and can gain the profit if that project gets successful. Now a days, numerous crowdfunding platforms formerly live and they take huge knob of funds from investors and contributes and leave them with empty pledges. Crowdfunding using blockchain changes the traditional way to deal with business tracking. Generally, when people need to raise a fund to begin a business, they have to design strategy, statistical surveying, and models, and subsequently present the studies around to attract people or associations. These subsidizing sources included banks, angel investors, adventure capital enterprises. The present-day crowdfunding model depends on three kinds of on- screen characters the task generator who proposes the study or adventure to be funded, people or investors who invests in the study, and a platform which puts these two characters together to make the adventure successful. It's used to finance a wide compass of launch- ups, introducing ideas, for illustration, innovative conditioning, medical advances, trip and social business enterprise gambles.

Present day Crowdfunding:

All the crowd funding transactions today is dependent on several different crowdfunding platforms which takes lots of money from both investors and contributors to process their request which might sometimes not even be up to the mark. Many platforms serve as gatekeepers and they have strict rules and regulations which makes both investors and contributors don't have a freedom in making the project successful. Having a great idea on a crowd funding platform is not a guarantee that there will be a success. User will need a tactics to make their crowd funding page more visible on search engine and attract new customers to that project which requires huge investments in advertisement alone. Many of the crowd funding platforms do not ensure that the promise will be met in regards to contributors and it might be sometimes unfair to the contributors which makes them hesitate to invest in the venture due to which project managers face problems. Sometimes project managers have seen their whole business collapse before they even got a way to start their production because when idea gets very popular in the crowdfunding websites, many different businesses people get inspired and try to make similar products like that which increases more competition

Another pros of using blockchain technology is transparency. The project contributors (and other stakeholders) can have access to immutably stored data, such as information of project step. Transparency provides fairness and trust, which will also help the public's perception of the crowdfunding community, which is often portrayed as untrustworthy. A number of global insurers are developing alliances [and exploring new payment business models to achieve capital efficiencies through single global ledgers. Increased automation to capture risk data in contracts also offers new opportunities to build market knowledge, streamline payments and attract financing risk. At minimum, global insurers can use blockchain to cut asset management costs by reducing the hedging fees they pay to protect themselves from currency fluctuations in international transactions. Insurers developing these offerings typically restrict consumers options and limit the data that can be included. With the blockchain, wallets can achieve customer engagement on a much greater scale, with tailored functionalities and more integrated data. Consumers could have all their identities and insurance information available instantly

Crowdfunding using blockchain:

In crowdfunding allows decentralization which means that no individual platform or group of platforms control the smart contracts which makes it transparent to everyone in the blockchain. It's a peer-to-peer network which collectively follows to a protocol for inter-node communication and validate new block, so no one can alter any block without approval of more than 50 percent nodes in the blockchain which makes it

secure and safe. Anyone can create the project in the website with blockchain and anyone who has internet connectivity can donate to the project. Contributors do not have to worry about the empty promises like the traditional crowdfunding. The smart contracts will handle all the transactions so all the money will be stored in smart contracts rather than sending to the third party. Blockchain gives more freedom to project managers and the contributors so that contributors can have fractional contribution to the project.

2. LITERATURE SURVEY

In this research Paper [1] The research paper titled "Crowdfunding using Blockchain Technology," authored by Saniya Zad, Zishan Khan, Tejas Warambhe, and Rushikesh Jadhav under the guidance of Prof. Vinod Alone explores crowdfunding, a disruptive new form of finance that has experienced spectacular growth. It serves as a low-cost, easy way to raise capital through online funding platforms like Kickstarter and Indiegogo, with speed and efficiency coming from the widespread use of the internet and social media. Funding strategies need to be taught, another is the benefits. It focuses on common challenges in crowdfunding, including issues of trust, platform selection, targeting, and enjoyment. The aim of the survey is to provide an accurate measure of the amount of crowdfunding, track trends and plan crowdfunding. Discussing insights by various authors, the study highlights the importance of crowdfunding, its role in funding complex projects, and its potential to foster innovation through crowdfunding emphasizes perfection. The paper concludes by discussing the role of online crowdfunding in facilitating project finance, by proposing the introduction of blockchain-based crowdfunding for increased transactional flexibility.

In this research Paper [2] Nikhil Yadav and Saraswati V in their paper "Venturing Crowdfunding using Smart Contracts in Blockchain" introduce blockchain-based solutions to enhance crowdfunding. Traditional crowdfunding platforms often lack transparency and are costly. The paper proposes the use of smart contracts to create a decentralized and secure crowdfunding platform. Smart contracts give contractors and providers greater control over the distribution of funds, eliminating the need for third-party intermediaries. The paper acknowledges the challenges of using blockchain in crowdfunding and provides step-by-step guidance on how to create and implement smart contracts on the Ethereum blockchain. Research shows promise to improve crowdfunding through transparency, security and power to the investors and project creators.

In this research Paper [3] A paper titled "Crowdfunding Using Blockchain" by Ashrit Chattani, Akash Sharma and Adwin Manhar discusses the importance of crowdfunding for financial services, highlighting the role of blockchain technology in promoting crowdfunding. For example, high fees and lack of transparency. They offer a blockchain-based solution that uses Ethereum smart contracts to create a decentralized and secure crowdfunding platform. The use of blockchain technology increases trust and transparency between investors and operators. This new approach has the potential to change the way start-ups are funded by providing efficient, secure and cost-effective crowdfunding solutions.

In this research Paper [4] In a literature review on "Crowdfunding Using Blockchain", Abhinav R.B. and his team from Dayananda Sagar College of Engineering, Bangalore, discuss the potential benefits and challenges of integrating blockchain technology into crowdfunding to decentralize,

pseudonymised, smart contracts for secure transactions and take advantage of them, and issues such as operational and regulatory concerns. The authors highlight the need for further research and development to fully exploit the potential of blockchain in crowdfunding, with the aim of reducing transaction costs, has increased confidence and provided security in the collection process.

In this research Paper [5] In their paper titled "Secure fund Crowdfunding Using Blockchain", Nikita Nikhate, Nishad Raut, Pratik Sayankar, Rohit Sonwane, and their mentor Ritu Pawar from G H Raisoni Institute of Engineering department, Nagpur explored the concept of crowdfunding blockchain technology uses with potential benefits. They address the challenges of traditional crowdfunding platforms, including trust issues, lack of transparency, and intermediary costs, and argue that blockchain can provide solutions through a decentralized and transparent platform that will eliminate intermediaries, has increased reliability and reduced communication costs. The research paper delves into blockchain's impact on crowdfunding, blockchain-based crowdfunding models, legal considerations, and industry development. The authors emphasize blockchain's potential to revolutionize crowdfunding by providing a more secure, transparent and efficient platform, which needs to be addressed. This study provides valuable insights into the transformative potential of blockchain technology in crowdfunding.

In this research Paper [6] The paper "Decentralized Crowdfunding Using Blockchain" by Sharda University's Arjun Menon, Kaustubh Kadam, Pranav Kumar and Subash Kumar Shah explores a new approach to crowdfunding. It highlights the limitations of existing crowdfunding models of the industry, including a lack of transparency and authority for investors and operators. The proposed solution uses blockchain technology to create a transparent, decentralized and secure platform for crowdfunding. With smart contracts, donors can influence project finances, and project managers can ensure that commitments made to donors are fulfilled. The paper discusses the origins of blockchain, its types (public and private), and the use of smart contracts in crowdfunding. The study also provides insights into the implementation of the proposed blockchain-based crowdfunding platform on the Ethereum network. While acknowledging the regulatory and practical challenges, the paper highlights the significant potential of blockchain-based crowdfunding as a promising solution for the future development of the field.

In this research Paper [7] The research paper "Crowdfunding Using Blockchain Technology" by Prof. Written by DL Phalak and Ste's Sinhgad Academy of Engineering team examines the integration of blockchain technology in crowdfunding. Traditional funding mechanisms have limitations, such as the lack of a donor guarantee policy, on funding and a lack of power. The paper proposes blockchain-based crowdfunding to address these issues, aiming to provide a safe, secure and transparent platform for crowdfunding by leveraging smart contracts and the Ethereum blockchain, an approach that gives donors greater control over their funds stored on. Ensuring transparency and security. The paper discusses the potential of blockchain technology to revolutionize crowdfunding by removing the risks associated with traditional methods. The use of blockchain in crowdfunding has the potential to reduce fees, increase transparency and improve trust throughout the process. The study highlights the need for continued development and research in this area, and identifies the many opportunities and

benefits that blockchain could bring to crowdfunding platforms in the future

In this research Paper [8] The research paper "Blockchain-Based Crowdfunding Systems" authored by Md Nazmus Saadat and his colleagues from the Malaysian Institute of Information Technology explores the integration of blockchain technology into crowdfunding platforms. The paper suggests Ethereum smart contracts are not used to manage these issues and ensure that contracts are actually executed. With an ensured decentralized, immutable and transparent ledger, blockchain technology provides a solution to these challenges. The paper discusses the nature of blockchain, its components, consensus algorithms, and the pros and cons of using blockchain, including the potential to disrupt various industries It highlights the role of smart contracts in blockchain-based crowdfunding. Authors also emphasize the importance of such blockchain-based crowdfunding platforms to improve the transparency and trustworthiness of the crowdfunding process but at this stage of the research the paper does not take up specific results or data do not come, further research is planned to assess user acceptability and acceptability Promising to increased funding Provides perspective and addresses key challenges of crowdfunding.

In this research Paper [9] Cyber insurance explores the challenges and opportunities in the paper "Crowdfunding the Insurance of a Cyber Product Using Blockchain," by Iman Vakiliinia, Shahriar Badsha and Shamik Sengupta of the Department of Computer Science and Engineering at the University of Nevada goes deeper into Reno and blockchain technology. The paper presents a new framework for insuring electronic assets using blockchain, implementing a sealed bid auction process, improving asset transfer, and automating claims processing This approach aims to it will increase transparency, trust and fairness in the cyber insurance industry, The proposed scheme also addresses the issues of false claims and payment of insurers by providing the services of benefits Finally, this study provides a promising way to strengthen cybersecurity through blockchain innovation.

3. PROPOSED SYSTEM

In this section, we outline the process of developing a crowdfunding platform using blockchain technology. The paper details the steps involved in the design and implementation of the platform while adhering to the principles and practices of blockchain development.

A. System Development

1. Front-end and back-end development: The development process started with the use of ReactJS for the front-end, ensuring a responsive and user-friendly design and at the same time delivering the back-end built NodeJS for the advanced server-side functionality for the guarantee.

2. Smart Contracts: The heart of the blockchain-based platform lies in smart contracts. These auto-execution contracts were created using Solidity, a programming language designed specifically for Ethereum-based smart contracts.

3. ABI compilation: The Solidity smart contracts were then compiled into Application Binary Interface (ABI) code,

represented in JSON format. This assembly was created using the npm package to facilitate communication with the Ethereum Virtual Machine (EVM)

B. User Interaction and Network Integration

1. MetaMask integration: Users must set up the Metamask cryptocurrency wallet in order to interact with the blockchain. MetaMask acts as a bridge between traditional networks and the blockchain, allowing users to send and receive cryptocurrency.

2. Rinkeby Test Network: The Rinkeby Test Network, a blockchain proof of power, was used as a test bed to simulate transactions. This network enables developers to test and accept smart contracts and transactions without using actual cryptocurrency.

3. Transaction Transparency: Checked the transparency of the blockchain infrastructure to ensure that all transactions can be viewed and verified by all users Etherscan API was used to provide a user-friendly interface for transaction tracking

C. Consensus Algorithms

1. Proof of work (PoW): PoW, a widely accepted consensus mechanism, was integrated into the blockchain network. This system requires miners to solve puzzles that require electronic validation of transactions and add them to the blockchain, and ensure the security and integrity of the ledger

2. Proof of participation (PoS): The paper demonstrates the possibility of integrating PoS into the blockchain system. Unlike PoW, PoS relies on authenticators (or "claimants") selected based on their quantity of cryptocurrency to generate new pieces and are willing to claim collateral, reducing environmental impact and computer requirements

3. Byzantine Fault Tolerance (BFT): The BFT algorithm was integrated to ensure consensus among nodes in the distributed network even in the presence of faulty or faulty nodes These algorithms provide the reliability and fault tolerance of the blockchain system is increased. Byzantine Fault Tolerance (BFT) algorithms are crucial for ensuring consensus among nodes in distributed network, even in the presence of faculty or malicious nodes. By Providing reliability and Fault tolerance, BFT integration significantly enhances the resilience and security in the blockchain system.

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me forward but ignited within me an unyielding drive for excellence.

4. CONCLUSIONS

Our project, “Crowdfunding Platform powered by Blockchain”, is complete, live and. It totally works. Traditional crowdfunding has long suffered from a lack of transparency and fraud. This is an avoidable problem, and we believe we have implemented a specific solution that can solve these chronic problems. The goal of a transparent, anti-fraud and decentralized platform has been largely achieved. It has covered the weaknesses of the crowdfunding systems that typically offer this service. The transparency of the crowdfunding process and building trust, so that. donate their money to good causes without fear of cheating

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