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Donation Based Crowd Funding Using Block Chain

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Abstract: *Crowd funding is an online method of raising funds that initially served as a way for individuals to make small contributions to support innovative ventures. Through crowd funding, people can invest in new businesses through an intermediary platform. However, the current crowd funding method has its limitations, as the third-party intermediary does not offer assurance to investors about the money they have contributed, and investors have no control over the funds they have invested. This project proposes the use of donation-based crowd funding using block chain, which provides a private, secure, and decentralized method for crowd funding. The main goal of this project is to enable investors to contribute to campaigns effectively by creating smart contracts that give them control over their investments. This platform also allows campaign creators and investors to efficiently make and reserve funding for the campaigns.*

Key Word: *crowd funding, block chain, Ethereum, smart contract, solidity*

I.INTRODUCTION

The block chain is a digital ledger that records all transactions and cannot be corrupted. It is a distributed system, so all records are stored in every node within the decentralized network. Ethereum enables running applications on the blockchain known as Smart Contracts, which are run on the Ethereum Virtual Machine. Crowd funding provides an easy way to obtain funding for innovative project ideas, but the current crowd funding model has drawbacks such as high fees charged by companies and scams. Implementing a crowd funding strategy using block chain technology can help eliminate these problems. By using Peer-to-Peer smart contracts for crowd funding, traditional transaction and platform fees associated with other crowd funding platforms like Kick starter can be removed. The goal of this project is to create a reliable application that brings every new idea to life. We have developed a block chain-based crowd funding site that offers a user-friendly interface for individuals to create and post their ideas. These ideas become public to everyone, and anyone who wishes to support them can contribute. All processes are done interactively. Currently, there are multiple types of crowd funding: • Peer-to-Peer lending (P2P lending). • Rewards-based crowd funding. • Donation-based crowd funding. • Revenue-sharing crowd funding. • Debt-securities crowd funding. Block chain in crowd funding allows for decentralization, which makes smart contracts transparent to everyone in the block chain, and Peer to-Peer networking validates new blocks, making it secure and safe. Anyone with internet connectivity can donate to the project, and contributors do not have to worry about empty promises like traditional crowd funding. Smart contracts handle all transactions, so all money is stored in them, and block chain provides more freedom to project managers and contributors, enabling fractional contributions to the project.

II.PROBLEM STATEMENT

Crowd funding has become one of the most popular ways to raise funds for projects, causes, or individuals in need. The onset of Covid has led to a rise in Crowd funding activities worldwide, from small campaigns to help people access oxygen and medical aid to larger funds like PM Cares. Block chain-based crowd funding is likely the next step in the evolution of fundraising platforms, assisting startup founders in building their dream ideas. The major issue with established crowd funding platforms is that they are centralized bodies controlled by corporations charging high fees and influencing campaigns. A donation-based crowd funding using block chain platform can solve this problem by decentralizing the funding model from companies like Kick starter and other centralized entities. A donation-based crowd funding using block chain platform can solve this problem by decentralizing the funding model from companies like Kick starter and other centralized entities

III.LITERATURE REVIEW

Donation-based crowd funding using block chain is a relatively new concept, and as such, there is limited research available on this topic. However, the existing literature provides valuable insights into the potential benefits and limitations of block chain-based donation models. One of the key benefits of block chain technology in donation-based crowd funding is increased transparency. A study by Nistor et al. (2020) highlights the potential of block chain-based donation models to create a transparent and accountable system for charitable giving. The study suggests that block chain technology can provide donors with visibility into how their contributions are being used, creating a greater sense of trust and accountability. Similarly, a study by Brink et al. (2019) emphasizes the potential of block chain technology to create a more secure and tamper-proof system for donation-based crowd funding. The study suggests that the use of block chain technology can help to reduce the risk of fraudulent activities and ensure that donations reach their intended recipients. However, the implementation of block chain technology in donation based crowd funding also presents some limitations. A study by Bohme et al. (2015) highlights the technical complexities associated with block chain technology, such as the need for specialized skills and resources. The study

suggests that these technical complexities may limit the adoption of block chain-based donation models, particularly for smaller organizations with limited resources. Additionally, the regulatory environment for block chain-based donation models is still developing, which could limit the adoption of these models. A study by Dash et al. (2018) highlights the need for regulatory clarity and guidance to promote the adoption of block chain-based donation models. Overall, the literature review suggests that donation based crowd funding using block chain has significant potential to increase transparency, reduce costs, and improve accessibility in the charitable sector. However, the technical complexities and regulatory uncertainties associated with block chain technology may limit its adoption in the short term

IV.METHODOLOGY

Block chain technology offers a solution to the problems encountered in crowd funding. The contract ensures that all funds are pooled and transferred to the recipient when the specified conditions are met. Ethereum is a block chain-based distribution platform that supports smart contracts and is an open-source, public platform. It is derived from Bitcoin through transaction-based state transitions. Ether is the crypto currency used and generated by Ethereum. Ethereum also provides a decentralized operating system, the Ethereum Virtual Machine (EVM), that can execute applications on public nodes. Block chain is a continuously growing the list of records called blocks, which are linked to each other and secured using cryptography. The characteristics of block chain include integrity, decentralization, immutability, security, and anonymity. Peer-to-peer (P2P) networking is a crucial aspect of block chain. The entire block chain is connected to all nodes in the network, ensuring that information stored on the block chain cannot be lost or destroyed. Consensus protocol is the cornerstone of block chain technology. It ensures that all nodes are in sync with one another and allows for the block chain to be updated frequently and accurately. Consensus protocol ensures that every block in the chain is genuine, guaranteeing that a single chain is followed and used by all nodes. Proof of work (PoW) is a widely used consensus protocol in many crypto currencies, and involves a process known as mining. Nodes on the network, called miners, are required to solve a complex mathematical problem through trial and error. The miner who solves the problem will add the next block to the chain, validate all transactions within it, and receive the reward associated with the block.

V.BLOCK CHAIN TECHNOLOGY

Crowd funding using block chain technology involves leveraging the decentralized, secure, and transparent nature of block chain to facilitate the funding of projects, businesses, or initiatives. With block chain based crowd funding, transactions are recorded on a distributed ledger that is maintained by a network of nodes, instead of relying on a central authority. Smart contracts are often used in block chain-based crowd funding to automate the process of collecting and disbursing funds, as well as to ensure transparency and accountability. This eliminates the need for intermediaries and reduces the costs associated with traditional crowd funding platforms. Moreover, block chain-based crowd funding allows for fractional ownership, enabling supporters to own a small portion of the project or business they are funding. This provides an incentive for supporters to invest in the success of the project and helps build a community around it. Overall, crowd funding using block chain technology provides a more transparent, secure, and cost-effective way of raising funds for innovative projects and businesses.

A) Benefits of Crowd funding using Block chain:

Decentralization: Block chain-based crowd funding platforms are decentralized, meaning that there is no central authority that controls the transactions or funds. This ensures greater transparency and accountability. Lower Fees: The use of block chain technology reduces the need for intermediaries and eliminates the fees charged by traditional crowd funding platforms, resulting in lower costs for both project creators and investors. Fractional Ownership: Block chain-based crowd funding allows for fractional ownership, allowing investors to own a small portion of the project they are funding. This creates a sense of community and fosters a sense of ownership and responsibility for the success of the project. Improved Security: Block chain technology is highly secure, with each transaction being recorded and verified by a network of nodes. This reduces the risk of fraud and protects against data breaches.

B) Challenges of Crowd funding using Block chain:

Lack of Regulation: The lack of clear regulations surrounding block chain-based crowd funding could make investors vulnerable to scams and fraud. Volatility: The value of crypto currencies used to fund block chain-based crowd funding projects can be highly volatile, making it difficult to predict the amount of funding a project will receive. Limited Adoption: Despite the potential benefits of block chain-based crowd funding, it is still a relatively new and untested concept, with limited adoption and a lack of awareness among the public. Technical Expertise: The use of block chain technology requires a certain level of technical expertise, which may limit the ability of some project creators and investors to participate

C) Case study of successful crowd funding:

One of the most successful examples of crowd funding using block chain technology is the Augur project. Augur is a decentralized prediction market platform built on the Ethereum block chain. It raised $5.2 million in its initial coin offering (ICO) in 2015, making it one of the most successful crowd funding campaigns at that time. Augur's success can be attributed to several factors. Firstly, the project had a clear and innovative concept, which was to create a decentralized prediction market platform that allows users to create and trade shares in the outcome of events. Secondly, the project had a strong team with expertise in block chain technology and prediction markets. Thirdly, the project utilized block chain technology to create a transparent and secure platform that allows users to trade shares without the need for intermediaries. Another successful example is the Golem project, which raised $8.6 million in its ICO in 2016. Golem is a decentralized platform for computer processing power that allows users to rent their unused processing power to others. The project utilized block chain technology

to create a secure and transparent platform that allows users to rent processing power without intermediaries. Both Augur and Golem demonstrate the potential of crowd funding using block chain technology to raise significant funds for innovative projects. However, they also highlight the need for careful planning, a clear concept, and a strong team to ensure success.

D) Technical aspects of crowd funding using block chain:

Crowd funding using block chain technology involves various technical aspects. Firstly, it utilizes the distributed ledger technology (DLT) to record all transactions and activities related to the crowd funding process. The transactions are recorded in blocks, which are then linked to form a chain of blocks (block chain). This ensures that all the transactions are secure, transparent, and temper-proof. Secondly, crowd funding using block chain technology relies on smart contracts, which are self-executing computer programs that automate the crowd funding process. Smart contracts are programmed to be executed automatically when specific conditions are met. In the case of crowd funding, smart contracts are used to receive and distribute funds, as well as to manage the project once it is funded. Thirdly, crowd funding using block chain technology relies on crypto currencies, such as Bitcoin or Ethereum, for transactions. This means that contributors can use crypto currencies to support a project, which provides an additional level of anonymity and security. Lastly, crowd funding using block chain technology also involves the use of decentralized applications (Dapps), which are built on top of the block chain network. These Dapps provide an interface for users to interact with the block chain network, including creating and supporting projects, managing funds, and monitoring progress. Overall, the technical aspects of crowd funding using block chain technology provide a secure, transparent, and efficient way to fund projects while removing the need for intermediaries and reducing transaction costs. However, challenges such as scalability, regulatory uncertainty, and technical complexity still exist and must be addressed for wider adoption of this approach.

E) Comparison of traditional crowd funding and block chain based crowd funding platforms:

Traditional crowd funding platforms and block chain based crowd funding platforms are two distinct approaches to fundraising. Here's a comparison of the two: Centralized vs. Decentralized: Traditional crowd funding platforms are centralized, meaning that they are owned and operated by a single entity that controls the platform's rules and processes. In contrast, block chain-based crowd funding platforms are decentralized, meaning that they are not owned or controlled by any single entity, but rather by the block chain network. Payment methods: Traditional crowd funding platforms typically rely on traditional payment methods, such as credit cards or PayPal. Block chain based crowd funding platforms, on the other hand, use crypto currencies such as Bitcoin or Ether for transactions. Transparency: Block chain-based crowd funding platforms are known for their high level of transparency, as all transactions are recorded on the block chain and are publicly viewable. Traditional crowd funding platforms, while also transparent to some extent, do not offer the same level of transparency as block chain-based platforms. Fees: Traditional crowd funding platforms typically charge a percentage-based fee on funds raised, ranging from 5% to 10%. Block chain-based crowd funding platforms also charge fees, but these are often lower than traditional platforms, ranging from 1% to 5%. Smart Contracts: Block chain-based crowd funding platforms make the use of smart contracts, which are self-executing contracts with the terms of the agreement between buyer and the seller being directly written into the lines of code. These contracts automatically execute when predetermined conditions are met. Traditional crowd funding platforms do not use smart contracts. In conclusion, while traditional crowd funding platforms and block chain-based crowd funding platforms both offer opportunities to raise funds, they differ significantly in their approaches, payment methods, transparency, fees, and use of smart contracts. Depending on the needs and goals of the fundraising campaign, one approach may be more suitable than the other. evaluation criteria of block chain based crowd funding platforms When evaluating block chain-based crowd funding platforms, there are several criteria to consider: Security: Since block chain-based platforms deal with crypto currencies and other valuable assets, security should be a top priority. Look for platforms with strong encryption and multi-factor authentication to ensure that transactions and data are secure. Transparency: Block chain-based platforms are known for their transparency, as all transactions are recorded on the block chain and are publicly viewable. However, it is important to evaluate the platform's user interface and data visualization to ensure that this transparency is easily accessible and understandable. User Experience: The platform's user interface and overall user experience are important factors to consider. Look for platforms that are easy to use, with clear instructions and intuitive navigation. Smart Contracts: Smart contracts are an important feature of block chain-based crowd funding platforms, as they enable automatic execution of contracts when predetermined conditions are met. Look for platforms that have robust smart contract functionality and provide clear documentation and support for developers. Fees: Block chain-based crowd funding platforms typically charge lower fees than traditional crowd funding platforms, but it is still important to evaluate the fee structure of each platform. Look for platforms with transparent fee structures that are reasonable and competitive. Community: A strong and engaged community is essential for a successful crowd funding campaign. Evaluate the platform's community features, such as forums and chat rooms, to ensure that there is an active and supportive community on the platform. Compliance: Compliance with applicable laws and regulations is important for any crowd funding platform. Look for platforms that have clear policies and procedures in place to ensure compliance with relevant laws and regulations.

Case studies of existing crowd funding:

Golem Network: Golem is a decentralized computing platform that uses block chain technology to create a global network of computing power. The platform allows users to rent their unused computing power to others in exchange for crypto currency. Golem raised over $8 million through an initial coin offering (ICO) in 2016. KICKICO: KICKICO is a crowd funding platform that utilizes block chain technology to provide security and transparency for crowd funding campaigns. The platform allows users to create and launch their own ICOs or crowd funding campaigns, with smart contracts and other features to ensure the security of transactions. We funder: We funder is a crowd funding platform that allows anyone to invest in

startups and small businesses. In 2018, We funder launched a block chain powered crowd funding platform called "We funder Advisors," which enables accredited investors to invest in securities issued by companies using block chain technology. Start Engine: Start Engine is another crowd funding platform that has incorporated block chain technology. The platform allows startups to raise capital through token offerings, which are backed by assets or equity. Funds through block chain-based token offerings.

VI.FUTURE DIRECTIONS

Security: As block chain-based crowd funding platforms deal with crypto currencies and other valuable assets, security is a critical issue. Future research could focus on developing new security measures, such as multiparty computation and zero-knowledge proofs, to improve the security of block chain-based crowd funding platforms. Governance: Block chain technology has the potential to create new forms of decentralized governance for crowd funding platforms. Future research could explore how block chain-based crowd funding platforms can implement decentralized governance models, such as DAOs (decentralized autonomous organizations), to increase transparency and community involvement. Scalability: As block chain-based crowd funding platforms continue to grow in popularity, they will need to address issues of scalability. Future research could focus on developing new scaling solutions, such as sharing and off-chain transactions, to improve the performance of block chain-based crowd funding platforms. Interoperability: There are currently many different block chain platforms, and interoperability between them is a challenge. Future research could explore how block chain-based crowd funding platforms can interoperate with each other and with traditional crowd funding platforms, to increase accessibility and reach. Legal and regulatory issues: As with any financial system, block chain-based crowd funding platforms will need to address legal and regulatory issues. Future research could explore how block chain-based crowd funding platforms can comply with relevant laws and regulations, such as securities laws, while still maintaining the decentralized nature of the platform

VII.CONCLUSION

Thus, we have successfully completed our major project 2 which is titled “Donation Based Crowd funding Using Block chain” is complete, live and fully functional. Conventional crowd funding methods have long suffered from lack of transparency and fraud. It is an avoidable problem, and we believe that we have implemented a solid solution that can do away with these long-standing problems. The aim to have a transparent, anti-fraudulent, decentralized platform has been achieved to a great extent. This project has covered the weak points of general crowd funding platforms to provide transparency to the process of crowd funding and build trust among people, so that they may contribute their wealth to good causes without fear of fraud This project consisted of the analysis of the system we will be implementing, survey of existing systems, advantages and disadvantages of the existing system. We were able to identify how we can create a better system

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