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Blockchain Based Crowdfunding System

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Abstract: ***A fresh and creative approach to finance various business models is through crowdfunding, which enables individual business founders to submit fundraising requests. Businesses may be enlightening or commercial. Capitals are frequently given away in exchange for future goods or deeds. This entails connecting investors and businesspeople using social media on the internet in exchange for incentives to raise capital for various company models. Social networks and the Internet are becoming emerging platforms. The internet and social media are crucial for charitable organisations like dealers to raise money. After giving a general summary of the various crowdfunding platforms that have lately surfaced, this article first examines the role that technology plays in crowdfunding. Crowdfunding is based on assurance between investors and stakeholders. The appearance of new technologies is very promising for both organizations and discrete crowdfunding. Crowdfunding stand using blockchain technology increase the credibility of diverse projects and businesses, and attract huge amounts of money from investors and sponsors. key word: Crowdfunding, blockchain technology, synergy, smart contracts. The foundation of crowdfunding is trust between stakeholders and investors. The emergence of new technology is incredibly encouraging for businesses and discrete crowdfunding. Blockchain-based crowdfunding platforms boost the legitimacy of many different projects and enterprises and draw in sizable sums of money from sponsors and investors. Key words: Blockchain technology, collaboration, smart contracts, and crowdsourcing.***

I. INTRODUCTION

Simply described, crowdfunding is the practise of using a group of individuals to support an initiative or project instead of more traditional institutions as banks or lenders. According to Freedman and Nutting [1], crowdfunding is a strategy for gathering lots of little donations using an internet fundraising page in order to support or advertise well-known companies. His three parties were primarily involved in the crowdsourcing campaign:

The ability to quickly increase the required value is the biggest benefit. Indeed, a large number of people today use social media websites. This implies that project owners can utilize these channels to temporarily make them public [2]. Because it can be more challenging to obtain loans from banks or other investors, many creators use crowdfunding to finance their projects [3]. This is because processing mortgages typically takes some time. Numerous research have discovered additional non-financial advantages of crowdsourcing. Participants in crowdfunding, for instance, can raise brand recognition and corporate promotion while contributing valuable involvement and input to the initiative [4]. Schlueter [5] identified two primary advantages of crowdsourcing. The crowdfunding is more appropriate, which is the first benefit between investors and inventors from all over the world. Another benefit is that investors can get more information, even at the project's early stages. Investors can be inspired to participate in such crowdfunding events by this data because it has such high value to them.

Although it offers certain benefits, there are still many issues with crowdfunding which need to be resolved. The main problem with traditional crowdfunding is fraud [6]. He claims that online fundraising exposes participants to fraud because conventional legal and social safeguards may not have been effective. This is emphasised further in [7], which asserts that license is not required for publishing and claims that there are few legal obligations to fulfil after an initiative is completed. More research has identified the following two issues with crowdfunding: 1) Significant award delays; or 2) drive initiators delaying delivery dates for backers by more then six months. or 3) The promised goods hasn't received, and the customer support agent hasn't offered a satisfactory explanation. Reimbursement [8]. In a different poll, or more 75% of crowdfunding delivered items later than expected [9]. Through the incorporation of payment systems into your crowdfunding system, you may create a contract that holds donor Capitals in storage until a particular deadline or goal is achieved. Depending on the conclusion, the money will either be securely repaid to the donors or given back to the project owner. A blockchain is a decentralised database that contains records of each transaction that takes place and that is sent back and forth between parties. Blockchains are characterized by decentralisation, permanence, anonymity, and data verifiability [10].

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A blockchain system is composed of two main components transactions and blocks. Transactions represent actions triggered by participants, while blocks are tuples that record transactions and other relevant details like exact order, creation timestamps, and more. [11The data or blocks of transactions in the blockchain tamper-resistant because they are linked cryptographically [12]. This means that every inserted No block can be edited or removed. To establish assurance, the Consensus algorithms are used in blockchain. This aims to guarantee that every node in the system has the same copy, doing away with the requirement for network-wide assurance. Mining refers to the process of creating agreements on a blockchain. Because mining makes all of the data associated to the ledger secure and immutable, it is crucial [13]. Unpopular consensus algorithms include Byzantine Fault Tolerance, Proof of Stake, and Proof of Work (BFT).Many industries around the world have been disrupted when it comes to its implementation, due to the various advantages blockchain has over conventional systems. These include finance and insurance, real estate, the arts, and recreation, and more.[14] benefits of utilizing blockchain technology include its capacity for high productivity and low cost.. Furthermore, you can assurance the integrity of your blockchain data. Indeed, once in the ledger, it cannot be manipulated anymore [15].The only issue with employing blockchain technology is the distributed systems' high energy and processing resource consumption. . Blockchain technology can facilitate cybercrimes like money laundering, internet poker, get-rich-quick scams, extortion, unlawful transactions, and financing for terrorism [17] because of its anonymity. Smart contracts are one of the appealing aspects of blockchain technology. The downloadable code that operates also on blockchain to facilitate, carry out, and enforce the contract's provisions is referred to as a "smart contract." When certain requirements are met, a contract is automatically executed [20]. On a variety of platforms, including Bitcoin, NXT, Ethereum, etc., smart contracts can be employed. It involves the account balance, the memory file, as well as the programmed code. By publishing transactions upon that blockchain network, people can construct contracts [18]. One application area for blockchain is the crowdfunding industry. The majority of the crowdfunding platforms currently in use are centralized platforms, which can result to some platforms like Wei Fund, Acorns, and Cubit. Users are able to create drives utilizing Wei Fund’s smart contract, which powers the platform. Users can also design their personal smart contracts. Currently, Wei Fund is in alpha. Cubit and Acorn remain in the major ICO phase, in the meantime. In Malaysia, meanwhile, bitcoin crowdfunding is still in its early stages. The state of crowdfunding in Malaysia is depicted in Table 1. Government Central Bank is still examining the usage of cryptocurrencies in Malaysia (CBM). In Malaysia right now, using Cryptocurrencies is not prohibited, but it is also not accepted as legal [17].

II. METHOD OF RESEARCH

ReactJs is used to build the front end of the system, and NodeJS is used to build the back end. Contracts are created using Solidity language. This sol npm package is used to compile the contract into ABI software in JSON format. The Web3 provider instance is then used to parse the ABI interface and implement contracts. We connected to the Ethereum platform via Infura, a remote node that takes the place of a local node. We must first create a bitcoin wallet contributing To overall mask in order to use the system. Users of the browser extension Meta mask can engage with any decentralized applications (dApps). The user can transfer Ether to his Metamask account after setting up an account there. The user can move Ethereum to his Metamask account after setting up an account there. Because Metamask has integrated the Web3 version in the internet browser, that once user puts Eth in the account, they can begin interacting with the system. That drive can then begin building drives, as well as other users can add drives. A drive manager can additionally make requests to specify how the revenues will be used in addition. Only Ether will be transferred to the merchant in the event that contributors feel that spending is appropriate and a majority of backers agree. The Infura architecture connects the system to the Ethereum network. We don't use the Ether mainnet because this system is simply a prototype; instead, we are using a testing network that method of dealing to a Ethereum mainnet. In order to improve the transactions conducted by system users, we use a solid evidence blockchain named the Rinkeby network for this project. While we're on the Rinkeby network, mining Ether is not possible; instead, we must ask for the Rinkeby. Check out the faucet here:/tap.rinkeby.io/. The Etherscan API allows users to view the specifics of their transactions, whether they were successful or failed. Figures 1 and 2 depict the system architectural diagram and the system's Ethereum transaction flow, respectively.

III. FLOW

1) Create a drive in the drive manager. He must fill out the drive details in order to construct the drive. He could also upload the plan in PDF format to persuade contributors. The proposal will be kept in the peer-to-peer file sharing system InterPlanetary File System (IPFS).
2) The drive will then show up in the drive page. Contributors may donate to the drive if they are interested in it.
3) The drive manager creates an expense request that includes a list of the things required to carry out the drive.

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4) Notifications were sent to contributors that a new expenditure request had been appended.
5) Contributors vote to concur with the item presented after determining if the item provided by the drive management is appropriate or not.
6) A smart contract will deliver gathered Capital to the appropriate suppliers if the majority of contributors agree..
7) The agreed-upon item is subsequently sent to the drive management by the appropriate vendor. All users can view each transaction's blockchain record on the Etherscan website, as illustrated in Figure 3.

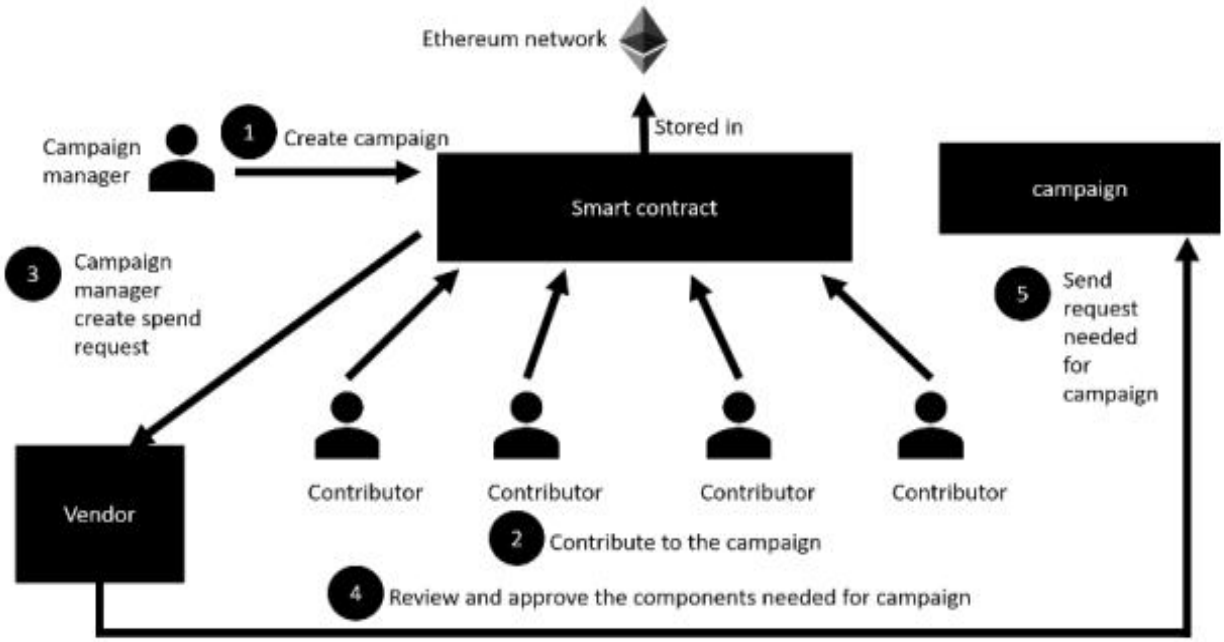


Figure 2. Flow of ether in proposed blockchain model



Figure 3. Records of Ethereum transaction

IV. CONCLUSIONS AND ANALYSIS

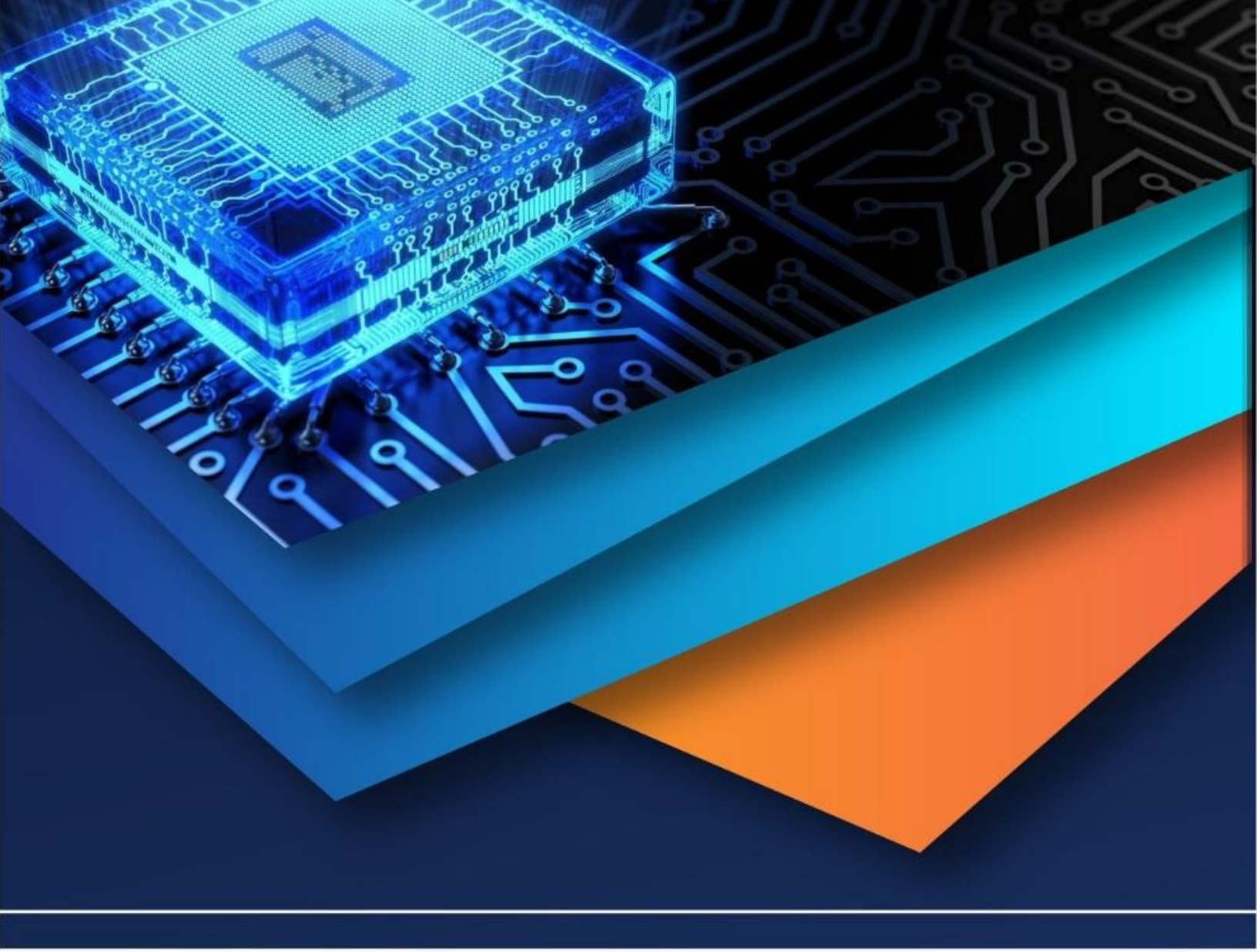
The crowdfunding platform's integration of blockchain technology improves the privacy of donors when they make donations. This is due to the transparency of blockchain transactions. The records of every transaction can be seen by anybody that use the Etherscan API. Additionally, since the contract is automatically performed if the requirements are met, the cryptographic protocol implementation also does away with the requirement for guarantee from each participant for the drive. We are wrapping up the system's implementation and will soon get the resulting data, which we do not have right now. A research on acceptance will also be conducted. The crowdfunding platform's use of blockchain technology improves the contributors' level of anonymity while making a donation. This is because blockchain transactions by their very nature are transparent. The logs of each transaction, which can be seen via the Etherscan API, are accessible to all users. The introduction of smart contracts also eliminates the requirement for each partner to provide assurance for the drive because the contract is automatically carried out whenever the requirements are met.

V. CONCLUSION

Give evidence that what is anticipated and described inside the "Introduction" chapter is now finally feasible. In this paper, a bitcoin framework for crowdfunding transactions is suggested. a decentralized framework allowing for more transparent translation. We intend to use ERC-223 coins in smart contracts for forthcoming work because they provide many advantages, including:
less gas is used, developers can manage incoming token transactions, and lost token issues are resolved [21]

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