IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

A SURVEY ON CROWDFUNDING USING BLOCKCHAIN TECHNOLOGY

Ayush Kumar Singh[1] , Palak Srivastava[2] , Aastha Jaiswal[3] , Mrs. Poornima SM[4]

RNS Institute of Technology, Bengaluru

ABSTRACT-

Blockchain technology has brought about a revolutionary change in modern society by offering transparency, decentralization, and security. Crowdfunding, can also be an online fundraising strategy that initially started as a way to contribute small amount of fund in the form of money or stock to finance project. In present using an intermediary, such as a broker-dealer in digital wallet people have the option to invest in entrepreneurial start-ups. However, current crowdfunding sites lack the Donor Guarantee Policy and control over donated funds, which is a significant issue. A comprehensive overview of the research and developments in the field of blockchain-based crowdfunding is objective of this survey paper. The existing literature is reviewed, key concepts and mechanisms are highlighted, benefits and challenges are discussed, and potential future directions for this exciting area of study are explored.

Keywords: Crowdfunding, Blockchain, Campaign, Donor Guarantee, Digital Wallet.

Introduction

The contemporary times have seen drastic emergence of new technologies, one of which is Blockchain. It is a new and emerging distributed ledger technology that enables multiple groups to maintain and check their database of transactions without depending on a central authority. A wide range of businesses, including supply chain management, healthcare, and finance, have not only embraced it but also adopted it in their day-to-day activities. The potential transformation of the crowdfunding industry lies in the utilization of blockchain, which can enhance efficiency and broaden accessibility to a more diverse audience.

Among plethora of initiatives or endeavors, startups, small firms, and individuals have found success with crowdfunding, which is the practice of gathering modest donations from a large number of altruistic and people using internet platforms. Crowdfunding platforms are essential for financing artistic endeavors, landholdings development, organizations startups, and philanthropic endeavors. The size of the worldwide crowdfunding industry was estimated by Statista to be $13.9 billion in 2020 and has sky rocketed to $25.8 billion by 2025.

However, traditional crowdfunding has some challenges. A major obstacle in the process is the absence of accountability and openness. Moreover, lengthy processing periods and exorbitant transaction costs may discourage investors from taking part in crowdfunding initiatives.

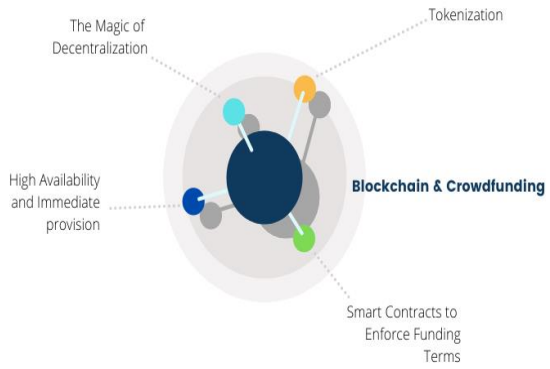

Fig1: Block chain Revolutionizing Crowdfunding

Crowdfunding may be made explicit, secure, and accountable by implementing blockchain technology. Additionally, blockchain-based crowdfunding can shorten processing times curtail the transaction costs, increasing investor accessibility and appeal. This study peruses the idea of blockchain-based crowdfunding, its pros, and the cons in putting it into practice.

The study paper is structured in a way that it will provide an outline of traditional crowdfunding and the difficulties involved in the next section. We shall discuss blockchain technology and its related work in **Related Work** . ***Incorporation with Additional Technology*** gives the elaborated view on how different technology can be integrated with blockchain and crowdfunding for its expansion. Future scope and development are discussed in **Prospective Opportunities**. In **conclusion**, we will examine the blockchain-based crowdfunding and provide a summary of the main conclusions of the study paper.

To all intents and purpose, the application of blockchain technology to crowdfunding has the potential to completely transform the sector by offering a pedestal that is safer, more transparent, and more effective. Crowdfunding based on blockchain technology can assist individuals, small enterprises, and startups in surpassing the challenges posed by traditional crowdfunding and seizing new chances for funding their initiatives.

Initiative

The goal of this survey on blockchain-based crowdfunding are as follows:

• **Analyze recent literature:** Perform a methodical examination of research and scholarly publications pertaining to crowdfunding utilizing blockchain. Scrutinize the current state of knowledge, pinpoint emerging trends, and emphasize significant findings and insights.

• **Provide an overview:** Crowdfunding using blockchain, encompassing its definition, distinctive features, and advantages compared to conventional crowdfunding frameworks.

• **Assess case studies and projects:** Blockchain-powered crowdfunding platforms, such as Kickstarter and Ethereum, have gained popularity due to their transparency, security, and accessibility. They have helped launch many successful projects, but have also faced challenges in regulatory compliance and fraudulent activity. Despite these obstacles, they have empowered people and fostered new companies by democratizing access to capital and leveling the playing field for entrepreneurs. As blockchain technology evolves, we can expect even more innovation in the crowdfunding space.

• **Present future directions:** Talk about how blockchain interacts with other technologies, the possibility of global crowdfunding, sustainability concerns, and how decentralized finance (DeFi) is developing, while identifying new developments, ideas, and avenues for exploration in blockchain-based crowdfunding.

• **Identify benefits and challenges:** It explore the positive aspects and benefits of crowdfunding through blockchain, encompassing enhanced accessibility, reduced expenses, heightened transparency, and global expansiveness and tackle the challenges and lingering issues related to governance, user adoption, scalability, and regulatory frameworks.

• **Explore technical solutions:** It inspect the technical methodologies and frameworks employed by crowdfunding platforms based on blockchain. Provide further details on the ways in which smart contracts, cryptocurrencies, tokenization, and decentralized apps (DApps) all help to make crowdfunding operations safe and effective..

In attaining these objectives, this survey aspires to provide a comprehensive and up-to-date insight into how blockchain technology facilitates crowdfunding. It aims to serve as a valuable resource for academics, professionals, and decision-makers seeking to gain deeper insights into the merits and drawbacks of this innovative fundraising approach.

Related Work

In the field of technology, new information is being developed every day. Over the past few years, we have heard about the blockchain technology which has recently gained popularity. Blockchain is a new foundation in technology that allows transactions to be created and stored in decentralized ledgers with a high level of security and dependability.

[1] This sponsorship may take the kind of a loan, contribution, or financial aid. A competitive group of campaigners and volunteers will oversee the fund, maintaining the decentralized ledgers and serving as blockchain network miners.

[2] One way to raise money online is through crowd funding. It began as a means for individuals to make a one-time, modest financial contribution to support creative endeavors. Crowdfunding allows users to invest through a platform in innovative companies. (Y. He, 2018). However, the issue with crowdfunding as it now stands is that third-party platforms do not guarantee investors' money. The smart contract locates the block, adds it to the block chain, and links it to previous blocks in addition to carrying out the auctioning procedures. The block is then verified and approved. When an investor wants to add a new project to the decentralized Crowdfund, all nodes in the developer's network receive the block. At that moment, they start bidding based on their values for time, expense, support term, and votes with a goal to win.

In paper [3] The effort is to build a cost-effective, multimodal, personal oral crowdfunding application to assist aspiring developers in a new business in overcoming and seizing control of finances. Our goal is to use Block chain technology to better the digital world for all individuals. With new startups joining the community and having a safer place to raise money, present their creative concept, and make money off of it, our software will help the community thrive.

Drawing from extant research on block chain security and privacy concerns, Li et al. [11] through the examination of well-known block chain systems, the security risks posed by block chains have been methodically investigated. They make a substantial contribution by (i) investigating the causes and possible consequences of each risk or vulnerability; (ii) investigating the particular attack that fits the circumstances; and (iii) investigating the vulnerability that has been exploited.

Incorporation with Additional Technology

The potential enhancement of usability, security, and effectiveness in platforms for fundraising in the near future lies in the capability to integrate blockchain-based crowdfunding with other cutting-edge technologies. For example:

• **Big Data Analytics:** Harnessing big data analytics techniques in collaboration with blockchain-based crowdfunding platforms can open up the extraction of valuable insights from extensive datasets. Consequently, this can aid in understanding contributor behaviors, identifying market tends, and optimizing campaign strategies.

• **Internet of Things (IoT):** Leveraging IoT devices can streamline the monitoring and validation of physical assets or project milestones associated with crowdfunding initiatives. This integration holds the potential to enhance transparency, accountability, and the reliability of project progress and outcomes.

• **Artificial Intelligence (AI):** Analyzing crowdfunding data with the help of (AI) i.e. Artificial Intelligence can be incredibly beneficial for project creators and contributors alike. By analyzing crowdfunding data, AI algorithms can detect trends, evaluate project feasibility, and provide tailored suggestions to help project creators and contributors make informed decisions. It optimizes projects to better align with the interests of potential contributors, ultimately leading to more successful crowdfunding campaigns.

• **Identity Verification Technologies:** Incorporating identity verification technologies, which can things like facial recognition or biometrics systems, into crowdfunding can enhance security, alleviate fraud risks, and ensure compliance with regulatory mandates.

Prospective Opportunities

There is a boundless opportunity under the influence of blockchain technology on the crowdfunding environment. Let's explore the advantages that implementing blockchain could bring to the development of crowdfunding apps. As we move forward, it is anticipated that blockchain will become a prevalent means for executing online transactions across various global technologies. Crowdfunding platforms are one such domain where blockchain technologies can be effectively applied. A prevalent issue in the current global crowdfunding scene is the lack of regulation, leading to instances of fraud in some crowdfunding campaigns. Additionally, there are challenges related to project completion delays. The objective of this project is to tackle these issues by implementing Ethereum smart contracts on the crowdfunding platform, ensuring fully automated execution of contracts to prevent fraud and guarantee timely project delivery.

Incorporating NFTs into crowdfunding initiatives provides a channel for showcasing distinct digital assets, collectibles, or exclusive content access rights. NFTs have attracted significant interest, especially in the realms of art and gaming, opening up novel opportunities for creators to monetize their work and connect with their supporters. In the realm of blockchain-based crowdfunding, the concept of impact investment can be incorporated, enabling contributors to support initiatives aligned with their social or environmental values. Social tokens, indicative of membership or ownership in a group or initiative, serve as incentives for sustained participation and acknowledgment of dedicated supporters.

CONCLUSION

• The blockchain-based crowdfunding model of Fund Future holds significant promise to transform the financing landscape for projects and empower individuals globally. The forthcoming crowdfunding platforms are poised to transcend the constraints of conventional funding approaches, facilitating international collaborations and endorsing sustainable and socially responsible initiatives. This is achieved by harnessing the transparency, security, and efficiency inherent in blockchain technology

• For successfully addressing numerous challenges and lingering issues, including user adoption, legislative frameworks, compatibility, governance, safety, expandability, and confidentiality issues, is imperative for the future success of blockchain-based crowdfunding. To unlock the full potential of fund crowdsourcing, collaboration and concerted efforts from industry stakeholders, including regulators, practitioners, and researchers, are essential.

• With the field evolves and integrates (AI) Artificial Intelligence and IoT Internet of Things technologies, it is important to explore new trends and carry out further research on legal, administrative, and technological concerns. This will assist in the growth and widespread adoption of blockchain-based crowdfunding. By doing so, we can create an ecosystem that is more transparent, open, and efficient in supporting innovative initiatives and driving positive change across various fields.

Integrating blockchain technology into crowdfunding is the major objective of this paper. According to the study it's been discovered that blockchain technology offers several advantages over traditional crowdfunding methods, including heightened transparency, enhanced security, and reduced costs. Through the utilization of blockchain technology, crowdfunding platforms can establish a more efficient, trustworthy, and accessible fundraising environment for both entrepreneurs and investors. The implementation of blockchain in crowdfunding processes can streamline access to capital for entrepreneurs and provide investors with opportunities to support promising projects. Nevertheless, the research paper acknowledges challenges associated with blockchain in crowdfunding, such as regulatory hurdles, technical complexities, and potential scalability issues. Addressing these challenges will necessitate collaborative efforts from various industry stakeholders, including regulators, developers, and investors. In conclusion, the research paper asserts that blockchain-based crowdfunding has substantial potential to reshape how entrepreneurs secure capital and how investors engage in early-stage projects. With the ongoing evolution and growth of this technology, we anticipate the emergence of even more revolutionary use cases, creating fresh opportunities for both entrepreneurs and investors

References

[1] Baber, H. (2019) Blockchain-based crowdfunding: a \"pay-it-forward\" version of the WHIRL model, International Journal of Recent Technology and Engineering (IJRTE), September, Vol. 8, No. 3, pp. 3225-3229, ISSN: 2277-3878

[2] Y. He, H. Li, X. Cheng, Y. Liu, C. Yang, and L. Sun, "A blockchain based truthful incentive mechanism for distributed p2p applications," IEEE Access, vol. 6, pp. 27 324–27 335, 2018.

[3] V. Hassija, V. Chamola, S. Garg, N. G. K. Dara, G. Kaddoum, and D. N. K. Jayakody, "A blockchainbased framework for lightweight data sharing and energy trading in v2g network," IEEE Transactions on Vehicular Technology, 2020.

[4] Chiu, J. and Koeppl, T. (2017) The Economics of Cryptocurrencies [online]https://www.bis.org/events/eopix_1810/chiu_paper.pdf (accessed 2017).

[5] Huawei Huang and Zibin Zheng, From Technology to Society: An Overview of Blockchain- Based DAO [2021].

[6] Crowdfunding Meets Blockchain, DOI [online] dx.doi.org/10.2139/ssrn.3047682, Sahdev, N. (accessed 15 July 2019).

[7] Y. Yuan and F.-Y. Wang, "Blockchain and cryptocurrencies: Model, techniques, and applications," IEEE Transactions on Systems, Man, and Cybernetics: Systems, vol. 48, no. 9, pp. 1421–1428, 2018.

[8] How data is stored in Ethereum Blockchain: https://laurentsenta.com/articles/storage- and-dapps-on-ethereum-blockchain/

[9] Blockchain & Smart Contracts: https://www.dappuniversity.com/articles/how to- build-a-blockchain-app

[10] K. Christidis and M. Devetsikiotis, "Blockchains and smart contracts for the internet of things," Ieee Access vol. 4, pp. 2292– 2303, 2016.

[11] X. Li, P. Jiang, T. Chen, X. Luo and Q. Wen, "A survey on the security of blockchain systems", Future Gener. Comput. Syst., vol. 107, pp. 841-853, 2017.