Crowdfunding Using Blockchain

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Abstract—One of the most well-liked methods of raising money for a project, a cause, or to assist someone in need is through crowdfunding. Since the launch of Covid, there has been an increase in crowdfunding initiatives all over the world, from tiny initiatives to provide oxygen and medical assistance to huge organisations like PM Cares. The term "crowd funding" itself has a deeper meaning. An emerging industry grows quickly thanks to crowd funding. It offers new investment opportunities and a fresh product to help investors diversify their holdings. A new paradigm for young people looking to launch a business is crowd funding. The goal of this study has been to examine the risks associated with the industry itself, as well as the concerns and challenges it faces in the Indian environment.

I. INTRODUCTION

Crowdfunding has become a viable alternative source of funding for many different kinds of initiatives over the past several years. Crowdfunding was first mostly utilised to support artists from various industries. The emergence of numerous online sites for crowdfunding in the music industry makes this method of funding appealing to musicians. Since 2010, there has been a lot of discussion and research done on crowd funding for businesses. The new paradigm for young people starting a business is crowd finance. As the name implies, it is straightforward: "Crowd" funding for your company. The procedure of raising money from the general public or customers may appear to be quite straightforward, but it actually highlights a complex conundrum that needs to be solved. The lack of financial resources is a significant issue for young aspiring business owners who want to implement a concept through a business plan. Young entrepreneurs frequently encounter significant obstacles when attempting to raise money through traditional channels because of the challenges of doing so, specifically because banks' strict financial requirements, a lack of lending experience, limited available collateral, and other challenges. For young entrepreneurs seeking funding, CF has some advantages over other funding options (business angels or venture capital funds), but it also carries some risks because the relationships formed between founders and funders are primarily built on the interaction facilitated by the online environment of the platforms or other social media. However, the literature has emphasized the benefits of CF as a financial source, describing it as "a novel phenomena appearing in the field of project financing" and "one of the latest and most powerful approaches to finance projects, or even companies". Because founders may lack specialized knowledge about the new financial mechanism, the best business model to employ, or the strategies to use to attract funds in an online environment that differs from traditional sources of financing offline, it is crucial to understand how entrepreneurs make decisions for financing a project on a CF platform (such as banks, business angels, and others).

II. LITERATURE REVIEW

A. Decentralized Applications: The Blockchain-Empowered Software System [1]

This paper traces the development of blockchain systems to reveal the importance of decentralized applications (dApps) and the future value of blockchain. We survey the state-of-the art dApps and discuss the direction of blockchain development to fulfil the desirable characteristics of dApps. We gained an overview of dApp research and got familiar with recent developments in the blockchain. The lack of legal regulation and auditing has brought bad reputations to blockchain technology. Blockchain systems leverage cryptography technologies, P2P networking, and consensus models which are pillars of decentralized applications We were also able to study the use of blockchain in IoT. Blockchain-based IoT solutions are well suited for simplifying business processes because IoT applications are by definition distributed. We also got to know about desirable characteristics of dApps like better performance, reasonable monetary cost, flexibility maintainability, and simpler identity management. This paper surveyed the state-of-the-art of blockchain technology and introduces decentralized applications (dApps) and how they are gamechanger. We were able to trace the

evolution of decentralized ledgers that led to classic blockchain systems adopting public consensus models

B. *A survey on blockchain technology and its security [2]*

This paper traces the development of blockchain systems and studies the security aspect which is a cornerstone of blockchain technology. We studied the rich history of blockchain from Merkle trees to Ethereum 2.0. We compared various consensus models like PoW PoS DPoS PoET PBFT DAG. They had different unique qualities and advantages. We noticed that speed and security are inversely related to each other. We studied cryptography and how it works on a high level. This paper presented Security risks and attacks associated with blockchain and we studied in deep about Network Attacks, Endpoint Security, Intentional Misuse, and Code Vulnerabilities. We got valuable insights into the previous attack which various blockchain networks and crypto exchanges faced. Many companies were formed to tackle these problems and find the bugs early. As technology got popular new things evolved. Quantum computing is a big threat to blockchain and developers are testing the new quantum-resistance signature algorithms. This paper has presented and compared eleven smart contract bytecode vulnerability analysis tools.

C. *The Model of Web-based Crowdfunding Platform [3]*

The paper states that the use of technology in crowd funding platforms enhances contributors' privacy when making contributions to campaigns. This is a result of the transaction being transparent. Records of every transaction that may be accessed via the platform are accessible to all users. Furthermore, because the contract is automatically applied if the conditions are satisfied, its application also boosts contributors' faith in the campaign. The system implementation will be finished by this research, and a platform acceptability study will be conducted. The secrecy of contributors when making contributions to campaigns is increased by the use of security technologies in crowd funding platforms. Through crowd funding, individuals can pool their funds to invest in a project or company that isn't on the stock exchange's list. Investors can purchase a piece of a project or business ownership through a joint venture for a modest sum. The goal of this project is to create a web based crowd funding platform model that satisfies investor requirements. Data on investor information requirements were gathered for this study using the questionnaire method. The OOAD method was used in this study's model design along with notation from the UML standard. The outcome of this research is a web-based platform model that makes it easier for investors to select and set up investment portfolios that suit their tastes

D. *Using Crowdfunding in an Innovative Way: A Case Study from a Chinese Crowdfunding Platform [4]*

Based on the description and analysis of numerous advances made by a Chinese platform enterprise engaged in crowdfunding for hostels, cafes, and other businesses, the author attempts to propose a new model of crowdfunding platform in this study. First off, this new platform company blends equity-based crowdsourcing with reward-based crowdfunding, which is different from typical crowdfunding models. With these types of crowdfunding models, backers go from being only customers, stockholders, or creditors to simultaneously playing the roles of both customers and creditors. Second, the Chinese platform firm attempted to establish a community of stockholders and a membership system that would enable even backers and

fundraisers of various projects to connect with one another in order to further encourage communication among them. The platform creating is the first step adopted by the enterprise to create a comprehensive business ecosystem, consisting of operational supporting, Institutional investors, entrepreneurship service, and intelligent hotel management service. They have focused on the model development and tried to provide insights for the growth and development of crowdfunding

E. *A Decentralized sharing app running a smart contract on the Ethereum blockchain [5]*

The authors finished a systematic design of the proposed payment channel-based HEX which benefits frequent Ethereum token traders and alleviates potential Ethereum network congestion. The authors propose the very first gas-price vs transaction-confirmation-latency model to help blockchain transaction issuers to minimize the overall cost of gas fee and transaction confirmation latency. Based on the proposed gas-price vs transaction-confirmation-latency function, the authors quantitatively evaluate the performance of the payment-channel based HEX. While the proposed platform is promising, this paper reveals several limitations that the authors intend to address in the future work to refine this platform.

F. *Application and evaluation of payment channel in hybrid decentralized Ethereum token exchange.[6]*

The authors finished a systematic design of the proposed payment channel-based HEX which benefits frequent Ethereum token traders and alleviates potential Ethereum network congestion. The authors propose the very first gas-price vs transaction-confirmation-latency model to help blockchain transaction issuers to minimize the overall cost of gas fee and transaction confirmation latency. Based on the proposed gas-price vs transaction-confirmation-latency function, the authors quantitatively evaluate the performance of the payment channel based HEX. While the proposed platform is promising, this paper reveals several limitations that the authors intend to address in the future work to refine this platform: Due to the nature of token lock in creating payment channel, malicious HEX users may initiate attacks on HEX by creating a large number of channels, or creating a large number of cancelled orders. They widely used KYC technique in many token exchanges or an effective incentive-and-punishment mechanism might be needed to prevent these attacks

G. *Evaluating The Financial Impact of Data Breaches Involving Account Credentials [7]*

The paper shows that businesses with account credential data breaches had lower annual profits and sales than businesses with non-account credential data breaches. The average operating expense does not, however, show a statistically significant difference. According to our findings, it would be beneficial to concentrate information security efforts on enhancing identity and access management procedures because incidents involving account credentials may have more detrimental financial repercussions. This study offers some intriguing findings that could motivate additional research projects. The objective was to empirically examine the financial costs that businesses incur when dealing with problems with user account credentials. They demonstrate that companies that suffer account credential data breaches have lower profits and sales than companies that suffer non-account credential data breaches.

H. Venturing Crowdfunding using Smart Contracts in Blockchain [8]

The paper states that a decentralized platform can provide a private, secure, and decentralized avenue for crowdfunding by leveraging the blockchain-based crowd funding method proposed in this research. The main goal of this paper is to make it possible for investors to effectively contribute to any project by developing smart contracts that allow contributors to have control over the money invested and to enable both project creators and investors to efficiently raise and reserve funding for the project. The blockchain use for crowdfunding is now only in the experimental stage, where many legal and technical difficulties still need to be resolved. As blockchain technology advances, our proposed project has a promising future with lots of room for growth and development. The proposed study effort can advance in the future for all concepts achieved using the proposed crowdfunding application in an easier and safer manner

REFERENCES

[1] W. Cai, Z. Wang, J. B. Ernst, Z. Hong, C. Feng and V. C. M. Leung, "Decentralized Applications: The Blockchain-Empowered Software System," in IEEE Access, vol. 6, pp. 53019-53033, 2018, doi: 10.1109/ACCESS.2018.2870644.

[2] A survey on blockchain technology and its security Huaqun Guo a,*, Xingjie Yu b,1 an Institute for Infocomm Research, A*STAR, Singapore b Singapore

[3] Maryani, A. S. Perbangsa and T. Udiono, "The Model of Web-based Crowdfunding Platform," 2020 International Conference on Information Management and Technology (ICIMTech), 2020, pp. 957-961, doi: 10.1109/ICIMTech50083.2020.9211136.

[4] L. Xuefeng and W. Zhao, "Using Crowdfunding in an Innovative Way: A Case Study from a Chinese Crowdfunding Platform," 2018 Portland International Conference on Management of Engineering and Technology (PICMET), 2018, pp. 1-9, doi: 10.23919/PICMET.2018.8481838.

[5] Andreas Bogner, Mathieu Chanson,Arne Meeuw,"A Decentalised sharing app running a smart contract on the Ethereum blockchain" ,2016..

[6] Xuan Luo, Zehua Wang, Wei Cai, Xiuhua Li, Victor C.M. Leung, Application and evaluation of payment channel in hybrid decentralized ethereum token exchange, Blockchain: Research and Applications,Volume 1, Issues 1–2,2020

[7] Chu, Scott, Evaluating The Financial Impact of Data Breaches Involving Account Credentials (September 18, 2021). Available at SSRN: https://ssrn.com/abstract=3926497 or http://dx.doi.org/10.2139/ssrn.3926497

[8] N. Yadav and S. V., "Venturing Crowdfunding using Smart Contracts in Blockchain," 2020 Third International Conference on Smart Systems and Inventive Technology (ICSSIT), 2020, pp. 192-197, doi: 10.1109/ICSSIT48917.2020.9214295.