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Blockchain in Crowdfunding

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Abstract: *At present, crowdsourcing as a source of raising funds, typically for business start-ups, has gained much primacy, with most businesses resorting to the use of crowdfunding platforms to raise funds as it is relatively inexpensive and uncomplicated in nature. The call for a solution to issues related to security, investor abuse, and illegal transactions that could plague crowdfunding contracts spurred this paper. Using existing literature on crowdsourcing and blockchain technology, we put forward a conceptual framework that can provide the solution to the problems related to crowdsourcing contracts through the use of blockchain technology. Taking into account the role of the intermediary platforms, we examine how the foundational qualities of blockchain technology may resolve the problems of these platforms. We will discuss how blockchain technology can effectively and securely handle the relationship between fundraisers, platforms, and investors. We anticipate that our paper will pique the interest of researchers interested in the practicality of blockchain technology in crowdsourcing contracts.*

Keywords: Investors, Crowdfunding, and Blockchain Technology

I. INTRODUCTION

The blockchain is an in assailable digital ledger that records every transaction. It is a distributed system that contains all the records and is stored in every node in the decentralised network. Smart Contracts are called when Ethereum allows the running of applications on the blockchain. Most of the smart contracts are run on the Ethereum Virtual Machine. Crowdfunding provides an incredible way to find cash for innovative project ideas. Nowadays, crowdfunding companies charge high fees, and sometimes scams happen. Implementing a crowdfunding strategy on the blockchain will help to solve these types of problems. The Peer to Peer smart contract for crowdfunding removes the traditional transaction fees and platform fees normally associated with other crowdfunding platforms, such as Kickstarter. The objective of our project is to create a genuine application so that every new idea gets life. We have designed a crowdfunding site which is based on a blockchain website. We provide an easy interface for everyone to create and post their ideas on this application. These ideas then become public and accessible to everyone. Anyone who wishes to support their ideas can easily contribute. All these processes are done in an immersive manner. Crowdfunding is preferred for business startups apart from other sources of funds because of the relatively lower cost of raising funds, the speed at which funds can be raised, and the lower entry hurdle for businesses.

II. CROWDFUNDING CONTRACTS

The conundrum for smallest businesses is the ability to raise money at the cheapest cost. Crowdfunding as a source of raising funds delivers speed, cheap, and efficiency for business startups in terms of fundraising (Zhu, 2016). Crowdfunding provides an easy, inexpensive, and efficient way to Crowdfunding is turning out to be a popular source of business startup funding in many developed countries. This concept operates almost identically to the fiat money system where the platforms serve as an overseeing authority that operates the activities of the fundraisers and the investors to ensure that there is trust, safety, and security in the crowd dealings. According to Goldfarb, Forman, and Greenstein (2005), the internet is huge and crowdsourcing contracts can be used by lots of people across the globe. However, raising the exact amount of money required from investors could be dependent on geographical location. In their study of three diverse crowdfunding contracts, Miceli, Pizzetti, Ordanini, and Parasuraman (2011) observed that crowdfunding contracts are witnessed by individuals who are close to them, such as family and friends. This simply concludes that although the internet is extensively spread, only individuals near to the location of the crowdfunding contract might be interested. This is as a result of the fact that differences in geographical areas could have a significant impact on information asymmetry (Morgan, 2004). Apart from propinquity, Chum and Zhang (2016) in the study of 51 crowdfunding platforms noticed that

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higher funds were raised on platforms where due diligence was a priority. This is an indication that individuals are willing to support crowdfunding projects when they can be confident of their lawfulness. Figure 1 shows the framework of a crowdfunding contract.

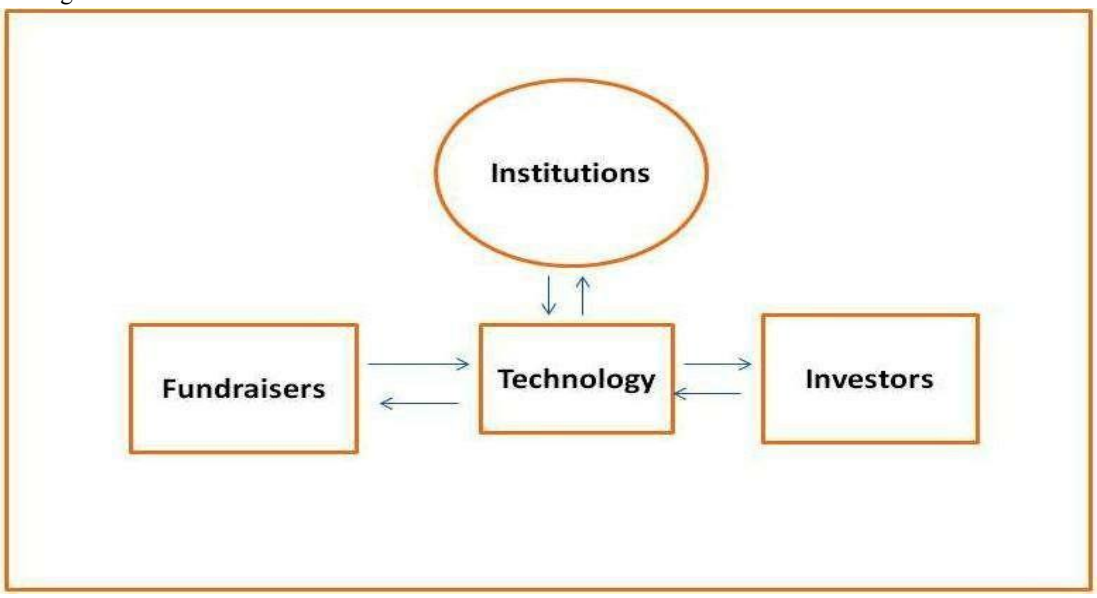

Figure 1: Framework for Crowdfunding contract

III. BLOCKCHAIN TECHNOLOGY

The concept behind cryptography is the protection of important information at every level of usage. It could be shielding from unauthorized users or the provision of access granted to only authorized users in an organization, institution, or at a personal level. The cryptocurrency concept functions on the principles and values of privacy and security, as it is unquestionably reliant on the security of information (Saper, 2013). In the financial market, the availability of information, security, safety, and trust are some of the major components of how effective the market can be. During the barter trade era, trust through confirmation of the goods served as the only form of security backing trade, and the exchange of goods did not have to depend on the presence of an intermediary. However, the era of fiat money introduced the mediation model, where two parties have to depend on a third party to effectively impact transactions. Banks continued to serve as the trusted parties until the advent of the disruptive blockchain technology that provides the novelty of eliminating banks as mediators while still making transactions more secure. Blockchain technology goes beyond payments and extends into other aspects such as corporate governance, voting, and social institutions and holds the operations of the financial market (Wright and De Filippi, 2015).

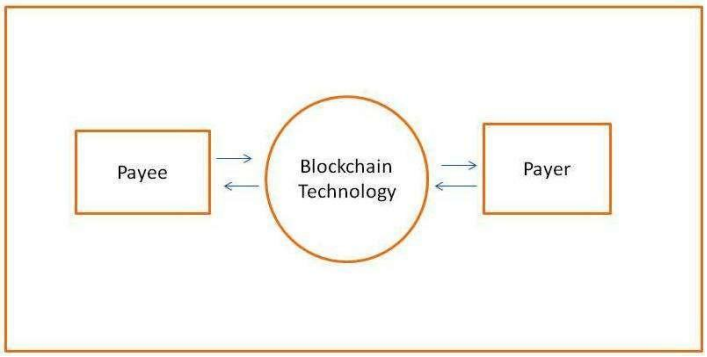

Figure 2: Framework for blockchain technology-mediated payment system

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IV. Elaboration of Research Framework

Figure 3 depicts the conceptual framework of blockchain technology-based crowdfunding. We consider the existing literature on crowdsourcing and blockchain technology and provide insight into how blockchain technology can be used to work on crowdsourcing contracts. We consider fundraisers as either individuals or institutions and also define investors into four categories and explain how the elimination of institutions (crowdfunding platforms) and replacing them with blockchain technology can provide efficiency and ensure security.

V. Blockchain-Based Crowdfunding Contract

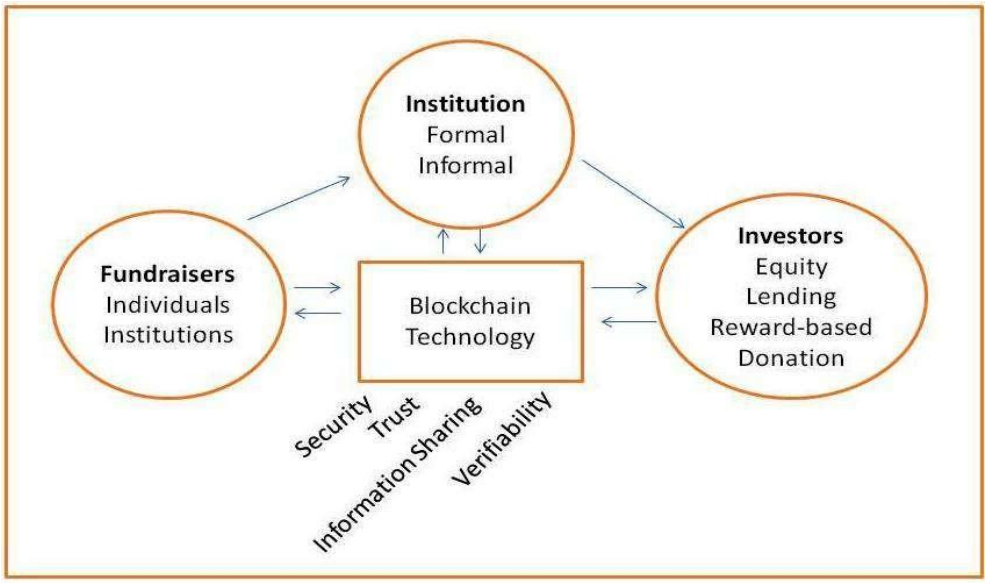

Figure 3: Framework for blockchain-based Crowdfunding contract

Fundraisers under a typical crowdsourcing contract are individuals or institutions looking for an affordable and uncomplicated way to raise funds to support their businesses. There are several sources of funds accessible for fundraisers to opt for in funding their businesses, but most prefer the use of crowdfunding as a source of funding due to the analogously lower cost of transacting on it. In a blockchain-based crowdfunding model, fundraisers would still have to go through institutions before their idea is accepted and evaluated. The use of blockchain technology can help the platforms record information on the business registration of the fundraisers and also keep a record of the nature of the business and make this information readily accessible for investors.

Institutions under a crowdsourcing contract are liable for the association between the fundraisers and the investors. The platforms serve as a mediator to discourage investor abuse and build trust between the trading parties. There are several pre-and post-activities undertaken by these platforms to make the fundraising campaign very successful. However, the biggest concern here for these platforms is to ensure trust and provide investor protection, and this can be challenging for the platforms. In a blockchain-based crowdfund, the technology is known as a trusted machine, and this can further the path of the crowdfund platforms in the battle to keep the contracts safe and secure.

VI. Results and Discussions

- **Fundraisers:** The recent call for the accurate regulation of crowdfunding activities to assure investor protection, safety, and also prevent money laundering has started research into blockchain technology. The blockchain technology's initial ideal is informative and can store info on the registration status of fundraisers who wish to use the crowdsourcing platforms (Buterin, 2015). With the Blockchain technology, information sharing between the three parties included in the contract becomes symmetrical, making it simpler for decision making amongst investors (Dwyer, 2014).

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- **Institutions:** Crowdfunding platforms have the authority to ensure the legality of a contract while at the same time protecting the interests of investors. Because the majority of crowd funding campaigns rely on these institutions, the implementation of blockchain technology will not only serve as a means of fund transmission and transaction. The blockchain technology is explained by Catalini and Gans (2017) as a general-purpose technology due to its ability to enforce contracts across a wide and huge combination of digital assets. Almost all the activities of the platforms could be automated using blockchain technology, and therefore, the existence of humans to ensure trust and confidence in transactions will not be needed.
- **Investors:** investors in a crowdsourcing contract reach out in many shades, and it is paramount to know how the establishment of the blockchain-based crowdsourcing contract could impact these types of investors. The investors seek refunds as well as protection and safety. In equity crowdfunding, blockchain technology can aid in the paperless registration and verification of shares as well as shareholder estimation irrespective of geographical location (Zhu and Zhou, 2016). Similarly, investors who lend or donate money in return for appreciation on the platform can also have their status verified and stored permanently on the block. It is necessary for investors to be able to trade their shares with ease and add value to their shares.

VII. Conclusion

The possibility of application Blockchain technology in various fields is still under study, and this is an indication of the possibility of blockchain technology resolving most of the problems related to humans in terms of trust. The call for investor protection and security in crowdsourcing contracts could be answered by the introduction of blockchain technology, which functions on a trust-free system where individuals have little to do to make it work. The use of blockchain technology in crowdsourcing contracts may provide the solution required. Blockchain technology provides an easy, secure, and convenient means for the exchange of information and the transfer of funds. The technology is programmable and can be extended to serve any other requirement in the crowdsourcing contract where necessary. Although technology can currently be used to change the role of platforms, in the future it may be used to execute crowdfunding contracts without the need for institutional and independent platforms.

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