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Role of Blockchain Technology in Philanthrophy

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Abstract: ***Our country has an excessive number of organisations, which deter individuals from donating since they are opaque and challenging to monitor. People frequently ponder whether giving to charitable organisations will affect their choice. Many non-profit organisations engage in unscrupulous business techniques to raise money. People's faith in charity has been shattered by these methods, which have also raised concerns about the reliability of charitable endeavours. Today's non-profit sector is highly concerned about transparency. By turning donations into digital assets and boosting trust in non-profit organisations, blockchain [1] and smart contracts [2] open up new opportunities for charitable giving. Now, donors can see the results of their donations, and charities can use crypto tokens [4] to encourage giving. In recent years, blockchain technology has become one of the most trending areas of technology. Specifically, distributed ledger technology has been used in the financial industry to create crypto currency and develop a new digital market sector. Despite this, blockchain with its immutability and transparency has a much wider range of potential applications. Blockchain technology has the ability to significantly alter the charity industry. Increased responsibility and confidence in charitable donations may result from blockchain's decentralised and transparent nature. The usage of blockchain in charity is examined in this research article along with its potential advantages, including greater accountability, increased efficiency, and increased transparency. The absence of regulations, technical complexity, and cost are some of the difficulties that must be overcome. The use of blockchain technology in philanthropy is significant and merits more research to ascertain how it may be most effectively incorporated into current systems to enhance the philanthropic sector.***

Keywords: Blockchain, Crowdfunding, Decentralised, Immutability, Smart Contracts, Transparent

I. INTRODUCTION

In a democratic society, charity is essential. It is well known that several tragedies occur in this world every year, whether they are connected to fortune or life, and cause great harm. Many people need assistance from groups that offer services, such as financial aid or basic necessities, in order to recover from various types of losses. Nowadays, people are becoming gluttons in an effort to benefit society. Therefore, charity is an industry that is rapidly expanding in the modern world. It has moved away from its old organisational notions and towards a decentralised crypto-currency-based structure. Current charity platforms face the following main issues:

1) *Lack of Transparency:* Donors frequently find it challenging to monitor how their contributions are being utilised, and charitable organisations may not give donors enough information about where their money is being spent.
2) *Ineffective Fund Distribution:* Traditional philanthropic procedures can be slow and ineffective, and it may take a while for funds to get to the people they are intended for.
3) *Fraud and Corruption:* The absence of monitoring and accountability in the non-profit sector may make it easier for fraudulent operations to take place, which may reduce public confidence in philanthropic organisations.

These problems emphasise the requirement for a more open, effective, and reliable system for charity giving. These issues could be resolved and the philanthropic industry strengthened by the use of blockchain technology.

II. RESEARCH OBJECTIVES

1) To investigate the possible advantages of applying blockchain technology in philanthropy, such as greater accountability, increased efficiency, and more transparency.
2) To identify the difficulties in applying blockchain technology to charity, such as the lack of regulations, the complexity of the technology, and the expense.
3) To investigate the existing situation and future development prospects of blockchain technology in the philanthropic industry.
4) To make suggestions on the best ways to incorporate blockchain technology into current processes in order to enhance the charity sector.

III. RESEARCH METHODOLOGY

The study's research methodology will combine qualitative and quantitative research techniques to examine the impact of blockchain technology on charity. To accomplish the goals of the research, the following measures will be taken:

1) *Literature Review:* A thorough analysis of the body of knowledge on blockchain technology and its uses in philanthropy will be done. This will give a general picture of the situation and make it easier to spot any advantages and drawbacks of applying blockchain technology to philanthropy.
2) *Case Studies:* A number of case studies will be carried out to look at the real-world uses of blockchain technology in the philanthropic industry. This will shed light on how blockchain is applied in practise and how it affects the industry.
3) *Data Analysis:* Both qualitative and quantitative methodologies will be used to examine the data gathered from the literature review, case studies, surveys, and interviews. This will assist in addressing the research questions and achieving the study's goals.

IV. LITERATURE SURVEY

The literature review on blockchain technology offers an overview of the current state of the topic and its prospective applications in numerous areas, including philanthropy. The survey highlights the main characteristics of blockchain technology, such as its decentralised structure, immutability, and transparency, as well as the potential advantages these characteristics may have for the philanthropic sector, such as increased accountability and transparency, decreased fraud, and more effective resource distribution.

The literature review also underlines the difficulties and restrictions related to the use of blockchain technology, such as the absence of standards and regulations, the technical difficulty of the system, and the possibility for power centralization within the network.

Overall, the review of the literature reveals that while blockchain technology has the potential to significantly improve the philanthropic sector, more study and development are required to overcome the difficulties and restrictions related to its application. According to the available research, blockchain technology adoption in philanthropy is still in its infancy. More study is required to fully comprehend its potential impact and best practises for integration into current systems.

V. PROPOSED SYSTEM

The following elements could be included in a proposed system for the application of blockchain technology in charitable endeavours:

1) *Decentralized Platform:* The foundation of the proposed system would be a decentralised platform that would be created. By utilising blockchain technology in the platform's construction, transactions could be recorded securely, transparently, and with full responsibility for all participants.
2) *Smart Contracts:* These are self-executing contracts with the terms of the agreement between the buyer and seller being directly encoded into code, could be used in the proposed system. By automating resource distribution, smart contracts can lower the risk of fraud and poor management.
3) *Donor Tracking:* Through the decentralised platform, donors will be able to monitor the real-time distribution of their contributions. The platform would offer an open accounting of every transaction, guaranteeing that money is being spent for what it is designed for.
4) *Recipient Tracking:* To increase transparency and accountability for the use of money, recipients of funding would also be able to follow the allocation of resources in real-time. Additionally, this would support ensuring the efficient and effective use of resources.
5) *Verification and Validation:* To assure the accuracy of all transactions and to stop fraud, the suggested system would include a verification and validation procedure. Combining manual and automated checks, like identity verification and anti-fraud algorithms, may be used in this procedure.

VI. DAPP MODEL

Blockchain platforms like Ethereum, EOS, or TRON could be used to create a decentralised application (DApp) model for the application of blockchain technology in philanthropy. The DApp would include a decentralised database, a smart contract layer, and a user interface, among other things.

1) *Decentralized Database:* The DApp's foundation, the decentralised database would be in charge of keeping track of all transactions on the blockchain. As a result of the database's distribution over numerous nodes, all transactions would be securely and openly recorded.

2) *Smart Contract:* The smart contract layer would automate resource distribution and enforce the terms of the agreement between donors and beneficiaries. The self-executing smart contracts would operate on the blockchain and offer a secure and open system for allocating resources.
3) *User Interface:* Donors, recipients, and administrators would be able to interact with the DApp using a straightforward and intuitive user interface. The interface would be usable from any device with an internet connection and contain functions like donation tracking, project management, and data visualisation. The DApp concept would offer a safe, open, and effective platform for the distribution of funds in the nonprofit industry, enhancing the transparency and effectiveness of charitable contributions. The DApp approach would also be open source and community-driven, enabling ongoing development and the gradual addition of additional features and capabilities.

VII. MODULES AND THEIR FUNCTIONALITIES

1) *Donor Module:* This module would enable donors to give to charitable organisations and monitor how their money was used. It would have capabilities like monitoring donations, creating tax receipts, and allowing donors to specify particular causes they want to support.
2) *Recipient Module:* Fund beneficiaries, such as non-profit organisations, would be able to access and manage the resources contributed by donors thanks to the Recipient Module. It would include capabilities to track resources, manage projects, and deliver updates and reports on how money was spent.
3) *Verification Module:* This module would be in charge of confirming the legitimacy of donors and beneficiaries as well as making sure that all transactions were accurate. To validate transactions and stop fraud, it would use a combination of manual and automated checks, like identity verification and anti-fraud algorithms.
4) *Contract Module:* This module would employ smart contracts to automate resource distribution and make sure that money is spent for what it is designed for. The module would also enable the generation of unique contracts for particular activities or projects.
5) The analytics module would provide light on how resource allocation has an effect and aid in future resource allocation optimization. It would have capabilities including reporting, trend analysis, and data visualisation.
6) The system's administrative controls and management capabilities would be provided by the admin module, which would also give users the ability to be added and managed, transactions to be watched, and system settings to be adjusted.

Together, each of these modules would offer a safe, open, and effective platform for the distribution of funds in the philanthropic sector, enhancing the transparency and effectiveness of charity giving.

VIII. ARCHITECTURE OF THE APPLICATION

The system architecture is shown in Figure 1 below:

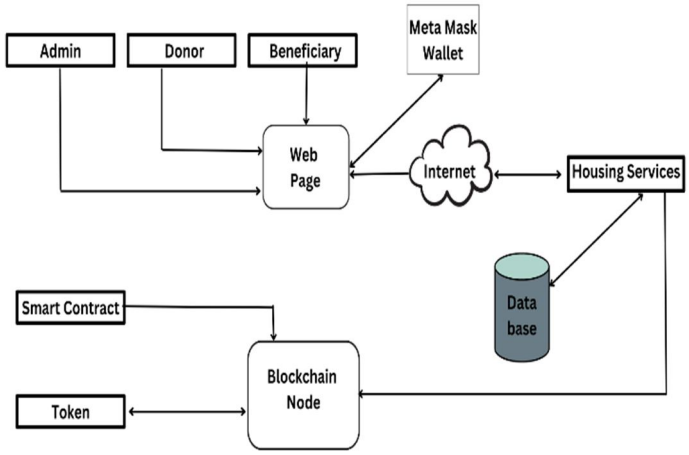

Figure 1: System Architecture

IX. APPLICATIONS

1) By eliminating these middlemen, blockchain technology can assist charities in more effectively managing their financial resources and acting as a marketing tool.
2) Donors would no longer be in the dark about what is happening with their money if blockchain technology were to be included into organisations. Along with donor information, donation information would be stored in blocks.
3) Since blockchain is a public ledger that anybody can see, it would be exceedingly challenging to perpetrate charity fraud because donors can carefully monitor their payments and make sure no data has been altered.
4) Charities may collect donations safely, transparently, and internationally without having to pay exchange commissions.
5) Smart contracts are blockchain-based programmes that have rules and conditions built into them that trigger specific actions when these conditions are satisfied. These contracts may serve as agreements between the giver and the charity organisation in the case of philanthropy. For all parties engaged in the contribution process, this opens up a lot of opportunity and has the potential to fully automate and be uncompromising.

X. CONCLUSIONS

In conclusion, the application of blockchain technology to philanthropy has the potential to significantly raise the efficacy, accountability, and transparency of philanthropic giving. Blockchain technology has the ability to revolutionise the charitable industry and have a good impact on the world by offering a safe and transparent ledger of transactions, automating the transfer of resources through smart contracts, and enabling cross-border donating. According to the literature analysis, there is significant interest in using blockchain technology in philanthropy, and there are a number of initiatives underway to investigate its potential uses and advantages. The suggested DApp model provides a safe, open, and effective platform for resource distribution, enhancing the transparency and effectiveness of philanthropic giving.

Future studies should concentrate on the deployment and assessment of charitable systems based on blockchain, investigating the difficulties and chances offered by this ground-breaking technology. The application of blockchain technology in philanthropy has the potential to significantly contribute to the advancement and development of society through sustained research and development.

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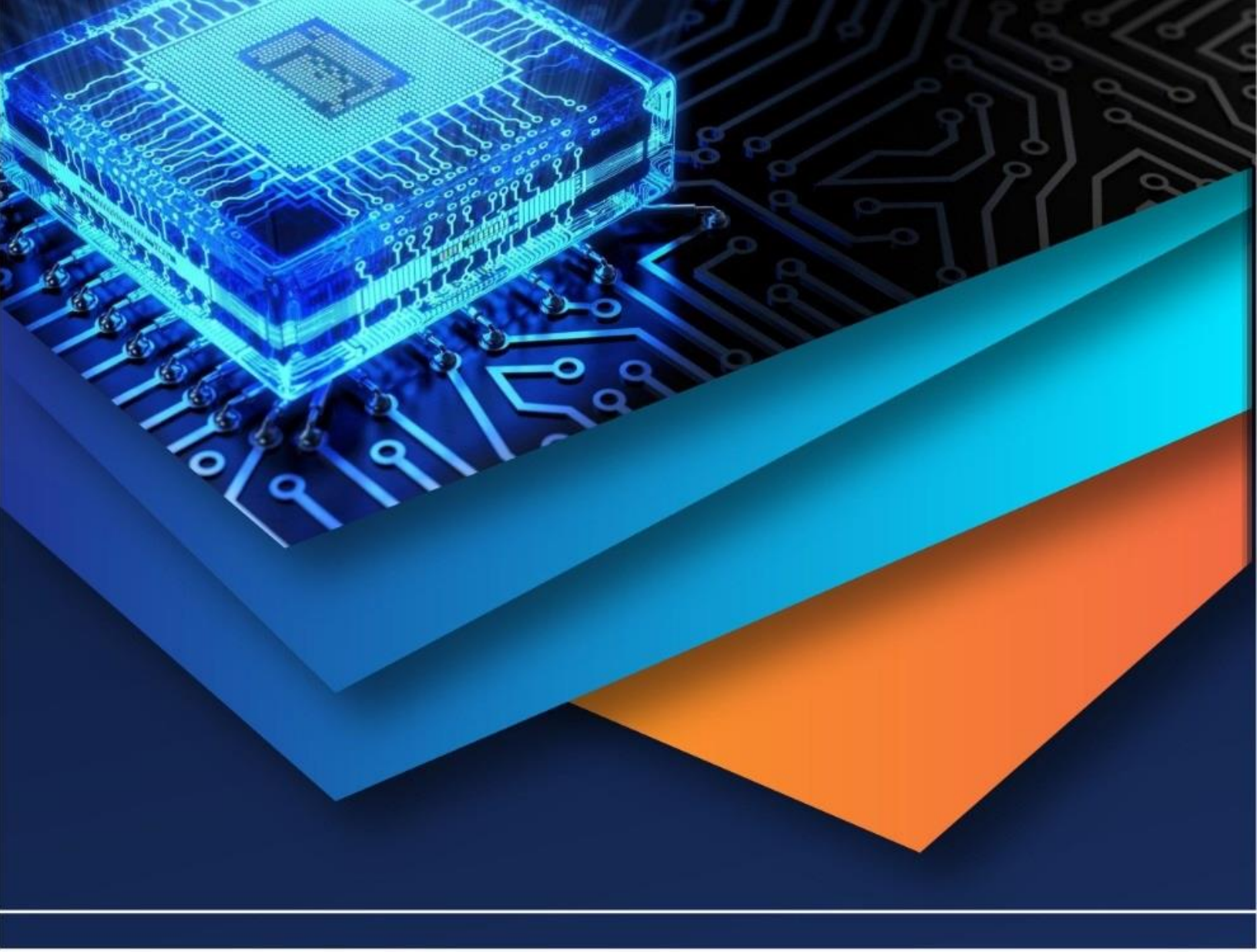

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