



THE DECENTRALIZED CHARITY PORTAL

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PROBLEM STATEMENT

- In a world where charitable contributions play a pivotal role in addressing societal needs, there is a pressing need for a transparent and efficient system that connects donors with a diverse range of charity organizations.
- Traditional methods of donation often lack transparency, leaving donors uncertain about the impact of their contributions.
- Furthermore, the process of volunteering for charitable causes can be fragmented and lacks a unified platform for coordination.

OBJECTIVES

TRANSPARENCY ENHANCEMENT

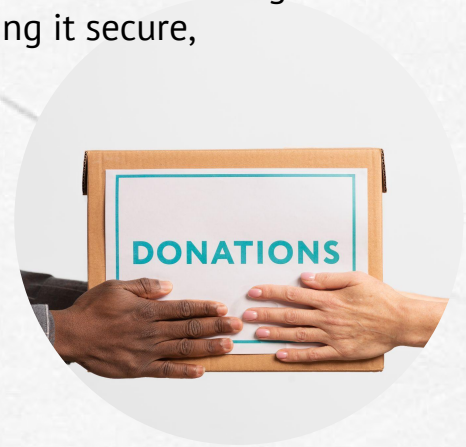
Enable donors to have full transparency into the utilization of their contributions by implementing a blockchain-based system that records and displays real-time transactions related to specific fundraising campaigns.

EFFICIENT FUNDRAISING

Facilitate charity organizations, including NGOs and other entities, in hosting decentralized fundraising campaigns. Utilize blockchain technology to streamline the fundraising process, making it secure, transparent, and efficient.

UNIFIED VOLUNTEER ENGAGEMENT

Create a centralized platform for NGOs and various charity organizations to post volunteer opportunities. Provide volunteers with a user-friendly interface to easily discover and engage with causes aligned with their interests.



OBJECTIVES

REAL-TIME TRANSACTION TRACKING

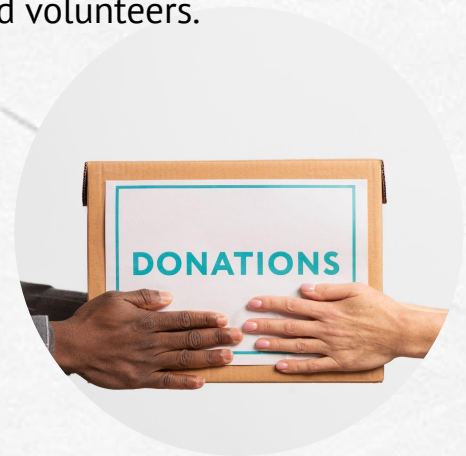
Develop a feature that allows donors to track transactions in real-time, offering a clear view of how their contributions are being utilized by charity organizations. Enhance accountability and build trust between donors and charities.

USER-FRIENDLY INTERFACE

Design an intuitive and accessible user interface for donors, charity organizations, and volunteers. Prioritize a seamless user experience to encourage engagement and participation.

DECENTRALIZED SMART CONTRACTS

Develop and deploy smart contracts on the blockchain to manage fundraising campaigns, volunteer incentives, and other critical processes. Ensure the security and efficiency of smart contracts to maintain the integrity of the platform.



LITERATURE REVIEW



| | |
|-------------------|--|
| Paper | SmartCon: A Blockchain-Based Framework for Smart Contracts and Transaction Management |
| Author | Muhammad Muneeb, Zeeshan Raza, Irfan Ul Haq, Omair Shafiq |
| Published | 2021 |
| Study | <ul style="list-style-type: none">• Transactions have immutable cryptographic signatures• Smart contracts self-execute with agreement terms• Using separate blockchains for storing smart contracts and transactions |
| Conclusion | Secure and transparent blockchain architecture ensuring integrity and accessibility in executing and tracking contracts. |
| Drawback | Scalability challenge due to separate blockchains for smart contracts and transactions. |

LITERATURE REVIEW



| | |
|-------------------|---|
| Paper | Location Based Service for Presence System Using Haversine Method |
| Author | Winarno E, Hadikurniawati W, Rosso R N |
| Published | 2020 |
| Study | <ul style="list-style-type: none">• Haversine Method in Location-Based Services (LBS)• Implementation of the Haversine Method in Presence Systems• Optimization and Practical Application |
| Conclusion | Effective application of the Haversine method in calculating distances for a presence system based on location, outlining the steps involved and emphasizing its suitability for location-based services. |
| Drawback | Assumes a perfect spherical Earth, which may lead to inaccuracies in distance calculations. |

LITERATURE REVIEW



| | |
|-------------------|---|
| Paper | Recent Advances in Smart Contracts: A Technical Overview and State of the Art |
| Author | Kemmoe V Y, Stone W, Kim J, Kim D, Son J |
| Published | 2020 |
| Study | <ul style="list-style-type: none">• Development and compilation of smart contracts• Deployment and storage on blockchain• Execution and validation by nodes |
| Conclusion | Smart contracts operate by being developed, deployed, and executed on a blockchain, providing a secure and automated way to enforce and execute contractual agreements. |
| Drawback | Challenging to update or correct errors in the code, potentially leading to unintended consequences or vulnerabilities. |

LITERATURE REVIEW



| | |
|-------------------|--|
| Paper | Aid, Charity and Donation Tracking System Using Blockchain |
| Author | Aashutosh Singh, Rohan Rajak, Harsh Mistry, Prachi Raut |
| Published | 2020 |
| Study | <ul style="list-style-type: none">• Transparent transaction process via website• Token-based transaction system• Government oversight and permission granting |
| Conclusion | Transparent transaction system, facilitated through a website and incorporating token-based transactions with government oversight, aims to instill trust among donors and enhance accountability in the donation process. |
| Drawback | Potential privacy concern, as the use of hash values to uniquely identify transactions may compromise the complete anonymity of donors, raising issues related to confidentiality. |

LITERATURE REVIEW



| | |
|-------------------|---|
| Paper | Trust in Blockchain Cryptocurrency Ecosystem |
| Author | Muhammad Habib ur Rehman, Khaled Salah, Ernesto Damiani, Davor Svetinovic |
| Published | 2020 |
| Study | <ul style="list-style-type: none">• Security and decentralization in exchanges• User education and communication strategies• Risk mitigation and monitoring for traders |
| Conclusion | The comprehensive approach of implementing decentralized exchanges, enhancing user education and communication, and implementing effective risk mitigation strategies establishes a resilient foundation for addressing security concerns and fostering a sustainable and trustworthy cryptocurrency ecosystem. |
| Drawback | Potential challenge of penalizing attackers effectively, as it may be difficult to identify and enforce penalties in a decentralized and pseudonymous cryptocurrency environment. |



APPLICATION FLOW

The application flow of the decentralized charity platform involves a series of steps that guide users, donors, charity organizations, and volunteers through the process of registration, donation, campaign hosting, and volunteer engagement. Here's a detailed description of the typical application flow:

User Registration:

Donor Registration

Donors access the platform and register for an account.

Provide necessary information, including name, email, and password.

Authenticate the account through email verification or other secure methods.



APPLICATION FLOW

User Registration:

Charity Organization Registration

Charity organizations register on the platform, providing details about their mission, goals, and verification information.

The platform may include a verification process to ensure the legitimacy of charity organizations.

Campaign Hosting:

Charity Organization Creates Campaign

- Authenticated charity organizations create fundraising campaigns, specifying a target amount, purpose, and duration.

Campaign details are stored in the database, and a smart contract is deployed on the blockchain to manage the campaign.



APPLICATION FLOW

Campaign Hosting:

Donor Discovers and Contributes:

Donors browse through active campaigns, discovering causes aligned with their interests. Donors contribute to campaigns by connecting their digital wallets and sending cryptocurrency to the smart contract address.

Smart Contract Handles Contributions:

The smart contract records donor contributions, updating the total funds raised in real-time. When the target amount is reached, the smart contract triggers actions for fund utilization.



APPLICATION FLOW

Fund Utilization and Transaction Tracking:

Smart Contract Executes:

The smart contract automatically executes actions for fund utilization, which could include transferring funds to the charity organization and recording transactions on the blockchain.

Donors Track Transactions:

Donors can track real-time transactions related to the specific campaign they contributed to. The platform displays an auditable trail of transactions, enhancing transparency and trust.



APPLICATION FLOW

Volunteer Opportunities:

Charity Organization Calls for Volunteers:

Authenticated charity organizations post volunteer opportunities on the platform, detailing the nature of the work, required skills, and time commitments.

Volunteers Browse and Apply:

Volunteers browse through available opportunities, filtering based on their skills and interests.

Volunteers apply for opportunities, expressing their willingness to contribute time and effort.



APPLICATION FLOW

Real-time Communication:

Platform Notifications:

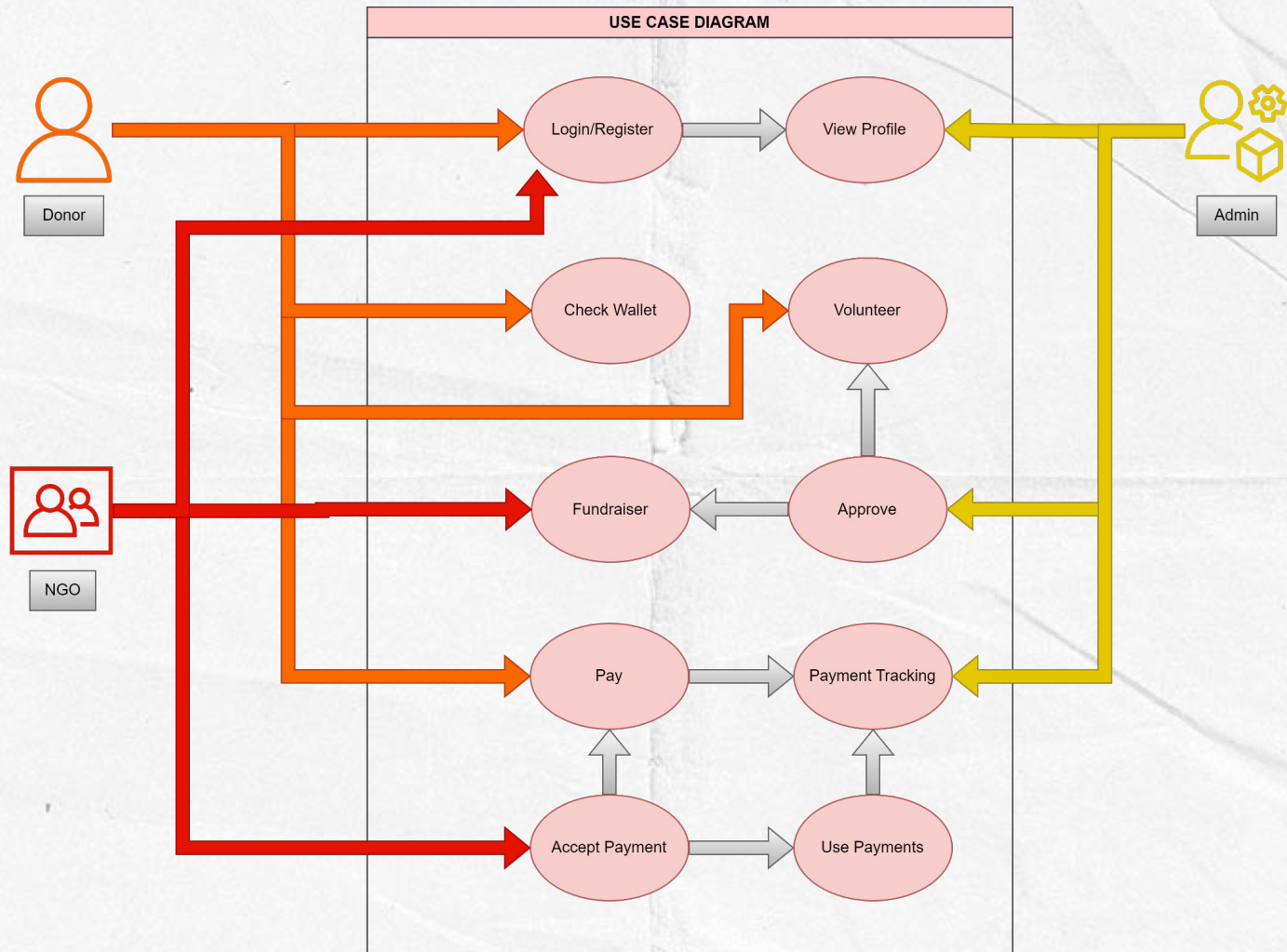
The platform sends real-time notifications to users, including donors, charity organizations, and volunteers.

Notifications may include updates on campaign progress, volunteer opportunities, and transaction confirmations.



USE CASE DIAGRAM

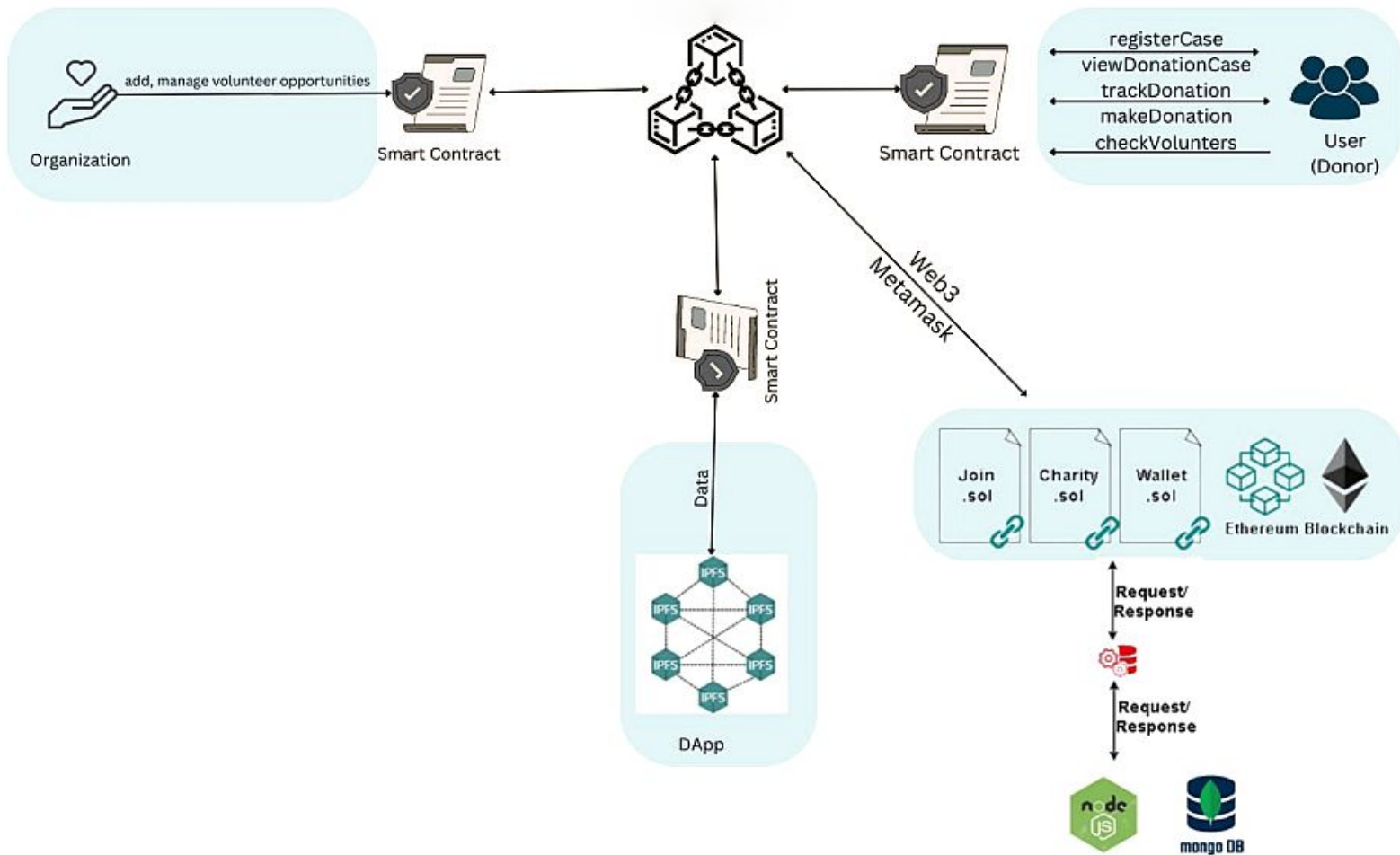






SYSTEM ARCHITECTURE





SYSTEM ARCHITECTURE DESIGN

Frontend

- The frontend is built using Next.js, which serves as the user interface for donors, charity organizations, and volunteers.
- It includes pages for user registration, campaign creation, volunteer opportunities, and transaction tracking.
- Implements user authentication and interacts with the backend through API routes.

SYSTEM ARCHITECTURE DESIGN

Backend

- Next.js is used for the backend as well, handling API routes for various functionalities.
- API routes manage user authentication, campaign creation, volunteer opportunities, and interactions with the blockchain.

Database

- Connects to a database (MongoDB or PostgreSQL) to store non-blockchain data, including user information, campaign details, and volunteer registrations.

SYSTEM ARCHITECTURE DESIGN

Blockchain Layer

- Integrates with a blockchain network (Ethereum) for transparent and secure management of smart contracts.
- Smart contracts handle fundraising campaigns, donation tracking, volunteer incentives, and record transactions on the blockchain.

Ethers.js

- Interacts with the blockchain node using Web3.js or Ethers.js to handle transactions, queries, and events on the blockchain.

Tools & Technologies Used



Solidity



Ethers.js



Next.js

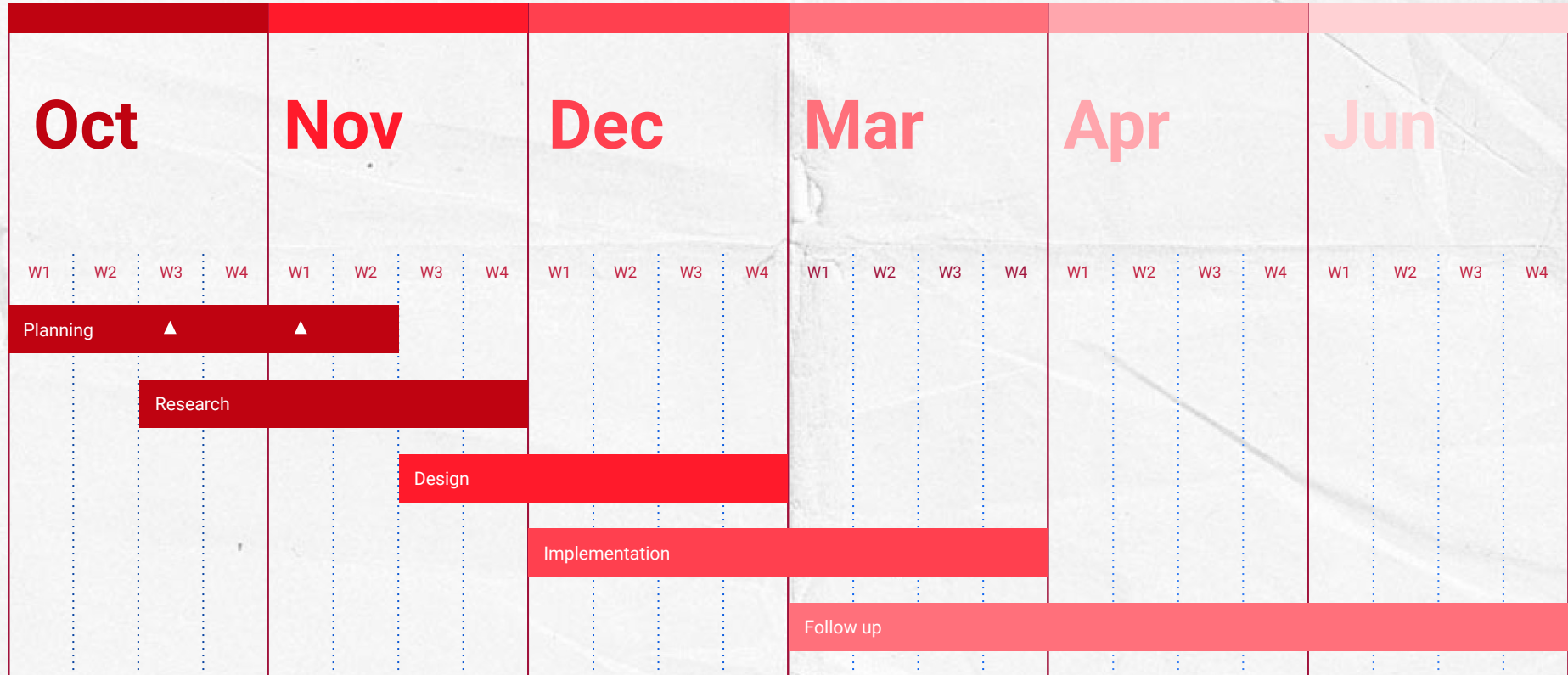


MongoDB

RESOURCE ALLOCATION

| | |
|-------------------|--|
| ROHIT | FRONTEND & BACKEND |
| SURYAJIT | SMART CONTRACTS & BLOCKCHAIN INTEGRATION |
| SUDARSANAN | UI/UX & DOCUMENTATION |
| SREENATH | DATABASE MANAGEMENT |

PROJECT PLANNING & SCHEDULING



EXPECTED RESULTS

- Enhanced donor confidence through transparent fund tracking.
- Swift and successful campaign fundraising.
- Increased volunteer engagement and streamlined coordination.
- Improved donor experience with real-time transaction visibility.
- Active volunteer participation due to rewarding incentives.
- Fostering a sense of community through user interactions.
- Credibility boost through successful charity organization verification.
- User confidence with minimal security incidents and legal compliance.
- Continuous user registration growth as the platform gains popularity.
- Iterative improvements based on user feedback, enhancing satisfaction.
- Clear and useful documentation aids user navigation.



CONCLUSION

- The decentralized charity platform, driven by Next.js, aims to redefine charitable contributions with transparency, efficiency, and community engagement.
- Ongoing monitoring, user feedback, and legal compliance are pivotal for sustained success and positive impact on philanthropy.

THANKS

