ENHANCING HEALTHCARE DATA ACCESSIBILITY AND TRANSFER IN NIGERIA THROUGH BLOCKCHAIN TECHNOLOGY.

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NIGERIA

A CAPSTONE PROJECT
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ABSTRACT

Efficient management and accessibility of healthcare information are crucial for effective healthcare delivery which supports informed decision-making. However, the current state of health information management in Nigeria and much of Africa presents significant challenges, impeding the healthcare system.

This capstone project confronts these challenges, emphasizing the need for improved healthcare data accessibility and transfer. Highlighting issues like the availability of reliable healthcare records and the sharing of medical data, we propose leveraging blockchain technology to address these obstacles.

Through the integration of blockchain, our project seeks to deploy a tokenized and secure healthcare record system. This platform will streamline data sharing, enhance transparency, ensure accessibility, and improve overall system efficiency, ultimately leading to enhanced healthcare outcomes and increased trust in the system. The research will utilize a mixed-methods approach, incorporating qualitative and quantitative data collection methods.

In essence, this project aims to showcase how blockchain can revolutionize the healthcare sector, especially within health data management systems. Our goal is to demonstrate the potential of blockchain to elevate healthcare provision and advocate for its widespread integration.

INTRODUCTION:

Our capstone project, which aims to improve healthcare accessibility and data dependability in Nigeria, is guided by a distinct mission and vision. Our goal is to create a tokenized platform powered by blockchain technology that overcomes the common problems with healthcare data quality, accessibility, and storage in the Nigerian health system. We envision a future where patients and medical professionals seamlessly access, share, and trust health information for informed decision-making.

This project's vision is intrinsically linked to the fundamental problems plaguing the healthcare system in Nigeria: data transfer and accessibility are persistent hurdles, largely attributed to manual data input methods and the resulting inconsistencies, incompleteness, and untimeliness of health records. The reliance on District Health Information Software 2 (DHIS2), while significant, leaves much to be desired in terms of delivering actionable data for decision-making and clinical governance, underscoring the pressing need for a blockchain-powered platform.

In addressing these challenges, this project will specialize in implementing blockchain to ensure the efficient and reliable accessibility of health information for both patients and medical professionals. By leveraging blockchain's secure and decentralized nature, we aim to create a platform that not only enhances data quality but also fosters a culture of trust in healthcare data.

The practical application of blockchain in this field is profound. By tokenizing health records, we enable secure sharing and retrieval of critical medical information. Patients will have unrestricted access to their health records, fostering an active role in their healthcare journeys. Medical professionals, in turn, will benefit from a reliable and accessible database, aiding in swift and informed decision-making. Through this application, we aspire to revolutionize healthcare data management and accessibility, contributing to a more efficient and patient-centric healthcare system in Nigeria.

PROBLEM STATEMENT

The Nigerian healthcare data management system faces challenges of manual handling, hindered accessibility, data quality issues, and delays in submissions. Electronic Health Records (EHR) suffer from overload and power interruptions, impeding efficient data retrieval critical for managing chronic diseases and emergencies. This affects healthcare providers, patients, marginalized communities, and government agencies for policy formulation. The proposed solution in this project aims to advocate for adopting a blockchain-based health system to mitigate these persistent issues.

SOLUTION/METHODOLOGY

- Enhance data availability and retrieval: Implement a tokenized platform granting patients shared access and control over their medical records, facilitating nationwide accessibility.

- Ensure data quality and authenticity: Convert medical records like images, scans, and fitness certificates into unique NFTs linked to patients, enhancing data accuracy and genuineness.

- Reward participation: Integrate utility tokens as incentives, encouraging hospitals and patients to engage with the platform and unlock additional features, promoting widespread adoption of the blockchain solution.

VISION, MISSION STATEMENT, GOALS and OBJECTIVES

VISION STATEMENT

To create a future where Nigerians have seamless access to their medical records, enabling healthcare access across the nation without barriers.

MISSION STATEMENT

Our mission is to develop a secure and tokenized platform that will democratize access to healthcare data for proper clinical decision-making and to improve the overall health of the patients.

GOALS

- To create a user-centric and secure platform that is accessible anytime.
- To enable medical personnel to upload medical records on the chain
- To enable patients to transfer their medical records to authorized bodies when demanded.
- To foster general inclusion by enabling fractional access to medical records between patients and healthcare providers.
- To promote the adoption of blockchain not only in the Nigerian healthcare sector but in other sectors as well.

OBJECTIVES

- Conduct structured research to pinpoint the challenges of data management and compare it with other existing solutions to find loopholes
- Design a blockchain-based solution that addresses these challenges
- Develop and deploy MVP versions in hospitals and select individuals for feedback.
- Gather feedback and improve on them.
- Implement features and functions based on feedback obtained.
- Ensure legal and ethical compliance with relevant authorities to ensure the privacy and security of patient data.
- Provide ongoing maintenance to ensure the platform's reliability, security, etc.
- Continuously upgrade the platform to higher versions to improve users' satisfaction.

PRE TOKEN CREATION

Token Name:

The token name "**Health Access Share Token**" is a suitable and relevant name that encapsulates the primary objectives and purpose of the project, conveying a clear message about its intended utility. Each component plays a crucial role in describing the core features and goals of the token.

- Health:

The term "Health" at the beginning of the token's name immediately signals its connection to the healthcare sector, establishing the domain of its use. It underlines the central focus of the project, which is to enhance and facilitate health-related activities in Nigeria through blockchain technology.

- Access:

The word "Access" conveys the primary function of the token, emphasizing the core capability to provide users with unrestricted and convenient access to their medical records. It highlights the goal of empowering patients to securely retrieve their health data whenever needed, promoting a patient-centric approach.

- Share:

The term "Share" signifies another fundamental function of the token—enabling users to easily share their medical records with healthcare providers. This aspect promotes efficient communication and collaboration between patients and healthcare professionals, essential for optimal healthcare delivery.

- Token:

This suggests the digital nature of the solution, indicating that this is a blockchain-based digital asset. It establishes the technological foundation of the project, emphasizing the utilization of blockchain to secure and manage the access and sharing of medical records.

Combining these components, "Health Access Share Token" provides a comprehensive and intuitive representation of the project's purpose: leveraging blockchain technology to grant patients seamless access to their medical records and empowering them to share this vital information with healthcare providers across Nigeria securely. It shows the essence of enhancing healthcare accessibility and efficiency through secure and decentralized data management.

Token Ticker

The token ticker "HAST" which stands for "Health Access Share Token," clearly captures the project's core objectives. It emphasizes fast and efficient access to medical records, promoting easy sharing for better healthcare outcomes.

This ticker distinguishes our project within the health sector and aids in easy recollection, fostering recognition and distinguishing it from similar initiatives, promoting our mission of advancing accessible and efficient healthcare data management.

Platform: ALTHASH BLOCKCHAIN

Why Althash?

- ★ Established Infrastructure
- ★ Decentralized Applications (dApps)
- ★ Smart Contracts
- ★ Token Issuance and Management
- ★ Security and Scalability
- ★ Community and Ecosystem

TOKEN MAXIMUM SUPPLY

To effectively serve the healthcare industry in Nigeria, the Health Access Share Token ($HAST) should have a maximum supply of **FIVE HUNDRED BILLION tokens (500, 000, 000,000).** This aligns with the project's mission to ensure scalability, accommodating patients and healthcare providers while allowing for future growth and increasing demand. The large token supply provides sufficient room for token distribution and rewards, which can further drive adoption and engagement with the platform. It can also enable the project to create a sustainable ecosystem with active participation from all stakeholders.

This approach promotes proactive healthcare management and enables efficient and informed treatment decisions. The transparency and security offered by $HAST enhance trust and collaboration among stakeholders, ultimately improving healthcare outcomes.

BUDGET ALLOCATION

Total Estimate: $200,000

Source: crowdfunding or sponsoring.

The table below is a complete breakdown of budget allocation with corresponding weightings:

Budget	Items	Amount ($)
Software Development	Smart Contract Development	27,000
	Front-end Development	18,000
	Back-end Development	18,000
	Quality Assurance Testing	9,000
	UI/UX Graphics design	4,500
	App development	13,500
Technological Infrastructure	Cloud Hosting (AWS or Similar Provider)	20,000
	Server Maintenance & Security	12,000
	SSL Certification	2,000
	Database Infrastructure	4,000
	Domain Registration	2,000
Marketing & Operations	Promotions & Advertisement	9,000
	Travel/Transportation	6,000
	Administrative/Operational Expenses	6,000
	Legal & Regulatory Compliance	3,000

	Research	1,500
	Miscellaneous	4,500
Team Salary		20,000
Incentive Mechanisms	Bounties/Giveaways	4,000
	Community Rewards	6,000
Locked Up Reserve	Cooperative Use & Partnering	10,000
	TOTAL	**200,000**

TOKEN SLOGAN AND DESCRIPTION

Token description

Our token, "Health Access Share Token" operates as a utility token within our platform, ensuring effortless access and secure transfer of medical records. This empowers users to take charge of their healthcare data, enhancing collaboration with healthcare providers. By making use of our token, users can gain access to our secured platform as well as unlock other unique features as they continue to interact with our platform.

Token Slogan

"Unlocking Health Records, Enabling Care"

"Unlocking Health Records" signifies the objective of providing patients access to their medical records, breaking down barriers, and ensuring they have control over their own health information. It emphasizes the goal of empowering individuals to retrieve and share their health data conveniently and securely.

"Enabling Care" emphasizes the ultimate purpose of the project, which is to facilitate and improve healthcare provision. By having access to their health records and being able to share them with healthcare providers, individuals can ensure they receive informed and tailored care.

LAUNCH DATE

Launch Date: May 27, 2025

Milestone	Tasks	Timeline
PRE-LAUNCH EVENTS		
	Planning and Research (8 months before MVP launch)	March 12, 2024
	Technical Design and Architecture- UI/UX DESIGN (6 months before MVP launch)	May 18, 2024
	Smart Contract Development (5 months before MVP launch)	June 03, 2024
	Front-end and Back-end Development (4 months before MVP launch)	July 17, 2024
	Cloud Hosting (3 months before MVP launch)	August 20, 2024
	Database Infrastructure (2 months before MVP launch)	September 22, 2024

	Domain Registration (1 month before MVP launch)	October 12, 2024
	SSL Certification (1 month before MVP launch)	October 30, 2024
	QA Testing and Bug Fixes (1 month before MVP launch)	November 2, 2024
Minimum Viable Product (MVP) Launch	Testing and Validation of MVP (7 months before main launch)	November 20, 2024
Development of Scalable Platform		December, 2024
	Community Building & Social media growth (6 month before main launch)	December 3, 2024
	Marketing and Launch Preparation (6 month before main launch)	December 15, 2024

Launch Date	-	**May 27, 2025**

IMPLEMENTATION CHALLENGES:

1. Technical Complexity: Implementing blockchain technology and ensuring interoperability with existing healthcare systems can pose technical challenges due to the complex nature of integrating distributed ledgers with established infrastructures.

2. User Adoption and Training: Encouraging both healthcare professionals and patients to adapt to a new system and providing sufficient training for effective usage and understanding of blockchain technology might face resistance or slow adoption rates.

3. Data Migration and Integration: Migrating existing healthcare data onto the blockchain and seamlessly integrating it with the new platform while maintaining data integrity and security is a challenging task.

4. Regulatory Compliance: Navigating the evolving and stringent healthcare regulations, privacy laws, and data protection standards while utilizing blockchain for healthcare data management can be a regulatory challenge.

5. Scalability and Performance: Ensuring that the blockchain-based system can handle a large volume of healthcare data and user traffic without compromising speed and performance is a crucial challenge.

6. Privacy and Security Concerns: Addressing privacy concerns related to healthcare data on a blockchain, considering the sensitive nature of medical records, and ensuring that the system is robustly secure against potential cyber threats.

7. Cost Management: Balancing the costs associated with blockchain implementation, including development, maintenance, and infrastructure costs, to ensure the project remains financially sustainable in the long run.

Policy Recommendations for Government Agencies and Stakeholders.

1. Encourage Collaboration: Foster collaboration between government agencies, healthcare stakeholders, and tech companies to drive innovation and adopt blockchain solutions for improved healthcare data management and also to seek financial support and incentives for the project

2. Policy Framework for Blockchain Integration: Develop a clear regulatory framework to guide the integration of blockchain technology in healthcare data management, ensuring compliance, privacy, and security.

3. Financial Support and Incentives: Offer grants, subsidies, or tax incentives to encourage the development and implementation of blockchain-based healthcare solutions, promoting efficiency and accessibility.

4. Public Awareness and Education: Initiate public awareness campaigns to educate citizens about the benefits and safety measures associated with utilizing blockchain technology in managing their health records.

5. Standardization and Interoperability: Advocate for standardization and interoperability of blockchain-based health data systems to ensure seamless sharing and access to medical records across healthcare providers while maintaining data integrity and security.