THE INSTITUTE OF FINANCE MANAGEMENT

IFM 1st International Annual Conference (IFMIAC)
Julius Nyerere International Conference Centre (JNIC)

12th November 2024

Dar es salaam, Tanzania

A Proposal for a Blockchain-Based Digital Identity Ecosystem in Tanzania: Enhancing Security, Privacy, and Accessibility

Deograss Eliud Widambe

Dar es Salaam Institute of Technology, Tanzania

widambedeograss5@gmail.com

Isakwisa Gaddy Tende

Dar es Salaam Institute of Technology, Tanzania

isakwisa.tende@dit.ac.tz

In Tanzania, managing multiple physical identity documents (e.g., ID cards, driver's licenses) is a significant challenge, leading to risks of loss, theft, and inconvenience. This research proposes a blockchain-based digital identity ecosystem tailored for Tanzania, leveraging Hyperledger Fabric to address these challenges. The proposed system integrates various identity-issuing organizations into a unified digital platform, enabling secure, immutable, and verifiable citizen identities. The blockchain's decentralized nature ensures enhanced security and reduces the risks of identity theft and fraud. This paper details the system's architecture and evaluates the performance of the Hyperledger Fabric solution in managing digital identities. Through rigorous testing, the results demonstrate that this blockchain-based approach offers superior performance, ensuring efficiency, scalability, and security. The findings suggest that the proposed digital identity ecosystem could transform identity management in Tanzania, providing a more secure and user-friendly alternative to traditional physical document-based methods.

Keywords: Blockchain , Identity , Privacy , Hyperledger Fabric , Immutability , Verification