Team: UniSphere

AI-Powered:

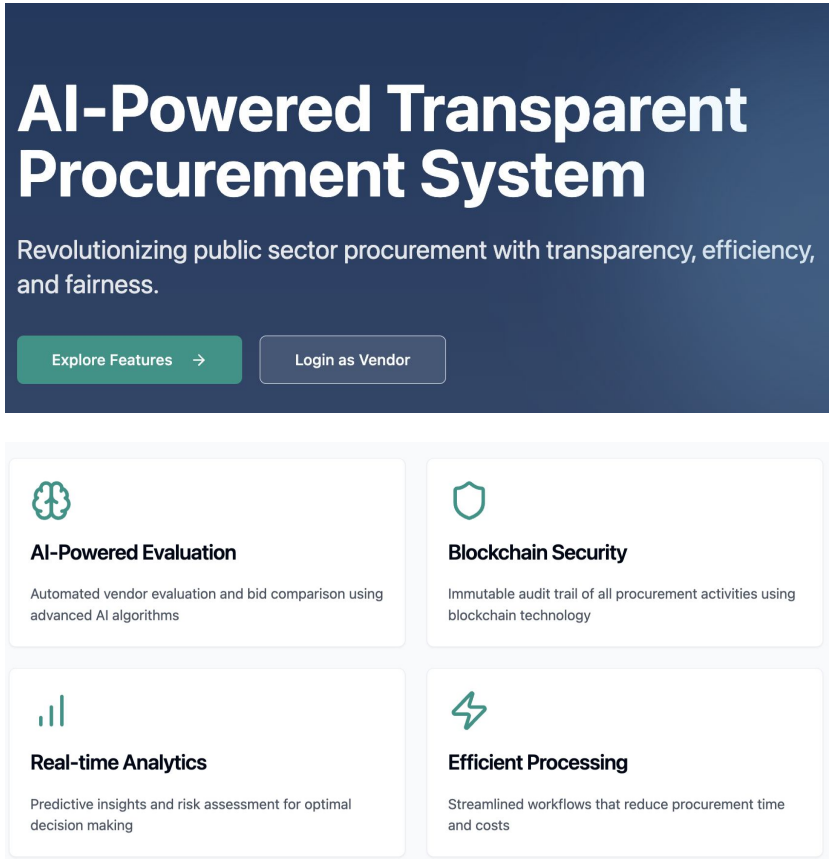
Transparent Procurement for Public Sector Connectivity

AI and blockchain solution transforming procurement for educational and healthcare infrastructure, ensuring transparency, fairness, and efficiency in connecting underserved regions.

UniSphere's AI-Powered platform tackles public sector connectivity procurement challenges in Africa.

By integrating AI and blockchain, it addresses corruption, bias, and transparency issues in infrastructure projects.

The platform automates vendor evaluation, creates immutable procurement records, and enables public monitoring to improve resource allocation for underserved schools and health centers.



The Story

The Problem of Connectivity in Africa

Imagine a school in rural Nigeria that has been promised high-speed internet as part of a national initiative.

The funds are allocated, and the project is "completed" on paper. But months later, the school remains offline because substandard equipment was installed by a vendor who cut corners.

Teachers and students are left disconnected, their dreams of digital education dashed.

This is not an isolated story - it’s a systemic issue across many African countries.

Challenges and Impact

The Problem of Connectivity in Africa

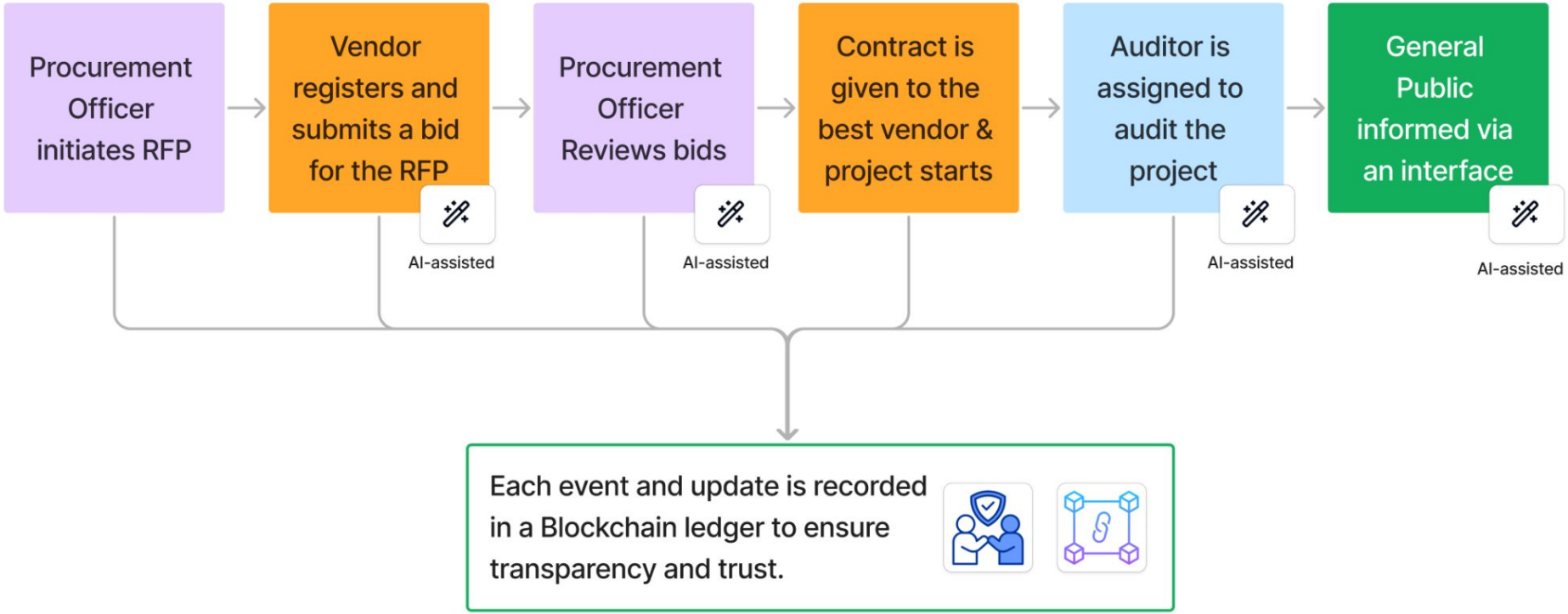
Challenges

- Inefficient procurement processes
- Billions lost to corruption annually
- Massive digital divide in education and healthcare
- Lack of transparency in infrastructure projects

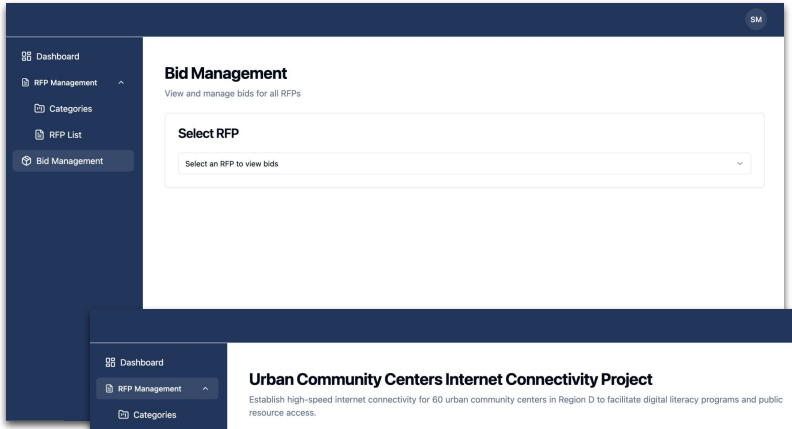
Impact

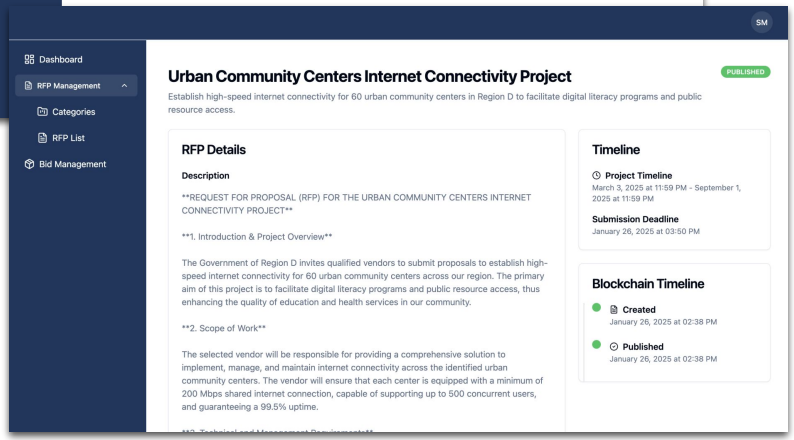
- Children unable to access online learning
- Health centers disconnected from digital tools
- Wasted public and private investments

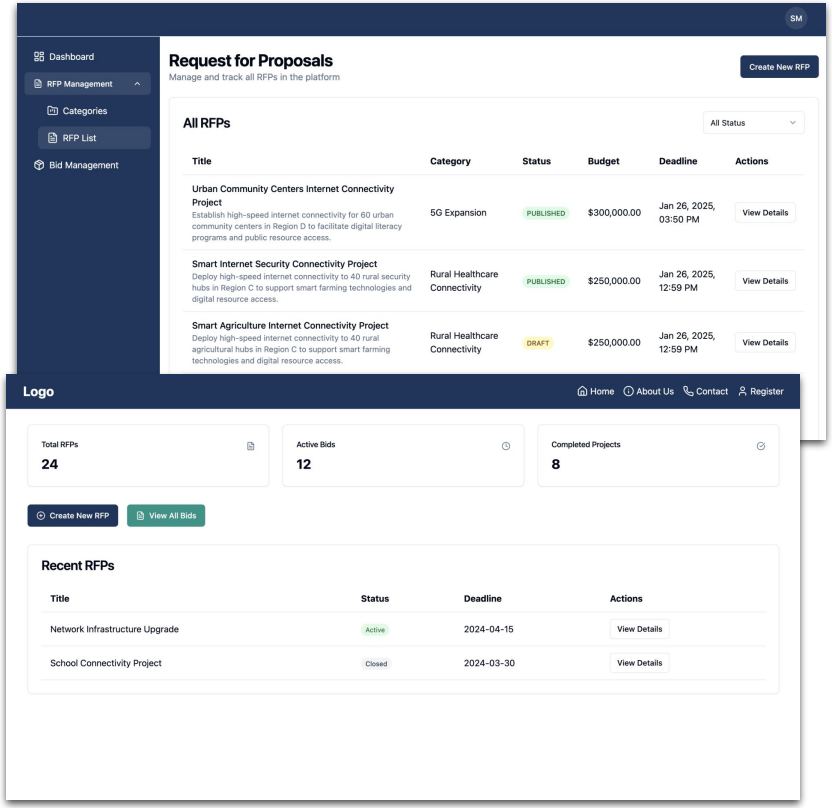
Solution Overview – Flow



Solution Overview – UI

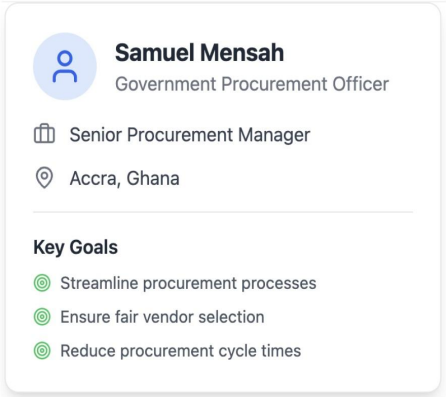






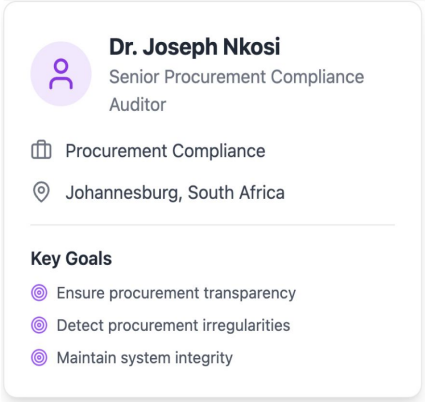
Solution Overview

The User Personas Benefiting from Our Solution

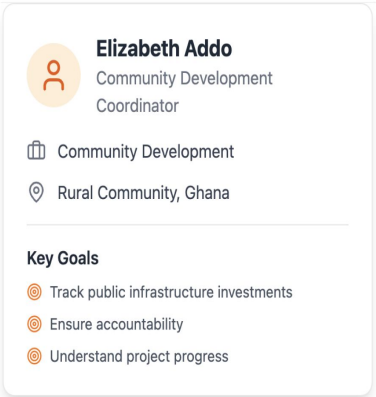


Streamlines procurement processes for greater efficiency

Secures government connectivity projects to drive digital transformation.



Ensures procurement transparency and integrity.



Tracks public infrastructure investments to improve community outcomes

Expected impact

Quantitative Improvements

- 40% reduction in procurement cycle times
- 60% increase in procurement transparency
- Potential billions saved in infrastructure investments

Qualitative Benefits

- Enhanced stakeholder trust
- Objective vendor selection
- Improved resource allocation
- Support for underserved regions

Market, Revenue and Competitors

Market Scope

- African nations spend an average of 17% of GDP on procurement of public goods, works, and service contracts. This suggests a significant market size.
- The digital health market size was valued at USD 3.8 billion in 2023 and is projected to grow at a CAGR of 23.4% from 2024 to 2030..

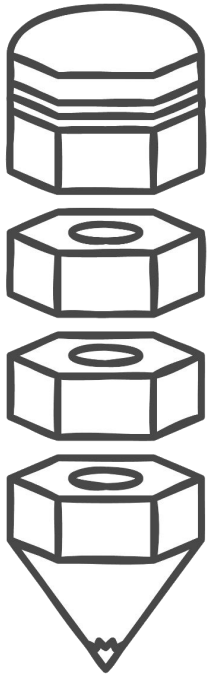
Revenue Streams

- Licensing fees for government agencies to use the AI-powered procurement platform.
- Consulting services for implementing and customizing the solution for specific contexts.
- Partnership revenue from technology providers interested in integrating with the platform.

Competitor Analysis

- Strengths: Deep public sector expertise, manual tender-based systems.
- Weaknesses: Lack AI-driven evaluation, predictive insights, and end-to-end transparency.

Technical architecture



Frontend

Built with modern frameworks for dynamic interfaces

Integration

Email and AI tools for notifications and analysis

Backend

RESTful API handling authentication and data processing

Security

Role-based access control and data validation

Technologies

AI/ML Frameworks:
Large Language Models: Leverages a large language model (LLM) for natural language processing, bid evaluation, and chatbot interactions..

Blockchain:
Ethereum Testnet: For creating a mock blockchain to log procurement activities.
OpenZeppelin: For smart contract templates.

Frontend and Dashboard:
React: For building a basic UI.

Backend:
Node.js with Express: For handling API requests and integrating the AI and blockchain components.

Database:
Postgresql: For storing bid submissions and evaluation results.

Deployment:
Use Docker to containerize the application for easy setup.

Video Presentation + Relevant Links

Our GitHub organisation & repositories:

- Link - UniSphere
  - Backend repository
  - Frontend repository (via Lovable)

Figma Canvas:

- Link

Live Demo of Core Functionalities

Unique Selling Points

- Addresses UN Sustainable Development Goals
- Scalable across multiple regions
- Reduces procurement cycle times
- Eliminates human bias
- Increases trust and transparency

Future Considerations

Advanced AI Integration

- And advanced AI Bid Evaluation Model
- Develop more sophisticated anomaly detection algorithms
- Implement deeper predictive analytics for project risk assessment

Expand Blockchain Transparency

- Create more granular tracking of procurement milestones
- Develop smart contract mechanisms for automatic compliance verification
- Implement cross-platform blockchain interoperability

Wider Ecosystem Development

- Scale solution across different African regions and sectors
- Build integrated training programs for government officials, NGOs and other stakeholders
- Ensure an end-to-end feedback loop

Thank you!

This solution was brought to you by a team of mission-driven individuals who want leverage technological advancements to bring connectivity, power of collaboration, and opportunities to all.

Team UniSphere

- **Amaizu Melody** (Team Lead + Blockchain + Full Stack Development)
- **Anu Ylänen** (UX, Product Management, Frontend Development)
- **Ajjunior Masongane** (AI Bid Evaluation Model, vision for the future)