Redefining Ghana's Financial Landscape: Creating CBDC based innovation with the e-Cedi Hackathon

e₵EDI HACKATHON
TAKING THE CEDI DIGITAL

BANK OF GHANA

EMTECH

Summary

In December 2023, EMTECH successfully delivered a CBDC Hackathon as a strategic pilot for the Bank of Ghana's e-Cedi project. Over a 12-week period, contestants used EMTECH's Beyond Cash™ platform (BYDC) to access accounts, wallets and API services to develop applications.

After receiving 88 applications, the Bank of Ghana ultimately selected 10 participants who were on boarded to a dedicated CBDC platform, and received Institutional Wallets and 1,000 BYDC-eCedi tokens from the central bank to prototype various solutions. They were then granted access to the EMTECH product to use pre-built BYDC-eCedi APIs which eased the technical integration as well as standardized how and who can compliantly create wallets for end-users or how to transact with the tokens. All transactions were performed using Hedera's token and public ledger services that used a ERC-20 token standard and delivered transparency in transactions with private user information.

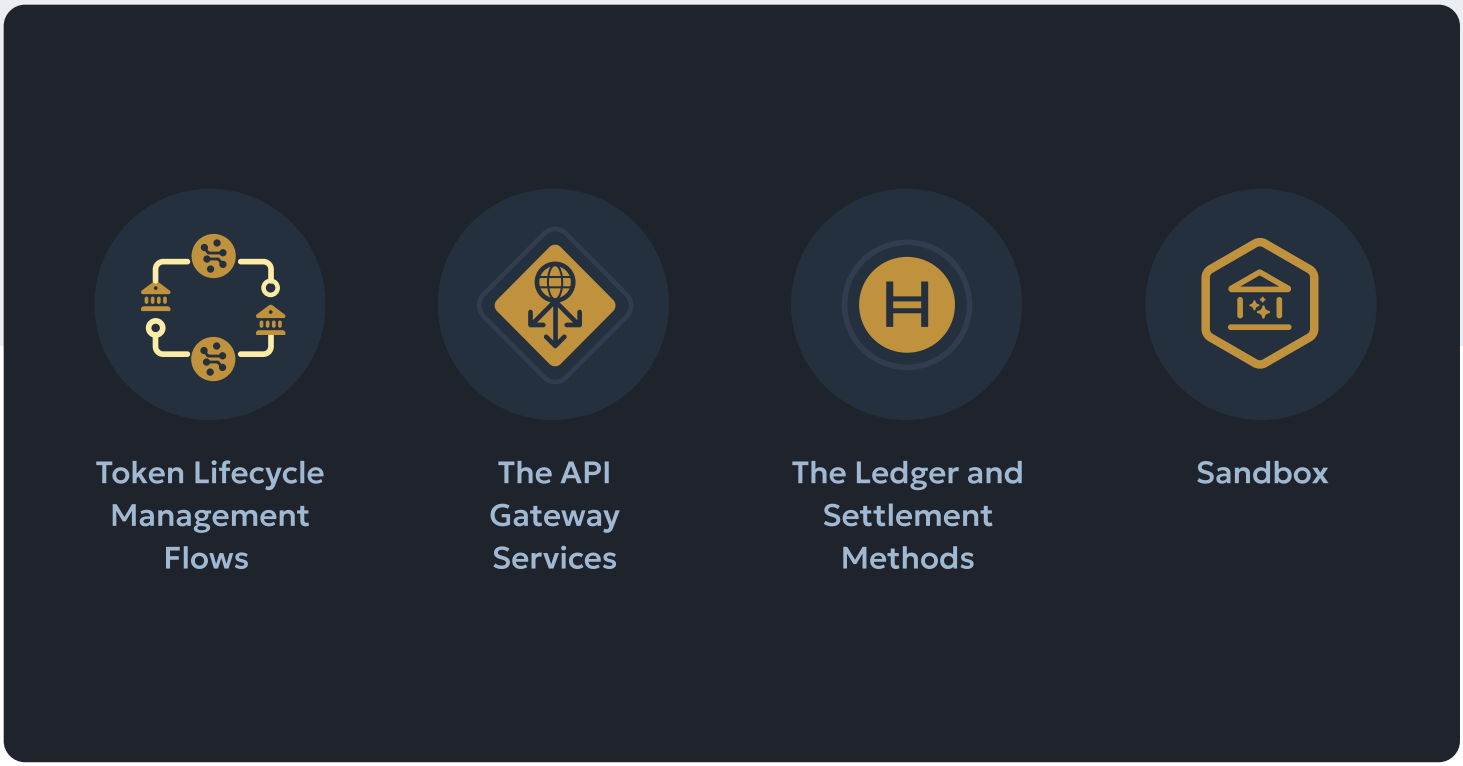
> A future e-Cedi's adoption can be accelerated by the innovations from banks, fintechs and actors in the ecosystem. The e-Cedi Hackathon provided a platform to develop use cases for financial inclusion in Ghana with our CBDC Hackathon Partner EMTECH.

Kwame Oppong
Director of FinTech and Innovation at Bank of Ghana

Technology: The EMTECH Stack

The EMTECH technical stack leverages Web3 components such as distributed ledger technology, smart contracts for tokenization. EMTECH's Beyond Cash runs on the public ledger called Hedera Hashgraph.

- The Token Lifecycle Management Platform
- The Ledger and Settlement Methods
- The API Gateway Services
- The Sandbox



The Business Challenge

To develop a Tokenized Cedi (e-Cedi) CBDC pilot to:

- Provide innovative financial services to all citizens in Ghana (including farmers, rural dwellers and laborers) substantially faster, while making these transactions more efficient and transparent.
- Enable financial service providers to be able to gain access to Ghana's unbanked population of citizens.
- Introduce digital financial service products to an ecosystem that has been hampered by infrastructure problems as a result of the inability to deliver financial services beyond network towers.
- Solicit creative ideas within the private sector of developers to help define CBDC use cases that are relevant for consumers while providing solutions to problems unique to the country of Ghana.

Financial Applications Developed

From 88 submissions, narrowed down to 10 finalists, the e-Cedi Hackathon developers contributed applications aimed at various sectors such as agriculture, government payments, business payments, taxation, securities, crowdfunding, interoperability, and credit scoring.

> “The e-Cedi Hackathon invitation for proposals targeted innovative ideas that leverage CBDC tokens and APIs to prototype solutions or develop tools to promote the use of e-Cedi across the economy and with diverse payment scenarios. We are grateful to EMTECH for the conceptualization, design, planning and implementation of the Hackathon to develop use cases.”

Dr. Ernest Addison,
the Governor of the Bank of Ghana

Results

- Delivered nearly instant, reliable hypothetical e-Cedi payments with low costs and high security.
- Developed CBDC hypothetical e-Cedi applications that enabled convenient, fast, and simple money transfers
- The applications enabled banking staff, consumers, regulators, to track end-to-end payments or transactions.
- Real-time metrics provided through reporting, made it easy for senders and receivers to track money transfers while the funds are in transit, providing transparency to both parties about the exact timing and amount.
- Ensured that hypothetical e-Cedi payments are tamper-proof and accurate, substantially reducing the time and costs associated with labor-intensive investigation of errors.
- Accelerated application development.
- Provided an application framework to enable The Bank of Ghana to deploy their CBDC safely and affordably as a digital cash infrastructure, not just as a software application.