

## Rise of hybrid systems

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Hybrid models are also emerging in trade finance. For instance, at Patasente, a platform developed by ANGELS, businesses can digitise invoices and access early payments through partner banks. While the system's core operations run on web platforms and mobile applications, suppliers without smartphones can still interact with the system through SMS notifications or basic phone interactions.

"The heavy lifting happens on the platform's backend," Bakka explains. "But the last-mile supplier may only need a basic phone."

Similar hybrid systems have been deployed elsewhere in emerging markets. In India, the Unified Payments Interface (UPI) allows users to conduct digital transactions across multiple financial institutions and devices, including feature phones, by relying on interoperable infrastructure and open application programming interfaces.

### The groundwork

Uganda has made strong progress under the National Payment Systems framework. The regulatory clarity provided by the Bank of Uganda has enabled fintech growth while safeguarding consumers.

Jabel emphasizes that accelerating this innovation requires expanding regulatory sandbox programmes, deployment of a national digital identity framework to support e-KYC and client authentication when transacting, broader e-KYC integrations, and clearer frameworks for embedded finance and hybrid delivery models.

To make rural adoption realistic, he suggests deeper partnerships. This is so as to enable telecoms to reduce USSD and data costs for financial inclusion services. Government to incentivize rural connectivity. And for solar and device providers to enable powered, affordable user, agent, and merchant devices.

"Financial inclusion is an ecosystem challenge. No single financial institution or fintech can solve it alone," Jabel adds.

For Bakka, the lesson for African fintech ecosystems lies in building shared digital platforms rather than isolated applications. "The power comes from platformisation and open APIs," he says. "Banks, telecoms and fintech companies need to operate on shared infrastructure."

Uganda's fintech future may therefore depend less on building the fastest apps and more on building the most adaptable infrastructure.

# What investors are missing in the offline fintech boom



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Uganda's financial technology sector is expanding rapidly. However, much of this growth is happening in a country where reliable internet access remains far from universal.

Across Africa, fintech has emerged as one of the fastest growing sectors in the digital economy. According to the African Fintech Report, the continent hosts more than 1,200 fintech companies, up from fewer than 450 in 2020. Investment has followed the momentum, with African fintech startups attracting more than US\$1.4 billion in venture funding in 2023 alone.

Uganda is part of this expansion. According to the Financial Sector Deepening Uganda (FSD Uganda) report, the country had about 184 fintech companies by October 2024, spanning digital payments, lending platforms, insurance services and financial management tools.

The sector created more than 10,000 jobs in 2022, with projections for further growth, and now contributes around 7 percent of Uganda's Gross Domestic Product.

Yet the country's fintech success has been built less on internet-driven banking and more on mobile money infrastructure. KPMG's State of the Fintech Industry Report indicates that Uganda's mobile money ecosystem has grown rapidly. The number of transactions increased from 532.5 million in 2022 to 612.8 million in 2024. By 2025, the country had about 34.6 million active mobile money users, already exceeding the 24 million formal bank accounts. Additionally, annual mobile money transactions have also surged, reaching over Shs253.7 trillion by 2024.

But the country's digital transformation carries a paradox.

### Connectivity gap

"In most mature fintech economies, innovations are built on the presumption of affordability and connectivity, an assumption that crumbles in Uganda's digital inclusion ecosystem," says George Bakka, the chief executive officer, ANGELS. As such, hybrid or offline first models are not just design preference but rather strategic imperatives.

In Uganda's context, while fintech platforms continue to multiply, internet connectivity remains limited. Uganda's internet penetration rate stands at approximately 34.4 percent of the population, far below Kenya's 57 percent and South Africa's 83 percent. Smartphone penetration is similarly uneven, particularly in rural areas where feature phones remain dominant and network coverage can fluctuate between 2G connectivity and complete signal loss.

These constraints limit the ability of fintech products designed for constant internet access to reach large segments of the population.

## Financial utility

"The market is not asking for a purely digital experience, it's asking for a reliable financial utility that works with the tools they have."

Mobile money and agent banking shops in Ntinda. Industry estimates show the number of mobile money and financial service agents increased from about 447,100 agents in 2022 to more than 741,400 by 2024. PHOTO/ISAAC KASAMANI

### Takeaways

- In Uganda's context, while fintech platforms continue to multiply, internet connectivity remains limited. Uganda's internet penetration rate stands at approximately 34.4 percent of the population, far below Kenya's 57 percent and South Africa's 83 percent.
- According to a KPMG State of FinTech report, Uganda attracted about \$6 million in fintech investment in 2024, compared with \$367 million in South Africa, \$301 million in Kenya and \$243 million in Nigeria.

"You have a massive population with feature phones or low-end smartphones and a reliance on USSD (Un structured Supplementary Service Data).

Yet many fintech products are built for smartphone apps with constant connectivity," says Bakka.

Richard Jabel, chief executive of the Agent Banking Company (ABC), highlights the challenge further, noting, "In much of rural Uganda, internet access is inconsistent, and smartphone penetration remains low. Designing fintech solutions that assume stable data access would exclude the majority of citizens."

Additionally, Bakka reinforcing the need for hybrid systems, illustrates the vulnerabilities of internet access, noting that the periodic internet shutdowns which occur in Uganda, have the potential to bring digital platforms to a halt. For companies operating digital financial systems, the impact can be immediate.

"If we project a weekly invoice processing volume of about \$200,000 [Shs736 billion], a week-long shutdown can put that entire volume at risk," he says.

These structural barriers are also reflected in investment patterns. Uganda's fintech ecosystem still attracts far less capital than some of Africa's larger technology hubs.

According to a KPMG State of FinTech report, Uganda attracted about \$6 million in fintech investment in 2024, compared with \$367 million in South Africa, \$301 million in Kenya and \$243 million in Nigeria.

This gap has shaped how local innovators design financial technology. "The market is not asking for a purely digital experience, it's asking for a reliable financial utility that works with the tools they have," says Bakka.

As such, rather than building complex app based ecosystems that require reliable internet access, many Ugandan fintech solutions focus on low cost technologies such as USSD services, SMS alerts and physical agent networks.

Agent networks in particular have expanded rapidly. Industry estimates show the number of mobile money and financial service agents increased from about 447,100 agents in 2022 to more than 741,400 by 2024. These agents function as the physical interface between many Ugandans and the country's digital financial system.

### Rise of hybrid systems

Offline-first or hybrid fintech systems are designed to anticipate connectivity disruptions. Transactions can be initiated and stored locally on a device or within intermediary infrastructure before being synchronised with central servers once connectivity returns.

"Our model is hybrid," explains Jabel. "It includes USSD for basic transactions on feature phones, SMS confirmations, a shared agent network for cash transactions, and apps and web portals for digitally enabled users."

"This blended approach has proven far more effective than an app-only strategy in bridging the rural divide," he adds.

Hybrid fintech models are also transforming sectors such as agriculture, trade finance, insurance, and small business lending.

One such platform is EzyAgric, a Ugandan agricultural technology company attempting to digitise key parts of the farming value chain.

"We are building an end-to-end digital agriculture ecosystem that helps farmers access trusted inputs, advisory services, finance, and markets all in one place," says William Luyinda, chief executive officer and Founder, EzyAgric.