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Scaling Fintech Operations Across Fragmented African Markets: Operational and Regulatory Strategies for Multi-Country Expansion

Abstract
Financial technology is now central to Africa's financial architecture. Mobile money, digital payments, digital banking, remittances, digital credit and embedded finance are expanding access to financial services, particularly in Sub-Saharan Africa where mobile money has driven account ownership.
However, cross-border expansion is constrained by institutional fragmentation. African countries differ in licensing, supervision, payment infrastructure, currencies, data protection, consumer protection and digital identity, making cross-border payments more complex and costly than domestic payments.
This paper examines operational and regulatory strategies for sustainable multi-country fintech expansion. It argues that regional scale cannot be achieved by replicating a domestic model. Instead, fintechs need a modular architecture that combines common technology, governance and risk capabilities with adaptable country-level regulatory and payment interfaces.
It covers regulatory intelligence, market sequencing, compliance-by-design, interoperability, data governance, partnerships, foreign-exchange management and the role of the Pan-African Payment and Settlement System. Sustainable expansion requires regulatory capability, operational resilience, interoperability and disciplined economic management.
Keywords: *fintech, Africa, financial inclusion, regulatory fragmentation, cross-border payments, PAPSS*

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I. Introduction

Financial technology has become an increasingly important component of Africa's financial-sector transformation. The growth of mobile money, digital banking, electronic payments, online lending, remittance platforms and embedded financial services has altered the mechanisms through which consumers and businesses interact with financial institutions. Rather than merely digitising existing banking processes, fintech is increasingly creating alternative channels of financial intermediation, particularly for customers who have historically faced geographical, affordability or accessibility barriers (AfDB, 2024).

The importance of this transformation is evident in financial inclusion trends across Sub-Saharan Africa. Account ownership in the region has increased substantially over the past decade, with mobile money playing a particularly important role in extending access to formal financial services (World Bank, 2025a). In 2024, approximately 40 percent of adults in Sub-Saharan Africa had a mobile-money account, compared with 27 percent in 2021 (World Bank, 2025b). Digital financial services are therefore seen as a significant mechanism for improving inclusion and economic resilience.

The expansion of digital finance is nevertheless uneven. Financial inclusion varies considerably across African economies, while differences in infrastructure, income, education, digital literacy, identification systems and regulatory environments influence adoption. The World Bank's Digital Economy for Africa programme consequently treats digital infrastructure, digital public platforms, digital financial services, digital businesses and digital skills as interconnected dimensions of development (World Bank, 2024).

These differences have major implications for fintechs pursuing international growth. A firm that succeeds in one African market may assume the same product can be transferred to neighbouring countries with limited modification. This assumption is problematic because financial services are embedded in national legal, monetary and institutional systems. A payment product interacts with licensing, settlement, foreign-exchange, consumer-protection and anti-money-laundering obligations, while a digital lender depends on credit-information systems and data-use rules.

Africa therefore represents both a major opportunity and a complex expansion environment. The strategic problem is not simply how to enter additional countries, but how to do so without proportionately reproducing technology, compliance and organisational infrastructure. This distinction is central to operational scalability, which requires a balance between standardisation and localisation. Recent work identifies limited interoperability and institutional differences as major constraints on efficient cross-border payments, while emphasising the need for an enabling, competitive and secure environment for digital payments in the region (BIS, 2026a; Ricci, 2025).

This paper examines the operational and regulatory architecture required for sustainable expansion and argues that successful regional fintechs will need technological modularity, regulatory intelligence, strong local partnerships and disciplined market sequencing.

II. Africa's Fintech Opportunity and Institutional Diversity

The commercial attractiveness of African fintech is closely associated with historically uneven financial infrastructure. Traditional banking systems have not provided equal access across population groups. Digital financial services have emerged as an alternative for payments, savings and credit. Mobile money is particularly significant, with Sub-Saharan Africa continuing to lead globally in adoption and contributing substantially to growth in account ownership (World Bank, 2025a).

Digital payments can also facilitate formalisation of transactions between businesses, suppliers and customers. However, the relationship between fintech and inclusion is not automatic. Access depends on affordable devices, reliable connectivity, digital literacy, appropriate identification, consumer trust and supportive regulatory institutions (World Bank, 2024).

The institutional context varies considerably between countries. Nigeria, Kenya, South Africa, Egypt, Ghana and Rwanda have developed distinctive ecosystems characterised by different combinations of banking institutions, payment infrastructures and regulatory arrangements. Country diagnostics therefore need to assess digital economies according to country-specific conditions rather than assuming a uniform continental environment (World Bank, 2024).

This diversity has direct implications for market entry. A fintech should evaluate prospective markets through four dimensions: customer demand, institutional readiness, regulatory feasibility and operational economics. Customer demand determines commercial opportunity. Institutional readiness determines whether the ecosystem can support the product. Regulatory feasibility determines whether activities can be legally undertaken. Operational economics determines sustainable returns. A large population with weak payment infrastructure may therefore be less viable than a smaller market with more compatible infrastructure. Market size should not be confused with market readiness.

III. The Standardisation-Localisation Dilemma

The fundamental organisational challenge for regional fintechs is the tension between standardisation and localisation. Standardisation creates economies of scale. Common software, cybersecurity systems, data architectures, risk-management procedures and corporate governance can be used across several markets, reducing duplication and improving oversight.

However, financial regulation remains predominantly jurisdictional. Countries impose different requirements concerning licensing, customer identification, capital, reporting, outsourcing, data protection and consumer protection. Even within regional economic blocs, harmonisation does not make requirements identical. The West African Economic and Monetary Union, for example, has been developing a more consolidated framework for fintech, but firms remain subject to authorisation and supervisory requirements under the regional architecture (IMF, 2025a).

Excessive localisation also creates problems. If each country develops its own software, compliance processes and risk systems, the organisation loses the benefits of regional scale. The solution is a modular architecture, or regional-core/local-edge model. The organisation maintains a common core including transaction processing, analytics, cybersecurity, fraud detection, enterprise risk management and product engineering, while creating configurable country-level modules for licensing, customer identification, reporting, payment connectivity, data handling and foreign exchange. This allows scale while accommodating national differences.

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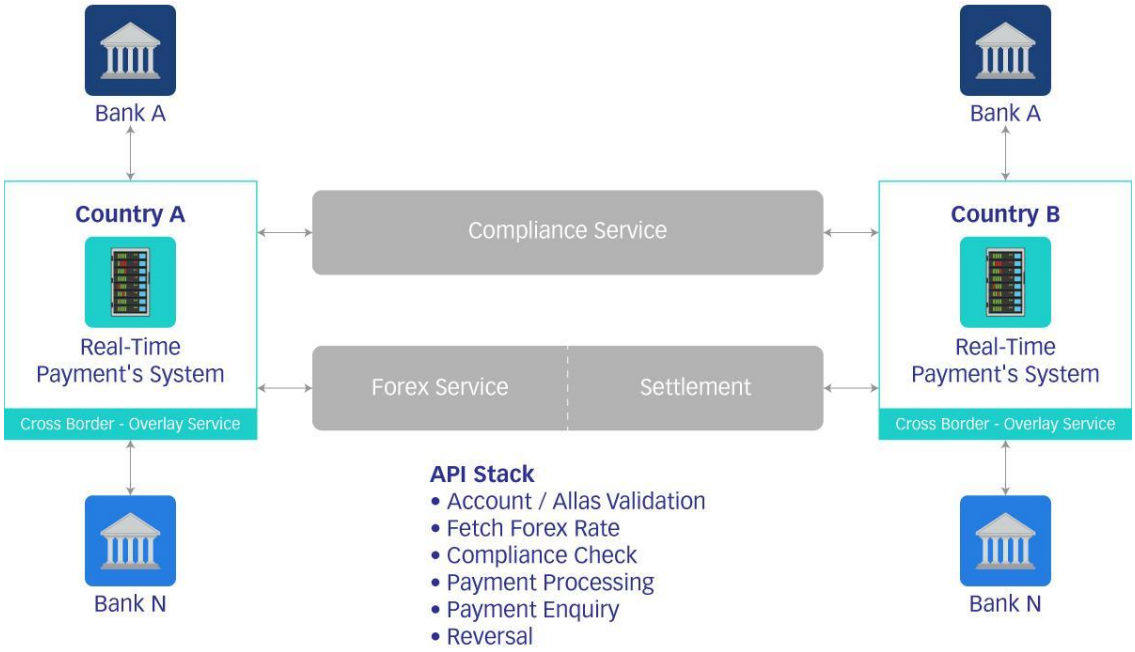


Figure 1. Regional-core/local-edge architecture for African fintech expansion.

Source: Author's conceptual framework.

The significance of this model is that regulatory diversity becomes a configuration problem rather than an entirely new technology-development problem.

The objective is not to make every market identical. It is to make differences manageable.

IV. Regulatory Fragmentation and Strategic Risk

Regulatory fragmentation constitutes one of the most important constraints on cross-border fintech expansion. Payment-service providers can encounter different requirements concerning licensing, ownership, capital, governance, consumer protection, data protection and financial-crime controls. These differences create both direct and indirect costs. Direct costs include licensing fees, legal advice, local staffing and compliance infrastructure. Indirect costs arise from delays in product deployment, restrictions on data flows, limitations on partnerships and the need to modify technological systems.

The Bank for International Settlements has emphasised that cross-border payment services are particularly affected by differences between national legal and regulatory frameworks. Such differences can increase compliance burdens and create uncertainty across the payment chain (Bank for International Settlements, 2025). This makes regulation a strategic issue rather than a purely legal function.

For example, a fintech entering a new country must determine whether its activities constitute payment services, electronic-money issuance, lending, remittance, deposit-taking or another regulated activity. The answer can influence its licensing requirements, partnership model and organisational structure. A company that fails to establish the correct regulatory classification before entering the market may later face expensive restructuring, as regulatory misclassification is a common source of market-entry failure (Arner, Barberis, & Buckley, 2017).

The appropriate response is a formal regulatory-entry assessment. Before commercial launch, management should establish the relevant regulators, required licences, permissible activities, ownership restrictions, local-presence requirements, reporting obligations, consumer-protection requirements and applicable financial-crime controls. Regulatory assessment should then continue after launch because financial regulation is dynamic and subject to frequent change (World Bank, 2024).

V. Regulatory Intelligence as an Organisational Capability

Regulatory compliance is essentially retrospective: it determines whether an organisation complies with rules that already exist. Regulatory intelligence is prospective. It monitors legislative proposals, supervisory statements, consultations, enforcement developments and regulatory trends so that management can anticipate how the operating environment may change (Arner et al., 2020).

This distinction becomes increasingly important as the number of jurisdictions increases. A fintech operating in two countries can perhaps manage regulatory information through a small legal team. A fintech operating across ten or fifteen markets requires a more systematic approach involving regulatory databases,

country risk registers, legal monitoring and structured communication between regulatory, product, technology and executive teams (Zetzsche et al., 2020).

Regulatory intelligence should answer four questions. First, what rules currently apply? Second, what regulatory developments are emerging? Third, how could those developments affect the business model? Fourth, what technological or organisational changes should be made in advance?

The value of this capability extends beyond compliance. Regulatory intelligence can influence the sequence in which countries are entered, the design of products, the selection of local partners and the allocation of investment. It therefore becomes a component of corporate strategy and a source of competitive advantage in fragmented markets.

VI. Compliance by Design

A major opportunity for fintech companies lies in embedding regulatory compliance directly into technological systems. The conventional approach may involve transaction processing followed by separate compliance reviews. A compliance-by-design architecture instead incorporates regulatory controls within the transaction lifecycle (Butler & O'Brien, 2020).

Such systems can identify the customer's jurisdiction, apply relevant risk parameters, conduct sanctions screening, verify transaction requirements and generate appropriate compliance records before a transaction proceeds. This reduces manual intervention and improves consistency.

Project Mandala provides a useful international example. The Bank for International Settlements Innovation Hub developed a proof-of-concept system in which jurisdiction-specific regulatory requirements could be encoded into a common protocol for cross-border transactions. The architecture included messaging, a rules engine and a proof engine designed to demonstrate that relevant compliance checks had been completed before transaction initiation (Bank for International Settlements, 2024).

The importance of Mandala to African fintech strategy is conceptual rather than geographical. The project demonstrates how regulatory requirements can potentially be converted into programmable controls. This principle can be adapted to African fintech architecture. Instead of developing completely different software for every country, a company can maintain a common technological platform and introduce country-specific rules engines. The distinction is important: replication requires rebuilding, modularity requires configuration. The second approach has greater potential for operational efficiency, although its effectiveness depends on accurate legal interpretation and continuous regulatory monitoring.

VII. Market Sequencing and Controlled Expansion

The decision to enter a new market should be treated as an investment decision rather than simply a geographic expansion decision. Rapid expansion can expose weaknesses in fraud management, treasury operations, customer support, compliance systems and technology infrastructure. A company that has not developed reliable processes domestically may find those weaknesses magnified when operations are duplicated across multiple jurisdictions (David-West et al., 2022).

Market sequencing therefore provides an important risk-management mechanism. The first expansion market should ideally allow the fintech to test its regional architecture without exposing the organisation to excessive complexity. Regulatory compatibility, payment infrastructure, customer demand, partnership opportunities and foreign-exchange conditions should all form part of the assessment. The initial market can serve as an organisational learning environment. Lessons from licensing, integration, customer acquisition, fraud management and regulatory engagement should be documented and incorporated into a formal market-entry playbook. Subsequent expansion can then become progressively more standardised.

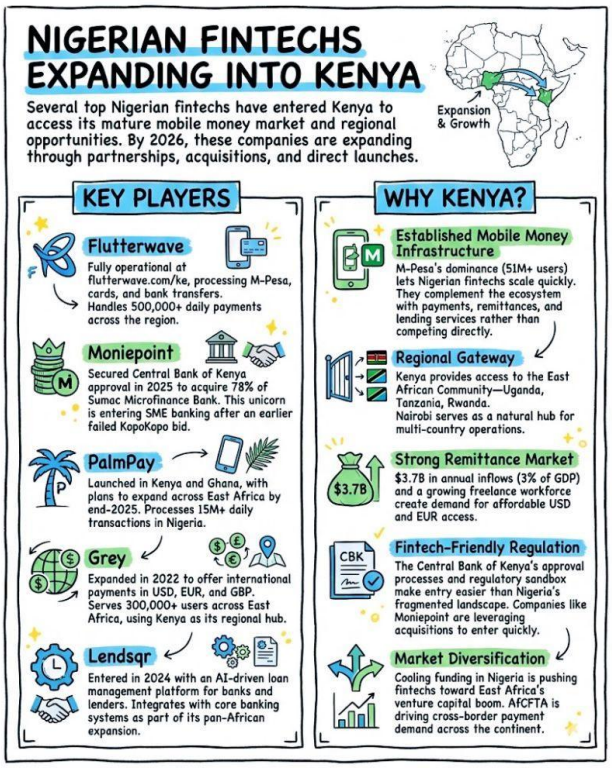


Figure 2. Sequential model of African fintech market expansion.

Source: Author's conceptual framework.

This approach also introduces the concept of **sequencing risk**. Entering markets simultaneously may increase geographic coverage, but it can also increase the number of unknown variables confronting management at the same time.

Sequential expansion converts some of those unknowns into organisational knowledge.

VIII. Payment Infrastructure and Interoperability

Payment infrastructure represents another major determinant of fintech scalability.

Cross-border payments remain more complex than domestic transactions because they often involve multiple institutions, currencies, regulatory systems and payment infrastructures. The BIS identifies limited interoperability and institutional differences as significant structural constraints affecting cross-border payment efficiency (BIS, 2026a). (Bank for International Settlements)

The problem is especially relevant to Africa because payment ecosystems have historically developed around national and regional systems.

A fintech entering a new market may therefore need to establish connections with banks, switches, mobile-money operators or other payment-service providers. If these connections are deeply embedded in the core technology, each new country can require substantial redevelopment.

A modular integration layer provides an alternative.

Application programming interfaces, common messaging standards and interoperable payment connections can allow the core platform to interact with different payment systems without fundamentally changing the underlying architecture.

The IMF's regional assessment of digital payments emphasises the importance of interoperability, secure infrastructure, competition and private-sector participation in creating effective digital payment ecosystems in Sub-Saharan Africa (Ricci, 2025). (IMF)

The strategic implication is clear: interoperability should be considered part of the business model.

It is not merely an engineering concern.

IX. PAPSS and Continental Payment Integration

The Pan-African Payment and Settlement System represents an important development in the architecture of intra-African payments.

PAPSS was developed by Afreximbank in collaboration with the African Union and the AfCFTA Secretariat to facilitate cross-border payments within Africa. Its model is intended to enable participating financial institutions

to process transactions across participating markets while reducing some of the dependence on traditional third-country settlement arrangements (PAPSS, 2026a).

The system's development has continued through connections with financial institutions across the continent. For example, KCB Group and Bank of Kigali integrated PAPSS into their operations in 2025, illustrating the expansion of the infrastructure beyond its initial institutional base (PAPSS, 2025).

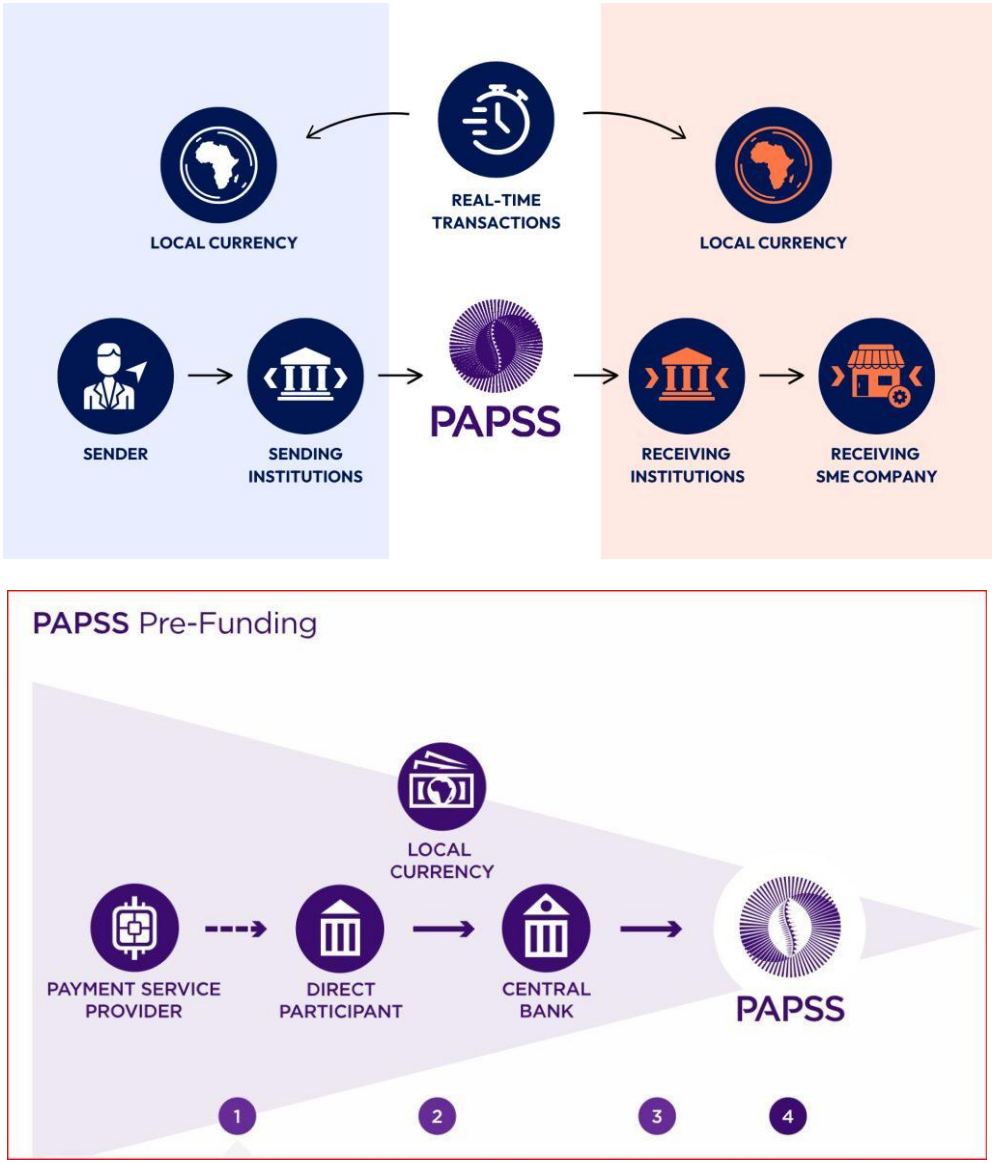


Figure 3. Conceptual PAPSS cross-border payment flow.

Source: Author's conceptual representation based on PAPSS infrastructure.

PAPSS is strategically important because cross-border payment cost and complexity affect regional business models. Historically, many African cross-border payments relied on correspondent banking routed through external currencies, increasing cost and delay. PAPSS provides centralized clearing and settlement in local currencies across participating central banks and institutions. However, it does not eliminate all barriers. Fintechs still need to address licensing, customer due diligence, sanctions screening, anti-money laundering, consumer protection and liquidity requirements (PAPSS, 2025). Regional infrastructure reduces payment friction but does not remove national regulatory responsibilities. Firms should therefore build interoperable architectures that connect to PAPSS, local switches and bank rails via APIs, while retaining configurable compliance modules. The value of PAPSS lies in separating infrastructure interoperability from regulatory localization, allowing scale without sacrificing compliance (Bank for International Settlements, 2026).

X. AfCFTA and the Expansion of Digital Financial Services

AfCFTA provides a framework for intra-African trade and economic cooperation. As trade grows, demand for digital payments, collections, settlement, treasury and financial management services will increase. This creates opportunities beyond consumer fintech, including B2B payments, merchant acquiring, trade finance, invoicing, supplier payments and embedded finance (AfDB, 2024). SMEs trading across borders will need low-cost collection, payout and reconciliation. PAPSS is positioned as the settlement layer for AfCFTA, enabling local currency transactions (PAPSS, 2025). However, economic integration should not be equated with financial harmonisation. Domestic financial regulation, oversight and consumer protection will remain diverse. Fintechs must assume regulatory diversity will persist even as payment integration deepens and design systems that function across differences.

XI. Data Governance and Digital Identity

Data supports onboarding, KYC, fraud detection, credit assessment and monitoring, but creates regulatory obligations. African digital transformation strategies emphasize digital identity, data protection and cybersecurity as interconnected components (World Bank, 2024). Multi-country fintechs must distinguish enterprise-wide capabilities from jurisdiction-specific requirements, including data localization, transfer restrictions, consent and retention rules. Governance must clarify what is collected, why, where it is stored, who can access it and when it can be transferred. Identity systems also vary across countries. A regional fintech needs an architecture with adapters that can connect to different national ID systems without compromising record integrity. The goal is not a single identity system, but interoperable mechanisms that work with diverse arrangements while maintaining a single view of risk.

12. Cybersecurity and Operational Resilience

Expansion increases the impact of disruption. A breach or outage can affect multiple jurisdictions sharing common infrastructure. Cybersecurity must therefore be enterprise-wide, with common standards for access management, encryption, vulnerability testing, monitoring and incident response, aligned to international frameworks but adapted to local regulations. Resilience must also cover non-cyber events such as payment-system outages, telecom disruptions, partner failures and foreign-exchange shortages (Bank for International Settlements, 2025). Scalability should be measured not only by speed of market entry but by reliability during disruption. This requires recovery objectives, backup providers, liquidity buffers and regular scenario and penetration testing across the regional stack.

13. Strategic Partnerships and Local Market Knowledge

Partnerships with banks, mobile network operators, switches and verification providers can provide settlement infrastructure, distribution and regulatory knowledge that would take years to build internally (David-West et al., 2022). However, they introduce operational, compliance and concentration risks, especially if a partner becomes a single point of failure. Due diligence, service-level agreements, exit plans and ongoing monitoring are essential. Partnerships should be selected by function: settlement, connectivity, distribution or data capabilities. This allows the fintech to decide which capabilities remain core and which can be acquired for speed. The strongest model creates complementary capabilities with manageable dependence, not the largest number of partners.

14. Currency and Treasury Management

Operating in multiple currencies creates foreign-exchange risk and liquidity needs. A fintech may earn in local currencies but incur technology and supplier costs in hard currencies. Treasury must be integrated into expansion planning from the start, covering exposure, net open positions, settlement timing, liquidity buffers, conversion costs, pre-funding and repatriation controls (Bank for International Settlements, 2026). PAPSS reduces some friction through local currency settlement but does not eliminate liquidity management. Technology improvements must be accompanied by appropriate settlement arrangements to realise efficiency gains. Without real-time visibility of balances across countries and hedging policies, firms risk failed transactions or trapped liquidity as volumes grow

15. Organisational Architecture for Regional Scale

A multi-country fintech must balance central oversight with local responsiveness. Highly centralised structures generate consistency but respond slowly to regulatory changes. Excessive decentralisation duplicates systems and weakens control. A hybrid model is practical. The regional centre retains core technology, cybersecurity, enterprise risk, data architecture and group strategy, enforcing non-negotiable standards. Country operations focus on regulatory engagement, local compliance, customer operations and partnerships. The critical issue is decision rights: which decisions are centralised, decentralised or jointly approved. For example, core

ledger changes may be centralised, while pricing may be decentralised within guardrails. Clear boundaries reduce conflict and prevent inconsistent practices across markets.

16. Unit Economics and Sustainable Expansion

Rapid customer acquisition does not equal sustainable growth. High acquisition costs, fraud, compliance, processing fees and FX costs can make a high-volume business fragile. Market-level unit economics should be incorporated from the pilot stage, including acquisition cost, activation, lifetime value, frequency, margins, fraud losses and regulatory expenses (David-West et al., 2022). The relevant question is not whether a country generates revenue, but whether it generates sustainable contribution after full service costs. Entry decisions should have defined financial thresholds. A market should move from pilot to expansion only with evidence of sustainable contribution. Discipline in pausing unprofitable markets is as important as entering new ones.

17. Building a Replicable Expansion Playbook

Successful entry should generate institutional knowledge. Experience from licensing, integration, partnership negotiation, onboarding and fraud management should be documented in a playbook containing regulatory checklists, integration requirements, partner criteria, operational controls and financial thresholds. Its purpose is not to make markets identical but to reduce reinvention. Instead of starting from zero, each new country team starts from a tested baseline and adapts. Over time, expansion should shift from exploratory activity to structured execution with stages: scoping, regulatory assessment, partnership development, integration, pilot and scale. This creates competitive advantage, as the firm can enter with fewer delays and lower costs (Zetzsche et al., 2020)

18. Emerging Regional Regulatory Cooperation

An important development is emerging regulatory cooperation, including passporting. In March 2026, the National Bank of Rwanda and Central Bank of Kenya formalised a framework allowing qualifying payment-service providers licensed in one jurisdiction to operate in another through recognition of home-country authorisation. This followed an earlier arrangement involving Rwanda and Ghana (Bank for International Settlements, 2026). Such developments may reduce duplicative licensing and accelerate launch. However, passporting is not complete harmonisation. It depends on supervisory cooperation, information sharing and eligibility conditions such as governance maturity. Host regulators retain conduct powers. Nevertheless, it shows African regulators exploring mechanisms where regional integration coexists with domestic supervision, potentially lowering fixed costs of expansion.

19. A Strategic Framework for Multi-Country Fintech Expansion

Sustainable expansion rests on eight mutually reinforcing capabilities. First, regulatory intelligence to monitor obligations and emerging developments (Arner et al., 2020). Second, modular technology with country-specific rules engines. Third, payment interoperability with banks, switches and PAPSS. Fourth, compliance by design embedded in transaction processes (Bank for International Settlements, 2024). Fifth, market sequencing based on readiness, not ambition. Sixth, partnership management with appropriate risk controls. Seventh, operational resilience covering cybersecurity and continuity (Bank for International Settlements, 2025). Eighth, financial discipline evaluating revenue against acquisition, processing, compliance and fraud costs. These capabilities are interdependent and should be treated as an integrated system rather than separate market projects.

XII. Conclusion

The expansion of fintech across Africa presents both significant opportunity and substantial institutional complexity. Digital financial services have already contributed to wider financial access, particularly through mobile money and digital payments, while emerging payment infrastructure is creating new possibilities for regional transactions (World Bank, 2025a; AfDB, 2024).

At the same time, African financial markets remain differentiated by regulatory frameworks, currencies, payment infrastructures, data regimes, institutional capacities and levels of digital development (World Bank, 2024). These differences make conventional replication strategies increasingly inefficient, as each market requires distinct licensing, compliance and partnership considerations.

The central requirement for sustainable expansion is therefore an architecture that combines common capabilities with controlled localisation. A regional fintech should maintain a common technological, cybersecurity, governance and risk-management foundation while allowing country-level modules to respond to national regulatory and commercial requirements. Such modularity can reduce duplication while preserving the flexibility required for lawful operation.

Regulatory intelligence is equally significant. Financial regulation should not be treated as a static compliance requirement but as an evolving component of strategic planning. The emergence of regional passporting arrangements, such as the March 2026 framework between Rwanda and Kenya, demonstrates that regulatory cooperation may progressively reduce some barriers, although country-specific supervisory responsibilities remain important (Bank for International Settlements, 2026).

Payment interoperability represents another strategic frontier. PAPSS and regional payment-system interlinkages indicate that African payment systems are becoming more connected (PAPSS, 2025). Yet infrastructure alone cannot resolve every friction, as differences in legal frameworks and compliance requirements persist (Bank for International Settlements, 2025).

The strategic implication is that fintechs should build for interoperability rather than assume fragmentation will disappear.

Ultimately, sustainable expansion is an organisational challenge as much as a technological one. Scale should not be measured merely by the number of countries entered or customers acquired, but by the capacity to reproduce reliable, compliant and economically sustainable operations across different institutional environments.

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