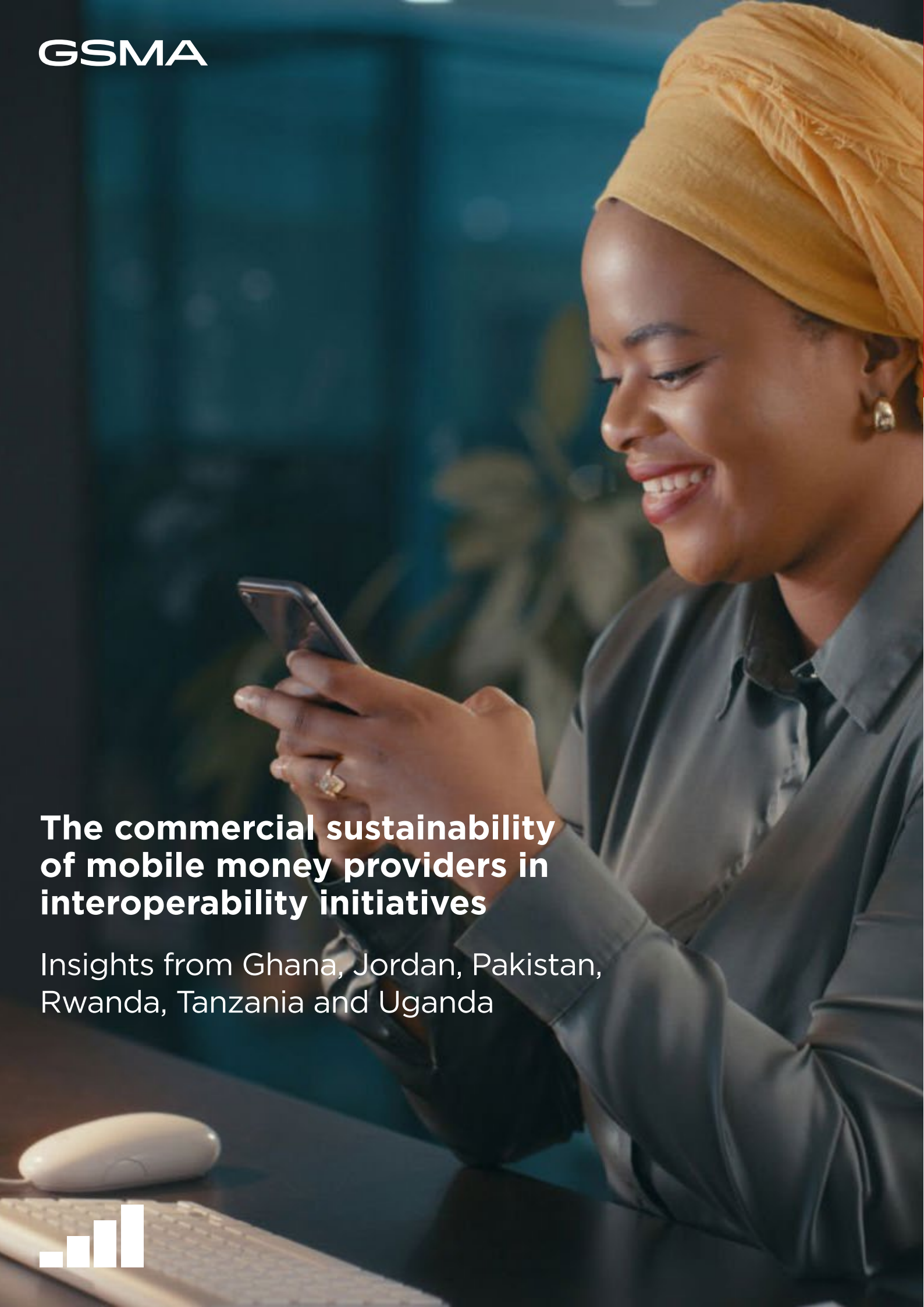
GSMA



The commercial sustainability of mobile money providers in interoperability initiatives

Insights from Ghana, Jordan, Pakistan, Rwanda, Tanzania and Uganda

GSMA

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BILL & MELINDA GATES foundation

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Author

Christopher Lowe

Contributors

Achille Tefong Vaumi
Bart-Jan Pors
Carelle Djiomou
Daria Visconti
Latifa Nanadoum
Marouane Znagui
Mathilde Royer
Mikael Naciri
Olivier Darondel
Trésor Ngassa

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Executive summary



Rising interoperable transactions are driving the mobile money industry, with mobile money providers increasingly being connected to an average of 18 local banks. Bank-to-mobile interoperable transactions were among the fastest-growing mobile money use cases in 2022, increasing 49% year on year; mobile-to-bank transactions rose by 53%.[1]

The widespread uptake and use of mobile money has led to integration with a variety of financial services providers. In this context, account-to-account interoperability gives mobile money customers the ability to make a transfer between two accounts held at different mobile money providers or between a mobile money provider and a bank. However, mobile money interoperability has been implemented differently across markets. Many solutions, such as bilateral connections or hub deployments, are in their infancy.

Due to the growth of interoperable transactions and differing interoperability models, the GSMA carried out research to highlight the commercial benefits to mobile money providers engaging in interoperability initiatives. This report presents findings from in-country primary research with mobile money providers, fintechs, central and commercial banks, national switches and banking associations. It includes recommendations for the commercial sustainability of mobile money providers in differing interoperability initiatives in Ghana, Jordan, Pakistan, Rwanda, Tanzania and Uganda (Figure 1).

This report is intended for mobile money providers, central banks, national switches and interoperability initiative stakeholders**. It is a counterpart to an interactive tool that aids mobile money provider discussions with interoperability hubs. This tool allows them to calculate their costs and revenue streams associated with interoperability initiatives**.[2]

1 GSMA Mobile Money Estimates and Forecasts.
2 GSMA. (2024). GSMA mobile money provider interoperability cost and revenue modelling tool.

Figure 1

Key findings and recommendations for the commercial sustainability of mobile money providers in interoperability initiatives in Ghana, Jordan, Pakistan, Rwanda, Tanzania and Uganda

Source: GSMA in-country key informant interviews in Ghana, Jordan, Pakistan, Rwanda, Tanzania and Uganda, research and analysis.

Interoperability models and market trends

Market trends

Research into various interoperability models reveals **a shift toward central bank-operated hubs.**

Costs and revenue

These hubs absorb some operational costs **while mobile money providers contribute via one-off, recurring, and per-transaction fees.**

Profitability

The profitability of mobile money providers using interoperability is less to do about the model itself and more **related to the market position of those providers at the time when interoperability was introduced to their market(s).**

Commercial viability and strategic implications

Strategic pricing

To **allow mobile money providers to cover their costs and innovate** without eroding their customers' loyalty, hub operators need to set a reasonable pricing structure, especially in comparison to prices set for banks.

Operational overlap

Interoperability tends to use existing mobile money infrastructure, allowing some costs to be efficiently absorbed into the broader operations of mobile money providers, impacting **the true cost of interoperability**.

Beyond revenue

In mature markets, **interoperability is used by mobile money providers as a strategic tool for expansion and partnership** rather than as a direct source of revenue.

Recommendations for sustainable interoperability

Governance models

This study recommends a shared governance model that elevates the voice of mobile money providers in decision making for interoperability hubs. This is likely to help all ecosystem stakeholders by ensuring pricing is sympathetic to all, particularly mobile money providers.

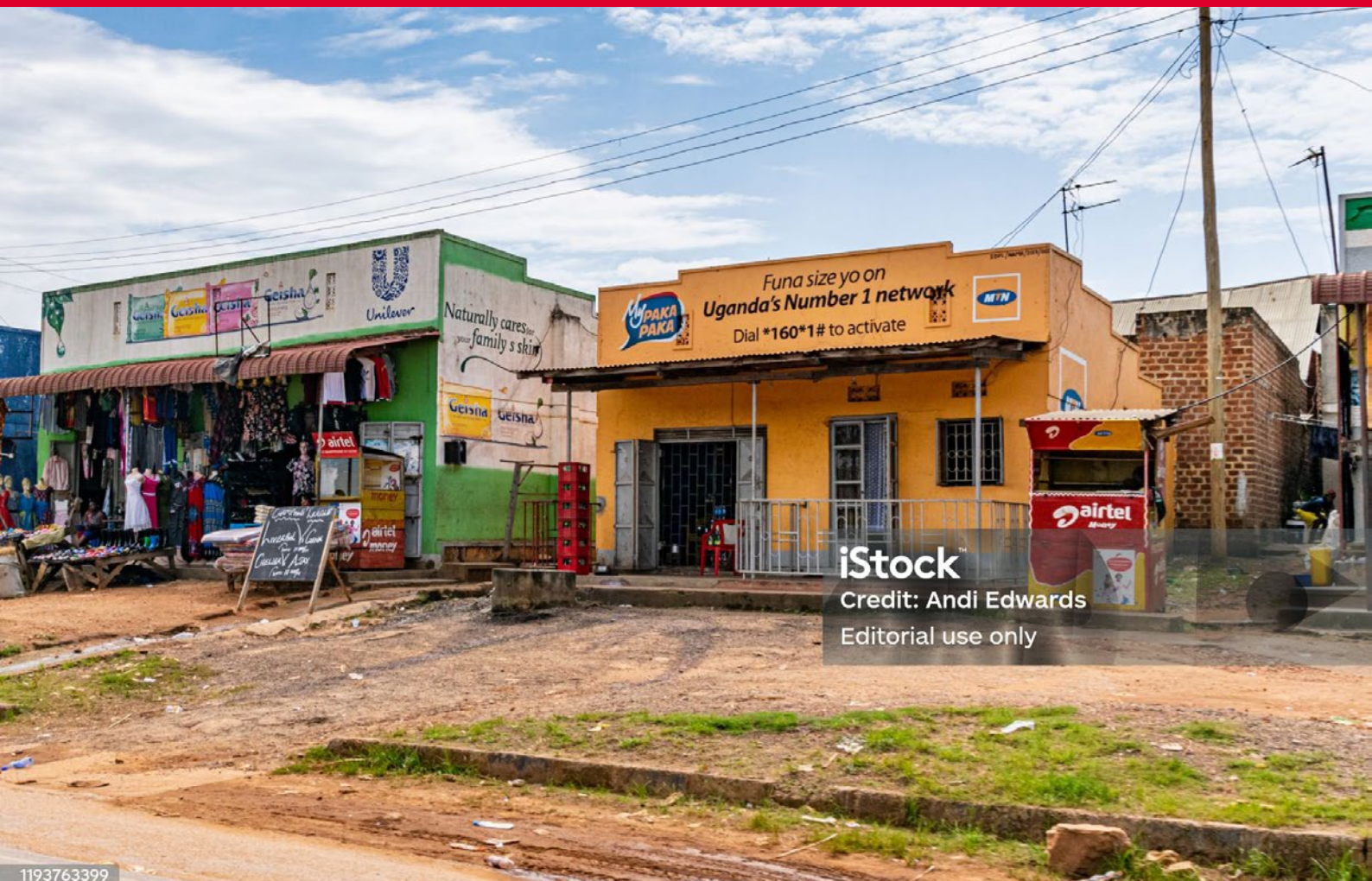
Stakeholder balance

This study advocates for equitable interchange models and collaborative approaches to **balance the interests of mobile money providers and banks.**

Looking ahead

This study recommends mobile money providers and regulators collaborate continuously to define a commercially sustainable interoperability model aligned with increasing and deepening **financial inclusion.**

Introduction



Access to mobile money is critical for the financial inclusion of unbanked across low- and middle-income countries (LMICs). It can be a key enabler in reducing poverty and improving prosperity, as well as increasing resilience against negative economic and climate-related shocks.

Across the world, mobile money services are growing. While it took the industry 17 years to reach the first 800 million customers, it took only 5 years to reach the next 800 million. Of those accounts, 400 million were added during the COVID-19 pandemic. As of 2023, there are 1.6 billion registered mobile money accounts.[3]

The GSMA's research highlights that interoperable transactions are driving the mobile money industry. Bank-to-mobile interoperable transactions were among the fastest-growing mobile money use cases in 2022, increasing 49% year on year, while mobile-to-bank transactions rose by 53%.[4]

Across LMICs, there are different models of mobile money interoperability with varying levels of maturity. Feedback from across the industry suggests that the terms and conditions of participation in interoperability initiatives are not always favourable to mobile money providers. Providers sometimes cite high costs and a reduced ability to drive revenue from interoperable transactions and operations[5]. While interoperability plays an important role in the commercial sustainability of mobile money providers, there is a knowledge gap regarding ways to achieve this.

As a consequence, the GSMA carried out research to understand the interoperability landscape and the commercial benefits and challenges faced by mobile money providers. The research focused on mobile money providers operating in Ghana, Jordan, Pakistan, Rwanda, Tanzania and Uganda, as well as other fintechs, central and commercial banks, national switches and banking associations.

These countries were selected because of their relative progress towards successful mobile money interoperability, as well as differences in interoperability model and maturity, mobile money ecosystem and maturity and geographic location.

This report is intended for mobile money providers, central banks, national switches and other interoperability stakeholders. It focuses on mobile money providers and their interactions with other interoperable financial ecosystem stakeholders, and includes the following information:

- Evolving models of mobile money interoperability
- Interoperability-related revenues and costs to mobile money providers
- Potential interoperability revenue streams for mobile money providers
- Interoperability decision-making for mobile money provider commercial viability
- Case studies on the commercial sustainability of mobile money providers in interoperability initiatives in Ghana, Jordan and Tanzania

This business-to-business (B2B) research provides an understanding of the interoperability landscape and commercial sustainability of mobile money providers in interoperability initiatives. This is expected to equip stakeholders with the knowledge and ability to enhance conditions for commercial sustainability of all stakeholders in financial service interoperability initiatives, particularly mobile money providers. Overall, this report is intended to enable stakeholders to improve customer adoption, regular and diverse use of their mobile money services, and improve financial inclusion in the process.

3 GSMA Mobile Money Estimates and Forecasts.
4 Ibid.
5 GSMA research and market engagement.

Key findings



Evolving models of mobile money interoperability

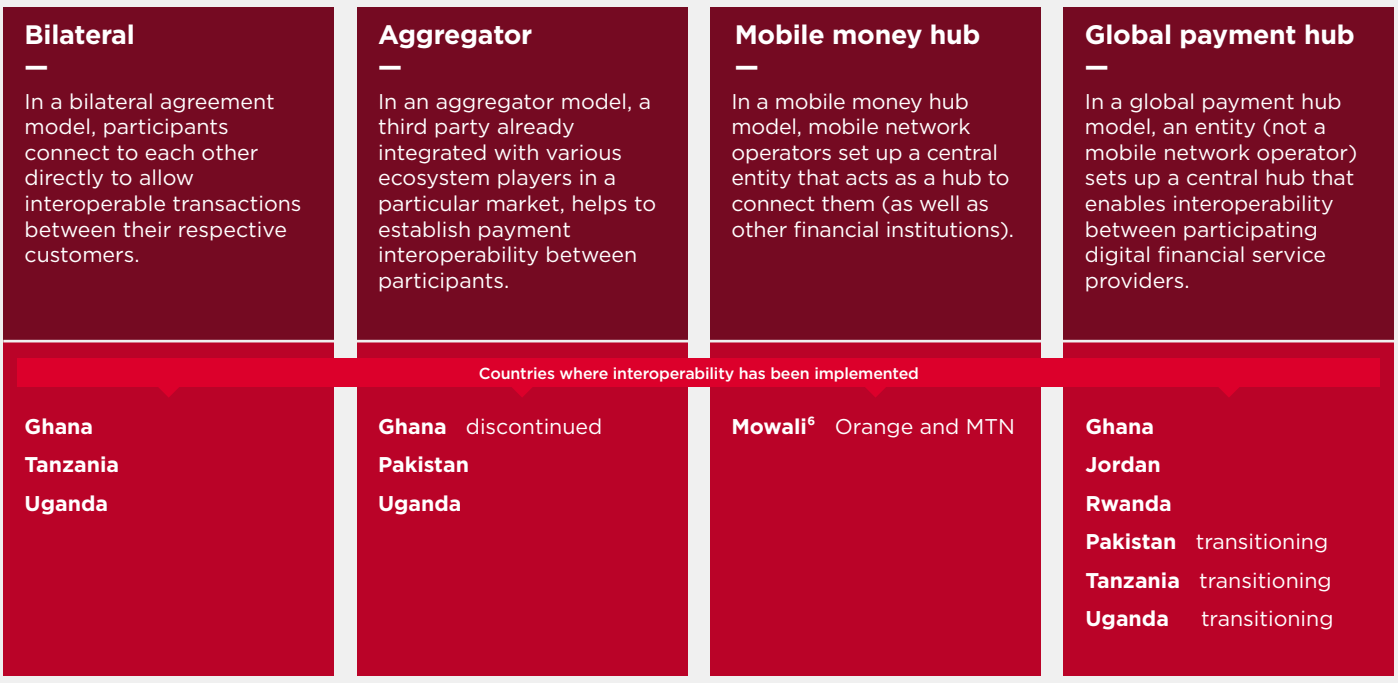
Interoperability has transformed financial inclusion, connecting separate financial ecosystems, such as mobile money, to fintechs and commercial banks. In Ghana, Jordan, Pakistan, Rwanda, Tanzania and Uganda, our research shows a trend (aligning with the same global trend) towards the implementation and use of central bank-operated hubs, which streamline transactions across different networks (Figure 2).

While Ghana, Pakistan, Tanzania and Uganda initially set up bilateral agreements or implemented aggregator models, there is a more recent transition toward a global payment hub model. This is largely driven by the regulatory decisions of central banks that oversee such payment systems.

Figure 2

Evolving models of mobile money interoperability

Source: 2023 GSMA in-country key informant interviews in Ghana, Jordan, Pakistan, Rwanda, Tanzania and Uganda and desk research.



6 Note: Mowali was a joint venture established in 2018 between Orange Group and MTN Group enabling interoperable payments between participating financial service providers.

Interoperability revenue and cost

Central banks face operational, maintenance, and upgrade costs in running interoperability hubs. To meet these costs they collect fees from hub participants, including mobile money providers (Figure 3). Providers contribute to interoperability hub costs through one-time, recurring, and per-transaction fees, with some also paying interchange fees:[7]

One-time costs

— Initial capital expenditure for system upgrades, compliance and setup fees for integration with the hub.

— One-time fees to access the hub.

Recurring costs

— Annual or monthly fees for continued access to the hub.

— Operational expenses related to maintaining interoperability.

Transaction-based costs

— Per-transaction fees for processing payments through the hub.

— Interchange fees paid to other stakeholders for cross-network transactions.

Mobile money providers can also benefit from hubs, receiving revenue from client surcharge and interchange fees:

Client surcharge

— Fees charged to clients for transactions, over and above the base transaction fee.

Interchange

— Interchange fees received from other stakeholders for cross-network transactions.

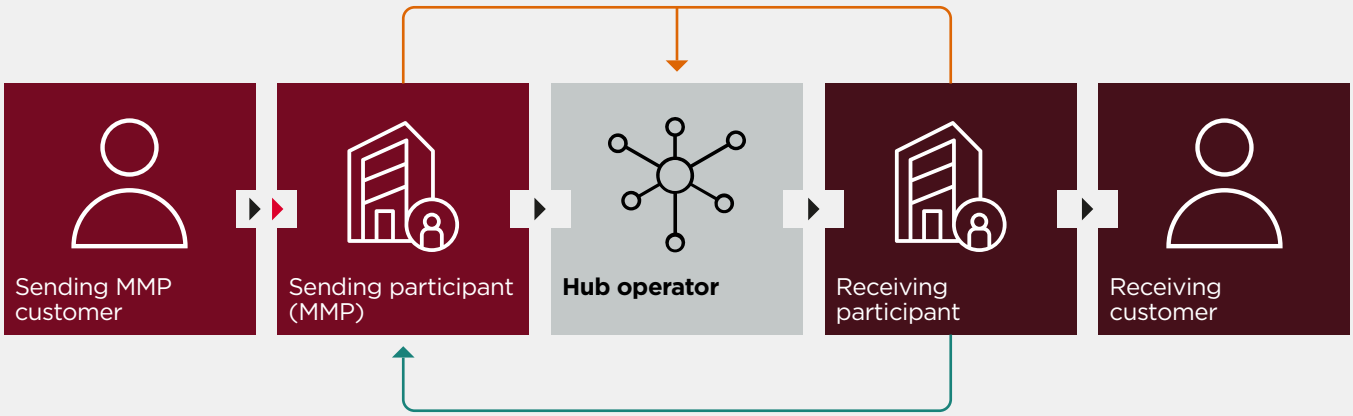
7 Note: For mobile money providers, some of the costs of interoperability are absorbed by their ongoing mobile money operational costs and do not add additional financial burden. For example, SMS costs and platform maintenance are expenses that they would incur regardless of interoperability.

Figure 3

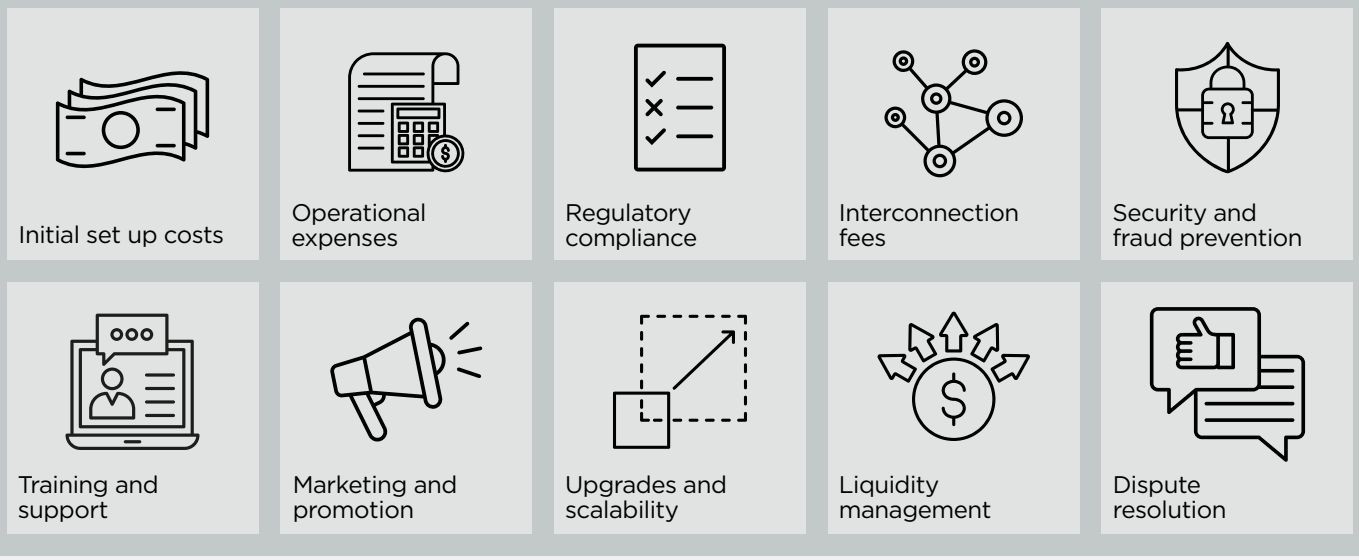
Example of a mobile money provider (MMP)-origin interoperable person-to-person (P2P) transaction within a central bank interoperable payment hub[8]

Source: CGAP, GSMA analysis.

Principal fund transfer · Pays customer fee · Pays switching fees · Pays interchange fee



Costs borne by the hub operator



8 CGAP. (2021). Construire mieux et plus vite: Guide des systèmes de paiement instantané inclusifs.

Among the six markets, each country's interoperability model is influenced by its unique financial landscape and regulatory environment. There is no one-size-fits-all model. Interoperability models are unique and implemented by central banks or commercial banks typically for standard use cases like P2P transactions. As such, the costs borne and revenue gained by mobile money providers in such initiatives varies by country (Figure 4).

Figure 4

Revenue and costs of mobile money providers in interoperable payment hubs, by country[9]

Source: 2023 GSMA in-country key informant interviews in Ghana, Jordan, Pakistan, Rwanda, Tanzania and Uganda and desk research.

REVENUE	Jordan	Ghana	Pakistan	Rwanda	Tanzania
Interchange received	■	■		■	■
Client surcharge	■	■			■
COSTS					
Membership fees	■	■			
Switching fees	■	■		■	
Interchange paid	■	■		■	■

For mobile money providers participating in an interoperability model, the optimal strategy requires them to improve revenue streams and minimise costs. Provider approaches to successful commercialisation of interoperable transactions can differ by country due to unique interoperability models and costs (Figure 5).

Figure 5

Revenue gained and fees borne by the sending mobile money provider when a customer sends a USD $10 P2P transaction through the national hub, by country[10]

Source: 2023 GSMA in-country key informant interviews in Ghana, Jordan, Pakistan, Rwanda, Tanzania and Uganda and desk research.

REVENUES	Jordan	Ghana	Pakistan	Rwanda	Tanzania
Interchange	Yes, undisclosed	$0	$0	$0.0375	$0.06
Surcharge	$0	$0.1	$0	$0	$0.5
Total	**n/a**	**$0.1**	**$0**	**$0.0375**	**$0.56**
COSTS					
Switching fees	$0	$0.02	$0	$0.065	$0

9 Note: Mobile money providers all bear initial set up costs and operational costs when transacting through a hub. At the time of this study the Uganda Central Bank hub was not yet live. The Central Bank of Uganda was in the process of contracting with a technology provider.

10 Note: Based on this research, interchange fees exist in Jordan however, data on interchange revenue (and total revenue) was not disclosed by participants. At the time of this study the Uganda Central Bank hub was not yet live. The Central Bank of Uganda was in the process of contracting with a technology provider.

Interchange fee structure

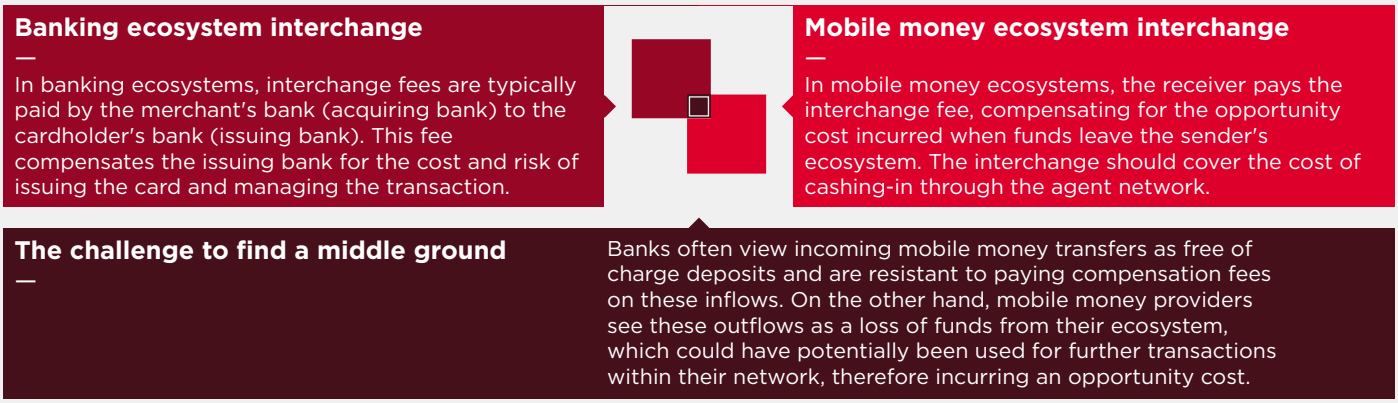
For mobile money providers to be commercially sustainable in interoperability initiatives, central banks must set prices that allow these providers to cover their costs, as well as to innovate and grow in their market. Interchange fees are a key component of revenue for mobile money providers who favour a 'receiver-pays' interchange fee model.

This can be a point of contention with banks who often resist paying fees on incoming mobile money transfers. Finding a middle ground is more likely to nurture a healthy interoperable ecosystem that benefits both parties and their customers. The delicate balance of interests requires a careful approach to fee structuring for equitable outcomes (Figure 6).

Figure 6

Overview of interchange fee structures between mobile money providers and banks

Source: 2023 GSMA in-country key informant interviews in Ghana, Jordan, Pakistan, Rwanda, Tanzania and Uganda and desk research.



The impact of interoperability prices on provider revenue

Our research found that central banks tend to lower costs to promote their interoperability platforms while simultaneously lowering or capping the revenue streams of mobile money providers. This action inadvertently restricts mobile money providers' sources of direct revenue from interoperable transactions, negatively impacting their profitability (Figure 7). Ensuring sustainable provider revenue can benefit the long-term success of interoperability initiatives. A well-structured pricing strategy enables mobile money providers to consistently cover their cost base, and invest and innovate, contributing more to a thriving and growing digital financial ecosystem. This in turn benefits customers by lowering transaction costs.

Figure 7

Overview of central banks' interoperability commercial structures and their impact on mobile money providers' revenue[11]

Source: 2023 GSMA in-country key informant interviews in Ghana, Jordan, Pakistan, Rwanda, Tanzania and Uganda and desk research.

		Impact on mobile money providers'...	
Country	**Central bank's commercial objectives**	**Interchange fees**	**Surcharge fees**
Jordan	Reinvest profits made from the hub, to expand services	Fixed by the Central Bank of Jordan	No surcharge implies no switching fees
Ghana	Provide a level-playing field for participants	No interchange for P2P transactions	Surcharge cap reduced from 1.5% to 1%
Pakistan	Operate a 'zero-rated' hub	No interchange	No surcharge
Rwanda	Increase usage among participants and end-users	Interchange agreed between mobile money providers	No surcharge
Tanzania	Operate a 'zero-rated' hub, to lower the fees for end-users	Fixed by the Bank of Tanzania	Industry-led. No mandate yet from the Bank of Tanzania
Uganda	Lower end-user fees typically perceived as high	To be defined	To be defined

11 Note: At the time of this study the Uganda Central Bank hub was not yet live. The Central Bank of Uganda was in the process of contracting with a technology provider. 'Zero rating' refers to the practice of providing services without financial cost under certain conditions.

Provider interoperability revenue streams

In the long-term, interoperability can increase transaction volumes and significantly evolve the pricing and business models of mobile money providers from transactional operations to value-added services and partnerships (Figure 8).

Figure 8

Maturity of mobile money providers' interoperability business models

Source: 2023 GSMA in-country key informant interviews in Ghana, Jordan, Pakistan, Rwanda, Tanzania and Uganda and desk research.

– LOW — Maturity of mobile money providers' interoperability business model — HIGH +

	1	2	3
Mobile money provider revenue streams	**Transactional before maturity** E.g. transaction fee, cash-in/out fee, account creation fee, service fee, foreign exchange fee	**Diversification of activities** E.g. credit, insurance, savings, B2B, merchant payments, online payments, agritech, smart farming	**Innovation in the ecosystem** E.g. super-app integrated functions, mobile money API integration in 3rd parties' ecosystems
Countries in this study	n/a	Ghana, Jordan, Rwanda, Uganda	Pakistan, Tanzania
Mobile money provider objectives	Customer acquisition Regulatory compliance Infrastructure development	Service expansion Market penetration Customer retention	Ecosystem integration Technology leadership Global reach
Observed mobile money provider strategies	Establishing a pricing model that encourages usage while maintaining profitability	Balancing pricing in a way that it maintains new and existing revenue streams and ensuring that interoperability does not cannibalise more profitable services	Forming alliances that enhance the platform's value proposition and ensure its centrality in an interconnected ecosystem
Mobile money provider pricing and fees	+ HIGH — Magnitude of mobile money providers' interoperability pricing and fees — LOW –		

Our research found that mobile money providers need to balance price competitiveness with service quality to sustain profit. Diversifying through additional ecosystem and adjacent services such as merchant payments, credit and insurance, in addition to tiered pricing, and cost-sharing partnerships, can secure interoperability's financial benefits.

In highly banked countries such as Pakistan and Jordan, mobile money services, to remain relevant, need to seamlessly integrate with banks, which makes interoperability essential. Mobile money providers can focus on value-adding services to enhance and complement what is offered already through traditional banking.

In countries with relatively low banking rates, mobile money is transformative, and not just an alternative to incumbent banks. Interoperability has demonstrated its ability to expand mobile money's reach, making it the leading financial tool for many. However, to remain relevant and keep services accessible to everyone, mobile money providers need to consider the pace of competition and potential investment and keep innovating.

Provider decision-making for interoperability commercial viability

When evaluating the potential benefits of interoperability, mobile money providers typically consider five factors to determine if interoperability is a viable and profitable activity: cost, revenue, scalability, robustness and governance (Figure 9).

These factors are accompanied by decision-making criteria. For example, a mobile money provider looking to reduce costs to make interoperability commercially viable might consider if they can create efficiencies to reduce operational costs and negotiate favourable interchange fee terms.

Figure 9

Interoperability decision-making for mobile money provider commercial viability

Source: 2023 GSMA in-country key informant interviews in Ghana, Jordan, Pakistan, Rwanda, Tanzania and Uganda and desk research.



Case studies on different countries' interoperability initiatives



Interoperability initiatives in the six focus countries are moving toward central bank-operated hub models. However, there is divergence among the models adopted. Each country's model requires different levels of adaptation by participants, including mobile money providers, that are influenced by the financial ecosystem, market maturity, regulation and transition to the latest model of interoperability.

The interoperability models can be grouped by three levels of maturity (Figure 10):

- Maturing hub interoperability (Ghana and Pakistan)
- Navigating regulatory frameworks (Jordan and Rwanda)
- Transitioning interoperability models (Tanzania and Uganda)

This chapter presents the experiences of Ghana, Jordan and Tanzania.

Figure 10

Summary of mobile money interoperability in six low- and middle-income countries (LMICs)

Source: 2023 GSMA in-country key informant interviews in Ghana, Jordan, Pakistan, Rwanda, Tanzania and Uganda and desk research.

Maturing hub interoperability

There have been long-running engagements between hub participants and central bank and bank-owned hubs in Ghana and Pakistan.

Ghana

In Ghana, interoperability has expanded the reach, adoption and use of digital financial services. As mobile money providers tend to experience issues with the reliability of transactions, maintaining commercial sustainability is a challenge, particularly for market challengers who consider interoperability as an investment to expand their business.

Pakistan

In Pakistan, the establishment of interoperable payment platforms including 1LINK and Raast has significantly improved transaction capabilities and financial inclusion. The zero-rated model introduced by State Bank of Pakistan is perceived by mobile money providers as an opportunity to expand services and customer base. The long-term sustainability of this model has yet to be proven.

Navigating regulatory frameworks

Central banks play a pivotal role in establishing, governing and scaling interoperability initiatives in Rwanda and Jordan.

Jordan

In Jordan, the pricing strategy for interoperable transactions is evolving. Adjustments are regularly made with the aim of establishing fair prices and conditions for each unique participant of interoperability initiatives. Interoperability, especially when integrated with diversified service offerings and partnerships, strengthens the commercial viability and sustainability of mobile money providers.

Rwanda

Rwanda's interoperability initiative, operated by RSwitch Ltd., is nascent. RSwitch consistently manages the balance of commercial sustainability between the initiative and its financially divergent participants (mobile money providers, banks) by adjusting pricing and encouraging stakeholder consensus.

Transitioning interoperability models

Interoperability initiatives aim to ensure the commercial sustainability of participants during shifts from industry-led initiatives to national hubs in Tanzania and Uganda.

Tanzania

In Tanzania, despite encountering transitional, operational, and regulatory challenges, a no-fee central bank hub has been introduced. Discussions are ongoing regarding commitment to the commercial sustainability of participants. In parallel, government-imposed levies on mobile money transactions had raised transaction fees and had a negative impact on customers who reduced their usage or sought other informal methods of transacting.

Uganda

Mobile money interoperability in Uganda is developing, yet it is on a promising trajectory to build financial inclusion and increase transaction volumes via a unified digital payment ecosystem. Pricing, the commercial sustainability of the initiative and participants and the regulatory framework are currently being considered. There are also some technical challenges to overcome.



Ghana

Interoperability in Ghana

The Bank of Ghana (BoG) has played a key role by mandating interoperability among mobile money providers and banks. Since 2018, the Ghana Interbank Payment and Settlement System (GhIPSS), a subsidiary of the BoG, has facilitated interoperability. The BoG's directive has not only enabled a collaborative ecosystem among financial service providers but also propelled the nation toward achieving its objectives of financial inclusion and a cash-lite economy. It has achieved this by ensuring that mobile money services are interconnected with all financial service providers.

This strategic move has positively impacted the commercial sustainability of mobile money providers by creating a unified platform that has expanded the reach and adoption of digital financial services across the country. However, as mobile money providers still experience transaction reliability issues, maintaining commercial sustainability can be a challenge – especially for market challengers who consider interoperability as an investment to extend their reach.

Box 1

Key aspects of interoperability in Ghana

Leveraging established infrastructure for interoperability: GhIPSS has been key in managing interoperable payment system infrastructures, laying a robust foundation for mobile money interoperability and aligning with national goals to transition towards a cash-lite economy.

Positive regulatory and collaborative frameworks: The regulatory environment in Ghana encourages dialogue and inclusivity. GhIPSS has also demonstrated innovation and agility by introducing multiple features and changes in a short space of time based on evidence and consultations.

Adoption and user experience in interoperable transactions: The introduction of interoperability has driven a surge in transaction volumes, tripling since its inception. However, interoperability issues remain the primary reason of complaint at one mobile money provider's call centre. Furthermore, some bilateral connections, at additional cost, are maintained as a backup for when the hub experiences downtime.

A balanced and sustainable approach to pricing and revenue models: Two years ago in Ghana, there was a pivotal shift in the pricing model. Sending institutions, which used to bear the cost of the hub underwent a transition due to a proposal put forward by mobile money providers. This transition shifted the financial responsibility to the receiver. The receiver not only covers the GhIPSS switching fee but also compensates the sending mobile money providers for liquidity leaving their ecosystem. Shifting the cost to the receiver helps to balance the liquidity outflow to some extent.

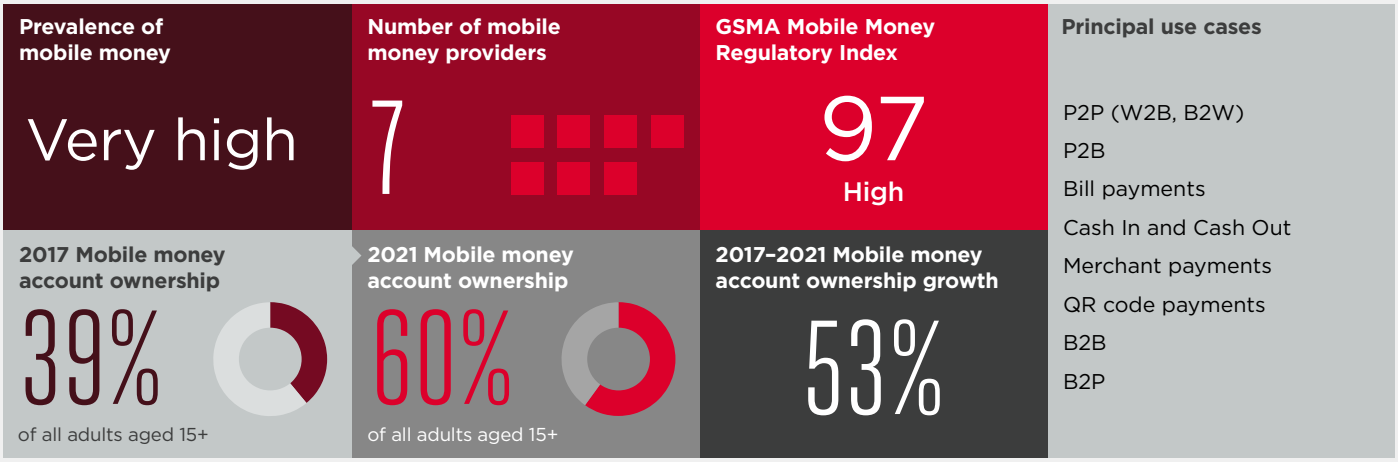
The mobile money landscape in Ghana

Ghana is one of the most mature mobile money markets in Africa. The percentage of the adult population aged 15 and above with a mobile money account grew from 39% in 2017 to 60% in 2021[12] (Figure 11). The Bank of Ghana has proactively regulated and promoted digital financial services, improving the confidence of providers and customers in the ecosystem.

Figure 11

Mobile money in Ghana[13]

Source: GSMA Mobile Money Prevalence Index; GSMA Mobile Money Deployment Tracker; GSMA Mobile Money Regulatory Index; GSMA 2023 in country key informant interviews in Ghana; GSMA 2023 desk research and analysis; World Bank FINDEX 2021.

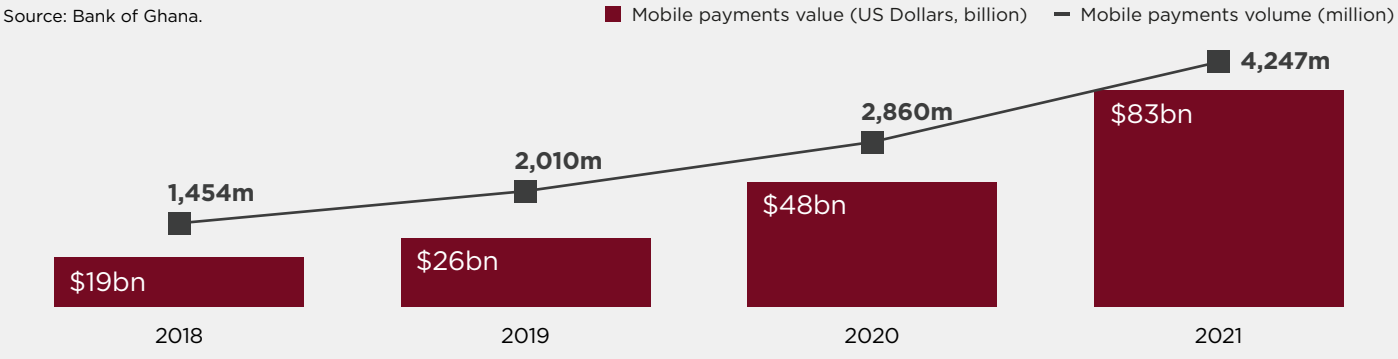


Ghanaians use mobile money for a variety of transactions beyond cash in, cash out and P2P, such as bill payments, merchant and QR code payments, and bank-to-mobile interoperable transactions. The ease and convenience offered by these services have played a pivotal role in the growth of mobile money in the country. Total mobile money transaction volumes grew from 1.45 billion in 2018 to 4.25 billion in 2021, with transaction values growing from $19 billion to $83 billion in the same period (Figure 12).

Figure 12

Total mobile money transaction volume and value in Ghana, 2018 to 2021[14,15]

Source: Bank of Ghana.



12 World Bank. (2023). The Global Findex Database 2021.
13 Note: Percentages are rounded to the nearest percentage point. Further use cases may exist.
14 Bank of Ghana. (2022). Payment Systems Oversight Annual Report 2021.
15 Note: US Dollar exchange rate calculated in November 2023.

The interoperability model in Ghana: Benefits and challenges

Since 2016 and enabled by aggregators, any mobile money provider in Ghana has been interoperable with other providers. Prior to the introduction of hub-based mobile money interoperability, providers could interoperate among themselves through aggregators, such as Nsano, who act as intermediaries enabling information exchange, transactions and settlements between different platforms and systems.

In 2018, the Ghana Interbank Payment and Settlement Systems Limited (GhIPSS), a subsidiary of the Bank of Ghana (BOG), introduced a different model of interoperability (Figure 13).

Figure 13

Summary of mobile money interoperability in Ghana

Source: 2023 GSMA in-country key informant interviews in Ghana and desk research.

Technical model of interoperability	Global Payment Hub
Technical infrastructure operator	GhIPSS – Bank Of Ghana (BOG)
Year of launch	Aggregator – 2016; GhIPSS – 2018
Ownership model	GhIPSS is wholly owned by the Bank of Ghana
Number of banks involved	24
Number of financial service providers involved	7
Key mobile money providers	MTN, AirtelTigo, Vodafone, Zeepay, G-Money
Primary interoperable use cases	P2P, QR payments, Merchant Payments, W2B, B2W, B2B, P2B

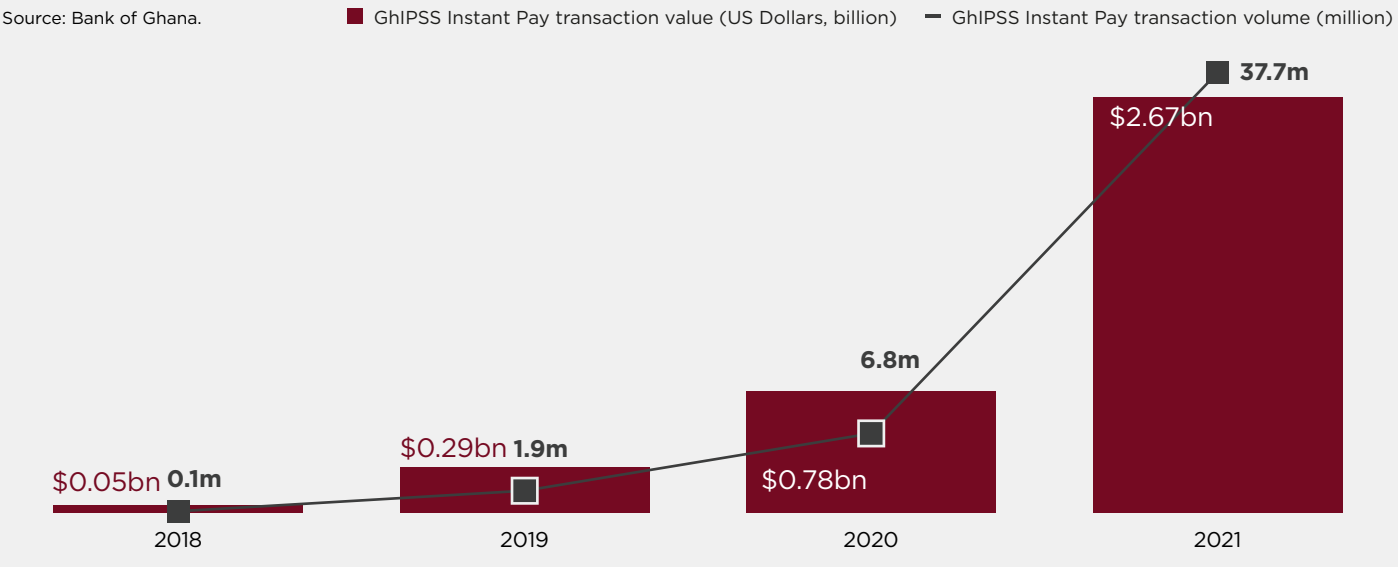
The new model of interoperability introduced by GhIPSS in 2018 has been transformative. GhIPSS Instant Pay transaction volumes have increased from 0.1 million in 2018 to 37.7 million in 2021 (Figure 14).

The new model enables users to transfer funds between mobile money wallets and bank accounts without the need for third-party intervention.

Figure 14

Total volume and value of GhIPSS Instant Pay transactions, 2018 to 2021[16]

Source: Bank of Ghana.



16 Bank of Ghana. (2022). Payment Systems Oversight Annual Report 2021.

Interoperability model benefits

Established infrastructure

Since 2007, GhIPSS has been managing interoperable payment system infrastructures such as the National Switch & Biometric Smart Card Payment System – E-Zwich and the GhIPSS Instant Payment (GIP) and Mobile Money Interoperability (MMI) System, providing a solid foundation for mobile money interoperability.

Rapid adoption

Early data from GhIPSS revealed strong public demand for cross-net mobile money provider transactions[17].

New use cases

The connection of the national card scheme, E-Zwich, to the hub in November 2018 brought with it a range of use cases, including wallet-to-wallet transfers and transfers to and from bank accounts and E-Zwich cards.

Alignment with national goals

The growth of mobile money in Ghana is aligned with the BOG's mission to realise financial inclusion and a 'cash-lite' economy.

Regulatory environment

Ghana's regulatory environment is accommodating towards mobile money providers, encouraging dialogue and feedback among all stakeholders. This environment has been gradually improving since the launch of mobile money in 2010 with mobile money providers and fintechs being included more in Ghana Interbank Settlement (GIS) System discussions, such as via the Payment Systems Advisory Committee (PSAC) working groups.

Innovation and agility

GhIPSS employs an agile approach to innovation, introducing changes and any new features quickly, based on evidence and consultation.

Interoperability model challenges

Representation

Non-banks may participate in clearing directly or indirectly, but participation in the GIS System is predominantly restricted to licensed clearing banks. Non-banks do not have a seat in the PSAC.

Technical challenges

Transaction failures due to 'timing-out' were common after the commercial launch. Issues arose from the hub's processing capacity and misalignment in one mobile money provider's implementation. The hub has since introduced a single point of failure.

Education

Educating users on sending money to another network has been challenging. Initially, agents had to assist. However, the BOG has since scaled up its educational efforts. Around 0.05% of switching fees are now dedicated to the promotion of interoperable transactions.

Managing reverse transactions

Challenges to stakeholders include managing reverse transactions, multiple verifications, failed transactions, and bank closures further delaying transactions.

Managing complaints

Resolving user complaints was another challenge faced by stakeholders of the interoperability initiative. One mobile money provider's call centre found interoperability issues as the primary reason for customer complaints.

The interoperability model in Ghana: Commercial successes and challenges

Interoperability pricing parameters

Mobile money providers in Ghana absorb a variety of costs and gain new revenue streams when participating in the interoperability scheme. New mobile money providers pay a one-time joining fee. Any providers receiving transactions cover GhIPSS processing and interchange fees.

To generate revenue, sending mobile money providers can charge clients (a surcharge) up to 1% of the transaction and earn from the interchange. This 'receiver pays interchange structure' has been introduced due to mobile money provider advocacy in 2021. It balances costs and benefits, promoting more sustainable interoperability (Figure 15).

17 Based on key informant interviews in Ghana.

Figure 15

Interoperability pricing parameters[18]

Source: 2023 GSMA in-country key informant interviews in Ghana and desk research.

MOBILE MONEY PROVIDER COSTS

Type of cost	Costs
Platform access	One-time joining fee paid by new participants.
Switching	Receiving mobile money provider pays GhIPSS switching fees of 0.2%, out of which 0.05% is dedicated to marketing and communication.
Interchange	Receiving mobile money provider pays the interchange. There is no interchange for P2P transactions.

MOBILE MONEY PROVIDER REVENUE

Type of revenue	Revenue
Surcharge	A client surcharge, of a maximum of 1% of the transaction amount, can be levied by the sending mobile money provider, capped at 10 GHS (0.85 USD).
Interchange	Sending mobile money provider receives the interchange

Interoperability commercial benefits and challenges for mobile money providers

Ghana's mobile money interoperability initiative has driven the adoption of interoperable transactions for a range of use cases, aligning with the BOG's vision for a cash-lite economy. There are commercial benefits for mobile money providers including an equitable pricing structure and opportunity to grow transaction volumes. However, the ecosystem faces challenges such as system reliability and the use of bilateral connections for merchant interoperability.

Commercial benefits

Potential for transaction growth

Interoperability has driven transaction growth. Before interoperability, transaction volumes had stagnated for one provider; since the introduction of interoperability, transactions have more than tripled.

Common price structure and range

In 2021, mobile money providers agreed on a pricing structure where the receiver covers the GhIPSS switching fee and compensates the sending mobile money provider for liquidities leaving its ecosystem. This 'receiver pays' model was selected because interoperable payments mainly flow from small sending providers to larger and more dominant ones.

Commercial challenges

Transaction failures

The most common issue experienced by mobile money providers is a daily occurrence of transaction failure, impacting the reliability of the system and trust in it. As a result, mobile money providers now keep bilateral connections as a backup for P2P transactions in case of failure of GhIPSS. Due to these transaction failures, quality of service and customer retention is at risk.

Multiple business models for interoperable transactions

For merchant payments in particular, mobile money providers prefer to keep bilateral connections in place with other providers, especially when operating as acquirers. This is because no consensus has so far been reached by industry stakeholders and GhIPSS on a mutually acceptable solution.

18 Note: US Dollar exchange rate calculated in November 2023.



Jordan

Interoperability in Jordan

Mobile money was launched in Jordan in 2010 with limited initial success. The regulatory landscape pivoted in 2013, with the introduction of the Payment Service Provider (PSP) status for non-banks. In 2016, interoperability through the central payments hub, JoMoPay, was mandated. The purpose was to connect mobile money providers, banks and prepaid card issuers.

The Central Bank of Jordan (CBJ) is committed to enhancing the interoperability and robustness of the mobile money ecosystem. This is enabled through regulatory amendments, fee changes, and cost reductions (through a shift to cloud-based infrastructure) and the development of online and QR code merchant payments.

The pricing of interoperability is still evolving to ensure benefits are realised by all participating stakeholders and their customers. For mobile money providers, interoperability, diversified services and partnerships are important and contribute to their commercial viability and sustainability.

Box 2

Key aspects of interoperability in Jordan

Evolution of mobile money: Launched in 2010, mobile money in Jordan has undergone a transformative journey through regulatory and operational challenges, achieving nationwide interoperability in 2016.

Enhanced transaction capabilities and user engagement: The implementation of interoperability, especially through the CliQ[19] payment system, has facilitated seamless transactions between mobile money providers and banks. One provider reported a fivefold increase in interoperable transactions over the past 2 years. Stakeholders report that they recognise quality of service has increased since the hub has been managed by Jordan Payments & Clearing Company (JoPACC).

Inclusive ecosystem and diverse services: Interoperability has enabled an inclusive financial ecosystem, expanding the user base and diversifying the service portfolio of stakeholders. Interoperability serves as a foundation for alternative revenues but is not an end in itself. For example, P2P transactions account for less than 10% of one provider's revenues, including interoperable transactions.

Aligning interests and ensuring commercial sustainability: Balancing the interests of multiple stakeholders presents a challenge to ensuring that the interoperability model is commercially sustainable and equitable for all involved entities.

19 JoPACC. (2020). CliQ.

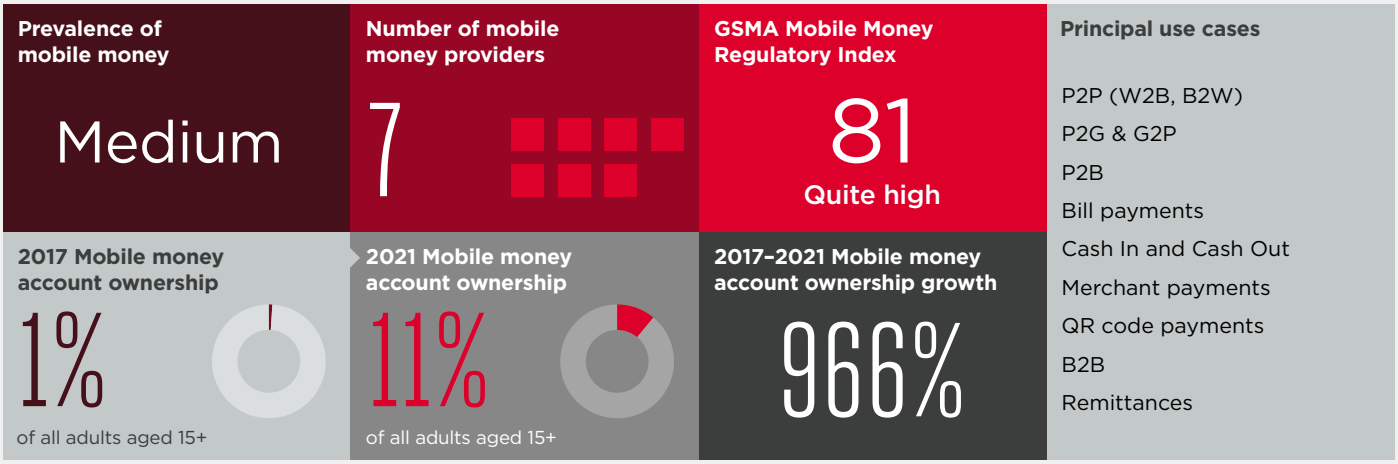
The mobile money landscape in Jordan

In 2013, the Central Bank of Jordan (CBJ) published its new regulatory framework for mobile money: the Mobile Payment Services Instructions.[20] Since then, the percentage of the population aged 15 and above with a mobile money account grew from 1% in 2017 to 11% in 2021. As of 2023 there are 7 mobile money providers in Jordan providing a variety of use cases for their customers (Figure 16).

Figure 16

Mobile money in Jordan[21]

Source: GSMA Mobile Money Prevalence Index; GSMA Mobile Money Deployment Tracker; GSMA Mobile Money Regulatory Index; GSMA 2023 in country key informant interviews in Jordan; GSMA 2023 desk research and analysis; World Bank FINDEX 2021.

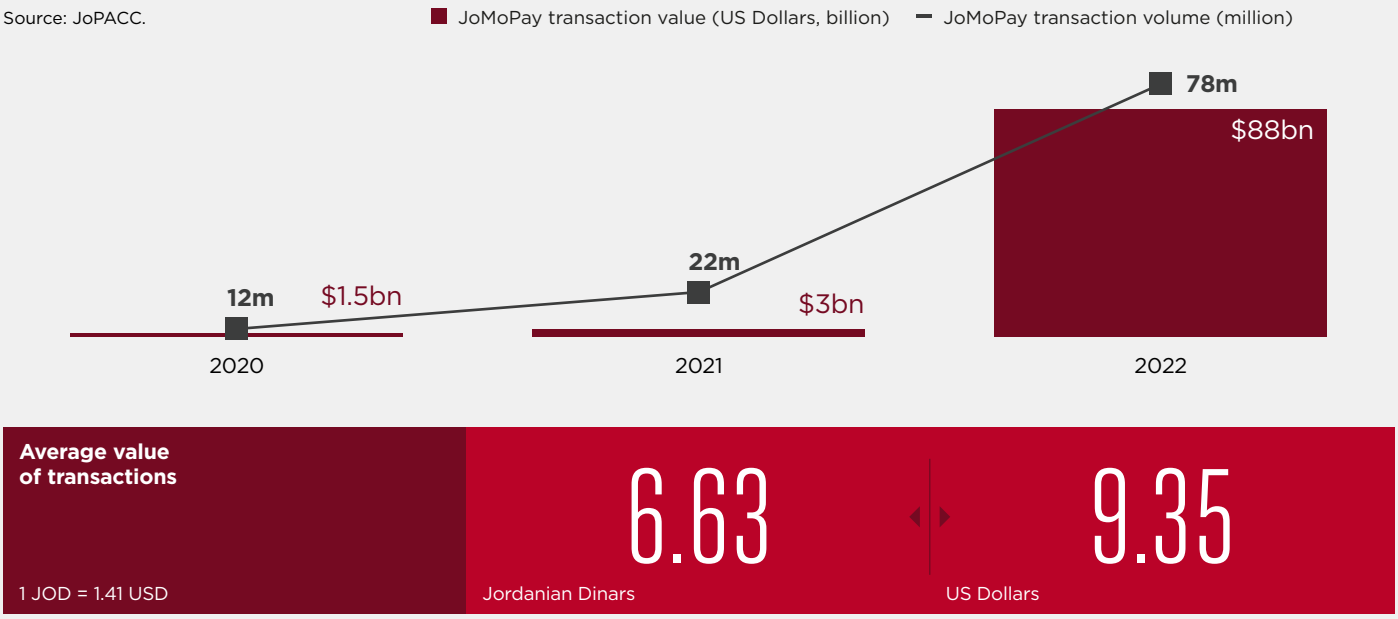


Mobile transactions have grown significantly in Jordan, particularly since the launch of mobile money provider to bank interoperability in 2021. JoMoPay transaction volumes have increased from 12 million in 2020 to 78 million in 2022. This growth has been driven by high smartphone penetration, the impact of the COVID-19 pandemic, and a demand for convenience. (Figure 17).

Figure 17

Total volume and value of JoMoPay transactions, 2020 to 2022[22]

Source: JoPACC.



20 Central Bank of Jordan. (2013). Mobile Payment Services Instructions.
21 Note: Percentages are rounded to the nearest percentage point. Further use cases may exist.
22 JoPACC. (2020). End of year report; JoPACC. (2021). End of year systems report; JoPACC. (2022). End of year systems report. Note: US Dollar exchange rate calculated in November 2023.

The interoperability model in Jordan: Benefits and challenges

The Central Bank of Jordan (CBJ) has put in place an open playing field for banks and non-bank institutions to provide mobile money services. In 2016, the first interoperability model in the Middle-East and North Africa (MENA) region, JoMoPay, a mobile payments hub, was launched (Figure 18). This national switching infrastructure enabled full interoperability from inception.

Figure 18

Summary of mobile money interoperability in Jordan

Source: 2023 GSMA in-country key informant interviews in Jordan and desk research.

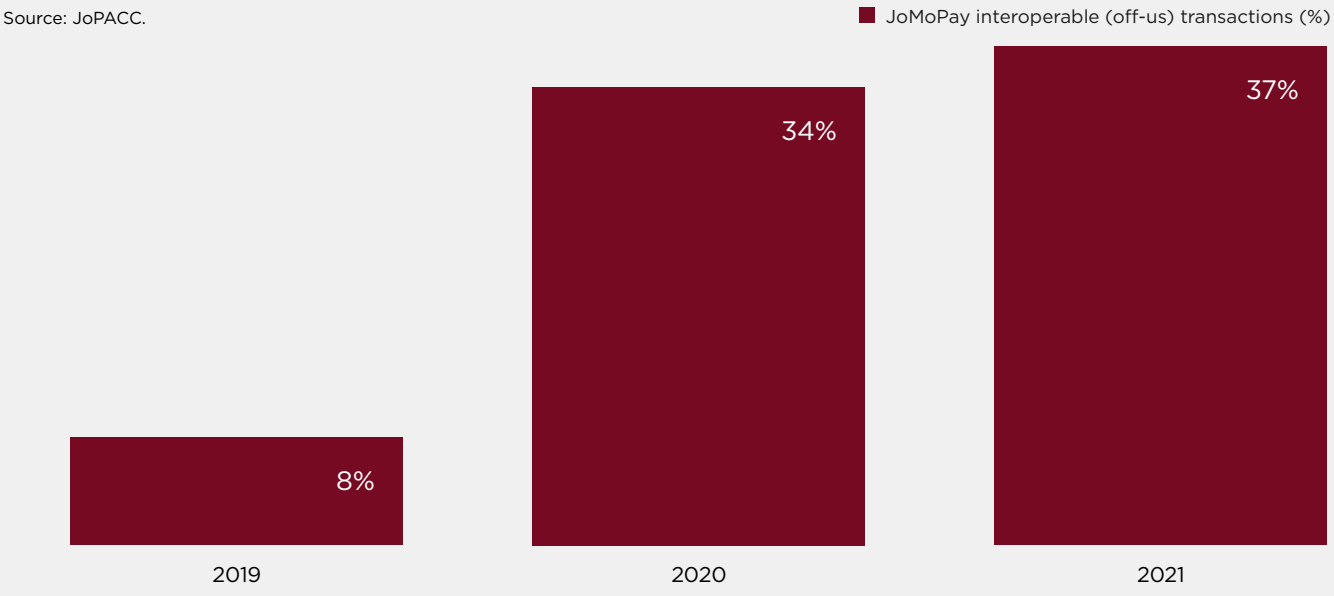
Technical model of interoperability	Global Payment Hub
Technical infrastructure operator	JoMoPay (mobile payment hub) operated by JoPACC
Year of launch	MMP to MMP (2016), MMP to Bank (2021)
Ownership model	The Central Bank of Jordan owns 45% of the shares in JoPACC, 55% are divided between the 21 banks
Number of banks involved	21
Number of financial service providers involved	8
Key mobile money providers	Orange Money, Zain Cash, Aya, Dinarak, Mahfazti
Primary interoperable use cases	Merchant Payments, W2B, B2P, P2P, QR payments

JoMoPay interfaces with other platforms, such as the national ATM switch or the eFAWATEER national bill payment system. The Jordan Payments and Clearing Company (JoPACC) launched CliQ instant payments in 2020, allowing mobile money providers (MMPs) to connect to banks as a response to notable demand for digitising cash transactions. The percentage of JoMoPay transactions that are interoperable has grown from 8% in 2019 to 37% in 2021 (Figure 19).

Figure 19

Percentage of JoMoPay transactions that are interoperable (off-us), 2019 to 2021[23]

Source: JoPACC.



23 JoPACC. (2022). 2021 End of Year Systems Report.

Interoperability model benefits

Established infrastructure

JoMoPay has been managing interoperable payment system infrastructures since 2014, providing a solid foundation for mobile money interoperability since its inception.

Enhanced connectivity

JoMoPay facilitates interoperability among mobile money providers and between them, banks, and prepaid card issuers, enhancing the connectivity and transaction capabilities across different financial service providers.

A range of use cases

Many use cases are facilitated, including P2P, P2B, G2P, P2G, B2B, merchant payments, bill payments and eCommerce. JoPACC currently focuses on increasing merchant payment volumes, especially online and through QR codes.

Alignment with national goals

The growth of mobile money is directly aligned with the Bank of Jordan's mission to drive financial inclusion.

Interoperability model challenges

Cost of integration

The choice of technology had a direct impact on the cost of technology integration for mobile money providers. Despite the CBJ's determination to minimise the cost of technical integration for payment service providers, mobile money providers initially found integration with JoMoPay complex, necessitating simplification of technical requirements and reengineering.

Operational adjustments

Mobile money providers had to pause and relaunch their mobile money services to accommodate W2W interoperability, due to a mandate requiring them to be interoperable from launch of JoMoPay.

Governance concerns

The transition of ownership of JoMoPay from the central bank to JoPACC and the subsequent ownership model might raise concerns among mobile money providers about who JoPACC represents. Mobile money providers are willing to and had planned to acquire shares in JoPACC however, at the time of this study, there was no evident short-term plan in place.

The interoperability model in Jordan: Commercial successes and challenges

Interoperability pricing parameters

Mobile money providers in Jordan are free to charge customers for interoperable transactions. No mandate has been set by the Central Bank of Jordan (CBJ). However, since August 2023, and in order to promote a zero-fee structure for end-users in line with CBJ's financial inclusion objective, the hub (JoMoPay) charges switching fees only to mobile money providers charging end-users for interoperable transactions. There is an annual subscription fee for joining The Jordan Payments and Clearing Company (JoPACC) (depending on the number of registered mobile wallets). There is also an interchange model compensating the sender of the transaction. All the profits of JoMoPay are reinvested into JoPACC to develop new mobile services (Figure 20).

Figure 20

Interoperability pricing parameters

Source: 2023 GSMA in-country key informant interviews in Jordan and desk research.

MOBILE MONEY PROVIDER COSTS

Type of cost	Costs
Platform access	• One-time set up cost • Annual subscription fees of 10,000 Jordanian Dinars • Fees (from 5000 to 20,000 Jordanian Dinars) based on the number of wallets registered
Switching	Receiving mobile money provider pays a fixed amount, based on three tiers: **1** Less than 50 Jordanian Dinars **2** Between 50 and 200 Jordanian Dinars **3** Above 200 Jordanian Dinars – only for mobile money providers applying a client surcharge from 6th August 2023
Interchange	Receiving mobile money provider pays interchange, a fixed amount based on three different transaction value tiers (the same tiers as shown above).

MOBILE MONEY PROVIDER REVENUE

Type of revenue	Revenue
Surcharge	Client surcharge depends on the mobile money provider and on the type of transaction
Interchange	Sending mobile money provider receives interchange

Interoperability commercial benefits and challenges for mobile money providers

Jordan's interoperability model was launched by the CBJ in 2016 from the inception of mobile money. The JoMoPay platform offers a diversity of use cases and has seen rapid adoption in the last few years. Within its ecosystem, everything is carried out in collaboration with the market, co-creating new and different services. The rules for businesses are being refined and tested with the industry's input. Looking ahead, JoPACC is focusing on increasing merchant payments and digital acceptance so the industry can leverage revenue from new services.

Commercial benefits

Operating costs

The operating framework enables JoMoPay to charge switching fees for transactions. To promote the hub, the CBJ introduced a two-year period of grace to allow onboarding of new providers.

Enhanced customer reach and potential for new revenue streams

Interoperability, especially through JoPACC, allows mobile money providers to reach a wider customer base by connecting with banks, easing push and pull transfers. Interoperability serves as a foundation for alternative revenue. However, P2P transactions account for less than 10% of one provider's revenues, including interoperable transactions.

Potential for increased transactions

The introduction of interoperability has stimulated transactions, benefiting mobile money providers in the long-term. One provider noticed a multiplier effect of five on its transactions the last two years.

Collaborative fee setting

Mobile money providers have been involved in discussions about business rules and fees, allowing them to have a say in commercially oriented aspects of interoperability that impact them.

Additional services

An increase in interest rates has positively impacted the benefits of an escrow account[24]. Mobile money providers have expanded their portfolios to include credit and international remittances, providing additional revenue streams and customer services.

Commercial challenges

Fee and revenue concerns

For each stakeholder, each interoperable use case has its own unique business model. This means it can take a long time to reach consensus among interoperability participants and set rules. The recent introduction of switching fees introduces a new cost for mobile money providers to manage (charging their customers).

Technical challenges

Mobile money providers faced technical issues at the inception of interoperability however, since the platform is owned by a private entity, clear service level agreements (SLAs) have been set up, alleviating these issues.

Technical upgrade costs

Mobile money providers might incur costs related to technical upgrades and adaptations to ensure compatibility and efficient functioning with JoMoPay. For instance, some banks in the ecosystem are not compliant with ISO2OO22[25] standards and are still using convertors[26].



24 Some mobile money providers hold customer funds in escrow accounts at banks. These escrow accounts earn interest, which is a source of revenue for these providers. With the recent increase in interest rates, the interest earned on these escrow accounts has risen. As a result, mobile money providers have seen a positive impact on their revenues.

25 ISO 20022. (2023). About ISO 20022.

26 Able to convert incoming ISO 20022 format messages to an older format that an organisation's existing legacy system can process.



Tanzania

Interoperability in Tanzania

Tanzania has been a pioneer in the mobile money industry and has experienced remarkable growth in mobile money account ownership, driving digital transactions and reducing reliance on cash. Interoperability has been led by the industry since 2014. As of 2022, the Bank of Tanzania (BOT) launched the Tanzania Instant Payment System (TIPS) to enhance interoperability among various financial institutions, including mobile money providers and banks.

TIPS has been "zero-rated" for participants, due to donor support from the Bill and Melinda Gates Foundation and Financial Sector Deepening Tanzania. This was achieved despite transitional, operational and regulatory challenges. This initiative will be key for the BOT's financial inclusion objective. However, the impact of levies on mobile money providers had negatively affected end-users and may further impact their interest in interoperability.

Box 3

Key aspects of interoperability in Tanzania

Interoperability with a focus on financial inclusion: Tanzania has been a pioneer in the mobile money industry, driving mobile money account ownership and use with interoperability.

Leveraging interoperability for customer reach and transaction growth: Interoperability has enabled mobile money providers to access a wider pool of customers and facilitate a greater variety of transaction types, evidenced by a seven-fold increase in P2P on-net transactions at one provider in the first year of operation. Interoperable transactions at this provider represent up to 30% of all mobile money transactions.

Technical and operational challenges: TIPS offers standardisation and a single connection to all financial service providers however, it has encountered barriers such as transition complexity and the introduction of a single point of failure. These barriers have negatively impacted customer transactions and mobile money providers' operations and reputations. Mobile money providers emphasise frequent hub downtime and consequently the need for effective redundancies or mitigations as well as minimum levels of continuity of service in service level agreements (SLAs).

Navigating regulation and commercial sustainability: While benefiting from enhanced customer reach and possible new revenue streams, mobile money providers also experienced regulatory challenges and the introduction of levies. These impact provider revenues, requiring adjustments to commercial operations and strategy. Furthermore, the transition to TIPS and potential regulatory price setting, raise concerns among providers about being able to maintain profitability and robust levels of customer satisfaction.

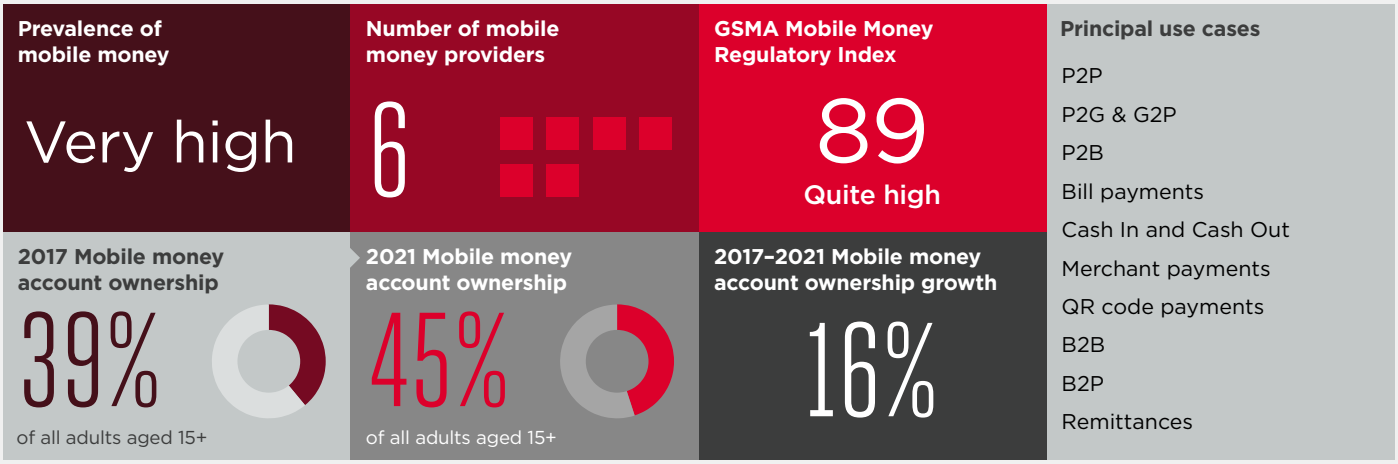
The mobile money landscape in Tanzania

Tanzania's financial ecosystem has made a transformative journey, particularly due to mobile money. In 2014, supported by the Bank of Tanzania and mobile money providers, Tanzania was the first country in Africa to implement full interoperability through bilateral agreements. It has since improved the ecosystem through implementation of a National Payment System. The percentage of the population aged 15 and above with a mobile money account grew from 39% in 2017 to 45% in 2021. It is now one of the highest prevalence mobile money markets in Africa (Figure 21).

Figure 21

Mobile money in Tanzania[27]

Source: GSMA Mobile Money Prevalence Index; GSMA Mobile Money Deployment Tracker; GSMA Mobile Money Regulatory Index; GSMA 2023 in country key informant interviews in Tanzania; GSMA 2023 desk research and analysis; World Bank FINDEX 2021.

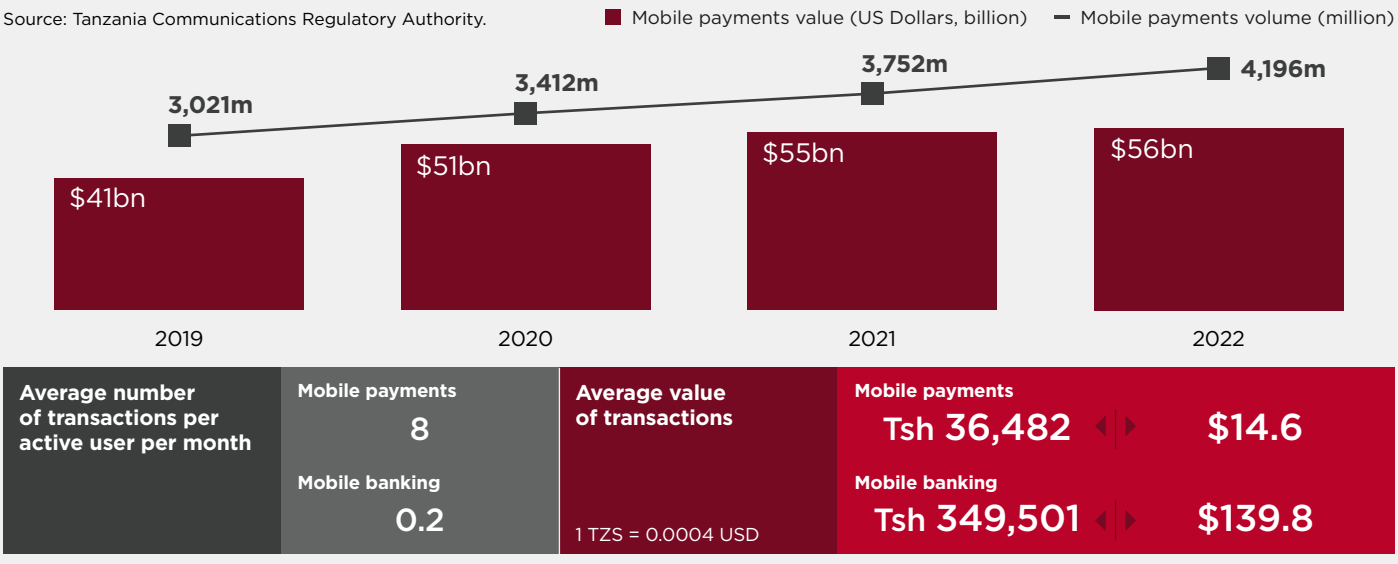


Mobile money services continue to grow in volume and value and play a role in the everyday lives of Tanzanians. Mobile payment volumes in Tanzania have grown from 3 billion in 2019 to over 4 billion in 2022 with payment values growing from $41 billion to $56 billion in the same period (Figure 22).

Figure 22

Total mobile payment transaction volume and value in Tanzania, 2019 to 2022[28]

Source: Tanzania Communications Regulatory Authority.



27 Note: Percentages are rounded to the nearest percentage point. Further use cases may exist.
28 Tanzania Communications Regulatory Authority. (2023). Statistics. Note: US Dollar exchange rate calculated in November 2023.

The interoperability model in Tanzania: Benefits and challenges

An innovative move by TigoPesa in 2014, initiating a bilateral interoperability model, set the stage for a paradigm shift in how financial transactions were conducted in Tanzania. By 2022, the Tanzanian government had introduced TIPS (Figure 23). TIPS aim is to integrate with all financial service providers (FSPs) in Tanzania. The ecosystem is currently transitioning between interoperability systems. TIPS is 100% owned by the central bank, meaning mobile money providers' interests are represented by the Tanzania Mobile Network Operators Association (TAMNOA).

Figure 23

Summary of mobile money interoperability in Tanzania

Source: 2023 GSMA in-country key informant interviews in Tanzania and desk research.

Technical model of interoperability	Bilateral agreements and a Global Payment Hub, currently transitioning to the Global Payment Hub
Technical infrastructure operator	TIPS – Bank of Tanzania (BOT)
Year of launch	Bilateral (2014), TIPS (2022)
Ownership model	Fully owned by the BOT
Number of banks involved	39
Number of financial service providers involved	6
Key mobile money providers	Airtel, Vodacom, Tigo Pesa, T-Pesa
Primary interoperable use cases	P2P, W2B, B2W, G2P, P2B, B2B, Merchant payments

The financial ecosystem in Tanzania is transitioning from legacy bilateral interoperability to the TIPS global payment hub. This transition is reflected in the increasing number of interoperable transactions passing through the TIPS hub. Interoperable mobile payment volumes have grown to 16.5 million in 2022 with payment values growing to $1.1 billion in the same period (Figure 24).

Figure 24

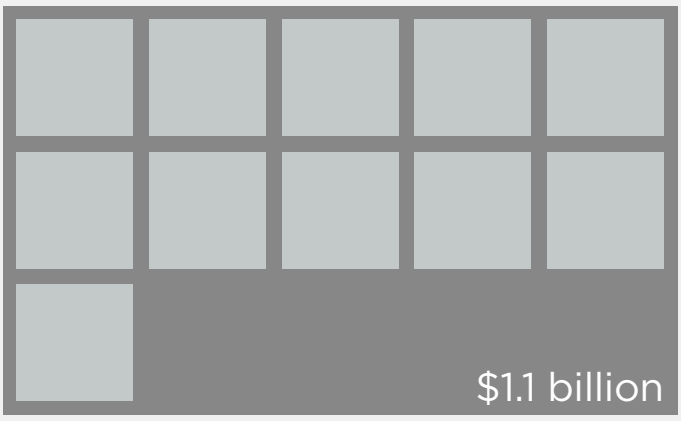
Total volume and value of TIPS interoperable mobile payment transactions, 2022[29]

Source: Bank of Tanzania.

TIPS interoperable mobile payments volume
million



TIPS interoperable mobile payments value
US Dollars, billion



29 Bank of Tanzania. (2023). Payment Systems Overview.

Interoperability model benefits

A single connection

TIPS provides a single connection to all financial service providers, reducing the complexity of managing multiple bilateral agreements and technical integrations. TIPS facilitates the standardisation of protocols and procedures, ensuring consistency across numerous financial service providers.

Potential for enhanced use cases

The forward-looking direction of TIPS indicates that cross-border transactions will eventually pass through the hub, allowing for better price control and monitoring by the BOT.

Full interoperability since 2014

For one provider, sending money to other mobile money providers represents 10% of their global interoperable transactions. Their overall interoperable transactions (sending and receiving) represent up to 30% of their mobile money transactions.

Active user growth

Active users in Tanzania have grown from around 11 million in 2013 to more than 33 million in 2021.[30]

Interoperability model challenges

Hub transition complexity

Managing the transition of services from one interoperability system to another is complex. Some services such as merchant and bill payments are still connected bilaterally. Others, such as P2P and G2P transfers, are being migrated to TIPS. This migration has faced delays due to technical challenges for banks required to make upgrades and segregate services.

Single point of failure

TIPS introduces a single point of failure, as evidenced by an incident where the hub experienced downtime, preventing customers from transacting.

Customer awareness and education

Educating customers about the transition to TIPS and managing their expectations and complaints during the process is a significant challenge. Customers are often not aware of TIPS and its role, sometimes attributing issues to mobile money providers, impacting their reputation[31]. Brand reputation is at risk when TIPS experiences downtime.[32]

Operational challenges for mobile money providers

Mobile money providers sometimes suffer delays making transaction reversals and their 24-hour customer support lines are not always available.

Regulatory challenges for mobile money providers

One provider explained how the introduction of levies and the lack of involvement by the central bank is likely to have caused an up to 40% loss of revenue. Mobile money transaction levies were removed in June 2023.

30 GSMA. (2014). Enabling mobile money policies in Tanzania; GSMA. (2021). Tanzania mobile money levy impact analysis.
31 Based on key informant interviews in Tanzania.
32 Based on key informant interviews in Tanzania.

The interoperability model in Tanzania: Commercial successes and challenges

Interoperability pricing parameters

Tanzania's interoperability model is transitioning from a bilateral model to a global payment hub (Figure 25). According to mobile money providers, the bilateral model is simpler, while the hub requires more expertise. Mobile money providers expect low profitability within the hub, when compared to the bilateral model. However, they also expect transaction growth and more business opportunities. As well as consumer affordability, TIPS brings the benefit of one single connection to many financial service providers at no cost for the short- to medium-term. This may help the BOT to achieve its financial inclusion objective.

Figure 25

Interoperability pricing parameters

Source: 2023 GSMA in-country key informant interviews in Tanzania and desk research.

MOBILE MONEY PROVIDER COSTS

Type of cost	Costs
Platform access	No fees, fully subsidised by TIPS
Switching	No fees, fully subsidised by TIPS
Interchange	• Receiving mobile money provider pays interchange • In the hub model, interchange on P2P is enforced by the Bank of Tanzania (BOT) (W2W: 0.6%, W2B/B2W: 0%) • In the bilateral model, the interchange depends on one-to-one agreements

MOBILE MONEY PROVIDER REVENUE

Type of revenue	Revenue
Surcharge	Client surcharge is between 2% and 6%. It depends on the mobile money providers and on the type of transactions. There is no mandate from the BOT yet. The surcharge is higher for transactions from mobile money providers to banks than for transactions between mobile money providers.
Interchange	Sending mobile money provider receives interchange

Interoperability commercial benefits and challenges for mobile money providers

The Tanzanian model of mobile money interoperability is evolving and innovating: from being the first to deploy full mobile money interoperability, to the development of a global payment hub for the whole ecosystem. The BOT has also shown its capacity to integrate the ecosystem's interests, as seen with the reduction of levies and the role of TAMNOA for governance. Implementing TIPS may help to develop new use cases and opportunities. On the other hand, TIPS may have an impact on the commercial sustainability of mobile money providers as it could harmonise pricing and interchange fees, directly impacting mobile money providers' business models. Providers tend to rely on fees unlike other financial service providers that may have various revenue streams.

Commercial benefits

Customer reach and new revenue streams

Interoperability, especially through TIPS, allows mobile money providers to reach a wider pool of customers by connecting to many financial service providers. This can lead to growth. The ability to facilitate various types of transaction, including cross-border transactions might open new revenue streams. The onboarding of participants is ongoing however, TIPS already processes 1 million transactions per day which are increasing, month-on-month, by 20% to 30% as of September 2023.

Transaction growth

The introduction of interoperability has been shown to stimulate further transacting, benefiting mobile money providers in the long run. At one mobile money provider, due to interoperability, P2P on-net transactions increased seven-fold within the first year of operations.

Commercial challenges

Price and profitability concerns

Transitioning to TIPS, where pricing might be set by regulatory bodies, raises concerns about maintaining profitability while also ensuring customer satisfaction. Managing interchange fees, especially with the transition to a fixed amount or percentage in the hub, impacts revenue calculations and pricing strategy. Reaching an agreement on P2P interchange took almost a year and no agreement on merchant payment interchange has been found at the time of this study.

Regulatory challenges and levies

Regulatory challenges and the introduction of levies significantly impacted provider revenues, necessitating adjustments and negotiations. According to mobile money provider data analysed by the GSMA, the average transaction fee as a percentage of transaction value for a P2P off-net transaction of $18 reached around 6% in July 2021.[33] Mobile money transactions levies were subsequently removed in June 2023.



33 GSMA. (2023). Tanzania mobile money levy impact assessment.

Conclusion



The journey ahead for mobile money provider success in interoperability initiatives

The commercial sustainability of mobile money providers in interoperability initiatives hinges on strategic market positioning, customer satisfaction and the cultivation of long-term partnerships. It is essential to diversify revenue sources, extend beyond mere transaction fees and manage costs effectively while aligning with regulatory standards and financial inclusion goals. In mature markets, interoperability is increasingly viewed not as a source of revenue but as a means to bolster sustainability through service diversification and enhanced user engagement. Interoperability initiatives should be financially structured to at least cover cost of sales, ensuring they contribute to the overall financial health of the service.

As central banks increasingly steer the course of mobile money interoperability, their crucial role extends beyond regulation to ensuring equitable practices that recognise the diverse operational models within the ecosystem. By crafting balanced pricing structures and guiding the interoperability implementation process, central banks can foster a fair competitive landscape that tempers the dominance of larger entities and supports a harmonious market environment for mobile money providers and banks alike. Today's trend of including mobile money providers in governance and decision-making processes is vital and should be reinforced. This can ensure that fair business models are developed, particularly for non-standard interoperability use cases, where providers' unique insights and needs can be considered effectively.

Central banks provide robust infrastructure for interoperability, enhancing efficiency and connectivity. Yet, their remaining vigilant can avoid creating single points of failure that could disrupt the entire system. Central banks could seek to include third-party entities in the interoperability framework to harness their creativity and agility, and guide the development of inclusive digital financial services. For instance, Tanzania, Pakistan, Nigeria and Indonesia have either implemented systems that align with third-party entity principles or have engaged in discussions and are planning to incorporate these principles into their financial infrastructure. Such solutions show that there are different ways to make interoperability work, and that the financial world is moving fast when it comes to cross-border payments and the use of machine learning and artificial intelligence.

Looking ahead, the future for mobile money providers in the interoperability landscape is ripe with opportunity. As they navigate the complexities of an evolving financial ecosystem, mobile money providers are well-positioned to harness interoperability as a springboard for innovation, customer engagement and expanded service offerings. The proactive involvement of central banks in fostering a fair and balanced interoperability framework will further empower mobile money providers to thrive, ensuring that their journey towards enhanced commercial sustainability is marked by strategic growth and collaborative success.

To aid mobile money provider discussions with interoperability hubs, download the GSMA interactive tool. It allows providers to calculate their costs and revenue streams associated with interoperability initiatives.[34]

34 GSMA. (2024). GSMA mobile money provider interoperability cost and revenue modelling tool.

Strategic implications and recommendations

- **Strategic pricing:** To allow mobile money providers (MMPs) to cover their costs and innovate without eroding their customers' loyalty, hub operators need to set a reasonable pricing structure, especially in comparison to prices set for banks.
- **Operational overlap:** Interoperability tends to leverage existing mobile money infrastructure, allowing some costs to be efficiently absorbed into the broader operations of MMPs, impacting/ reducing the true cost of interoperability.
- **Beyond revenue:** In mature markets, interoperability is leveraged by MMPs as a strategic tool for expansion and partnership rather than as a direct source of revenue.
- **Governance models:** This study recommends a shared governance model that elevates the voice of MMPs in decision making for interoperability hubs. This is likely to help all ecosystem stakeholders by ensuring pricing is sympathetic to all, particularly MMPs.
- **Stakeholder balance:** This study advocates for equitable interchange models and collaborative approaches to balance the interests of MMPs and banks.
- **Looking ahead:** This study recommends MMPs and regulators collaborate continuously to define a commercially sustainable interoperability model aligned with increasing and deepening financial inclusion.

Appendices



Methodology

Report on the commercial sustainability of mobile money providers in interoperability initiatives

Based on prior engagement with the mobile money industry and nationally representative quantitative research results, key informant interviews were carried out between August and October 2023 with subject matter experts in interoperability from central banks, national switches, commercial banks, fintechs, mobile money providers and banking associations in six countries: Ghana, Jordan, Pakistan, Rwanda, Tanzania and Uganda (Figure 26). A total of 21 interviews were conducted, each with various specialists in attendance. Thorough desk research was also carried out to review relevant literature and data sets and to supplement the interview insights during analysis.

GSMA mobile money provider interoperability cost and revenue modelling tool

Employing a data-driven approach, this study leveraged supply and demand side data sets on mobile money and interoperability pricing and revenue and built a model within a Microsoft Excel-based tool that assesses the commercial sustainability of mobile money providers in interoperability initiatives.

Mobile money

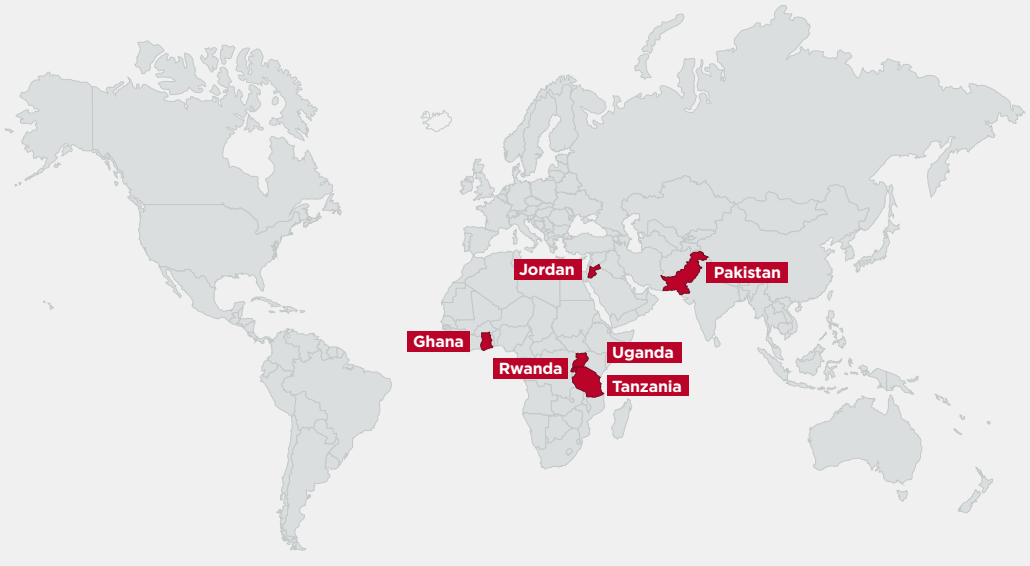
A service is considered a mobile money service by the GSMA if it meets the following criteria:

- A mobile money service includes transferring money and making and receiving payments using a mobile phone.
- The service must be available to the unbanked, for example, people who do not have access to a formal account at a financial institution.
- The service must offer a network of physical transactional points which can include agents, outside of bank branches and ATMs, that make the service widely accessible to everyone. The agent network must be larger than the service's formal outlets.
- Mobile banking or payment services (such as Apple Pay and Google Pay) that offer the mobile phone as just another channel to access a traditional banking product are not included.
- Payment services linked to a traditional banking product or credit card, such as Apple Pay, Google Pay and Samsung Pay, are not included.

Figure 26

Location of interoperability initiatives in this research

Source: GSMA



Definitions

API	Application Programming Interface
ATM	Automated Teller Machines
B2B	Business to Business
BoG	Bank of Ghana
BoT	Bank of Tanzania
B2P	Bank to Person
B2W	Bank to Wallet
CBJ	Central Bank of Jordan
CGAP	Consultative Group to Assist the Poor
FSPs	Financial Service Providers
GhIPSS	Ghana Interbank Payment and Settlement Systems Limited
GHS	Ghanaian Cedi
GIP	GhIPSS Instant Payment
GIS	Ghana Interbank Settlement
G2P	Government to Person
JOD	Jordanian Dinar
JoMoPay	Jordan Mobile Payments
JoPACC	Jordan Payments and Clearing Company
LMICs	Low- and Middle-Income Countries
MENA	Middle East and North Africa
MMI	Mobile Money Interoperability
MMP	Mobile Money Provider
P2B	Person to Business
P2G	Person to Government
P2P	Person to Person
PSAC	Payment Systems Advisory Committee
PSP	Payment Service Provider
QR code	Quick Response code
SLA	Service Level Agreement
TAMNOA	Tanzania Mobile Network Operators Association
TIPS	Tanzania Instant Payment System
TZS	Tanzanian Shilling
USD	US Dollar
W2B	Wallet to Bank
W2W	Wallet to Wallet

GSMA Head Office
1 Angel Lane
London EC4R 3AB
United Kingdom

Tel: +44 (0)20 7356 0600
Fax: +44 (0)20 7356 0601

