



THE STATE OF INCLUSIVE INSTANT PAYMENT SYSTEMS IN AFRICA

SIIPS 2023

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About this report

The State of Inclusive Instant Payment Systems in Africa 2023 (SIIPS 2023) is in its second edition and will be repeated annually. The report aims to inform public-sector and private-sector players in Africa and beyond about the developments in the instant retail payment system (IPS) ecosystem in Africa, including an assessment of the inclusivity of such systems, both in functionality (accessible to all end-users) and governance (all licensed payment providers have fair

access and design input opportunities). For this report, only systems with live transactions and functionality as of June 2023 were included. The data in this report was gathered from publicly available resources and data shared by select central banks and switch operators in Africa from January to June 2023. It was supported by extensive stakeholder interviews during the same period. The consumer research was conducted between February and March 2023.

FOREWORDS

Dr. Robert Ochola,
Chief Executive Officer AfricaNenda



Africa continues to make strides in the growth of digital financial services (DFS) as innovation and regulatory shifts shape the landscape. Digital payments are unleashing a technology revolution, supported by financial service stakeholders who are innovating and collaborating to unlock both domestic and cross-border socio-economic opportunities for Africans. In most of the markets, however, households and small businesses over-rely on cash, especially for daily low-value transactions.

There are other prevailing challenges in the financial services sector as well. Over 400 million African adults are financially excluded. This points to the need to support the growth of DFS on the continent with investments in infrastructure, technology, technical skills, policy, and regulatory reforms, aimed at ensuring responsible access and usage of financial products and services.

AfricaNenda supports these needs through its mandate of driving financial inclusion in Africa through the deployment of inclusive instant payment systems (IIPS). AfricaNenda embraces a collaborative approach to working with other stakeholders within the payment ecosystem. Indeed, the words of the 'the Old Master' and philosopher Lao Tzu ring true, 'Do the difficult things while they are easy and do the great things while they are small. A journey of a thousand miles must begin with a single step'.

AfricaNenda is pleased to present the second edition of its flagship annual report, The State of Inclusive Instant Payment Systems (SIIPS) in Africa 2023.. The SIIPS 2023 report aims to deepen insights and learnings around the development of inclusive instant digital retail payment systems in Africa. The first publication was well received by stakeholders in the payments industry and continues to be a critical resource for initiatives toward boosting payments infrastructure in the continent. It revealed priority areas in digital payments for Africa and promoted collaborative initiatives. The SIIPS 2022 map and data dashboard provided an easy way for IPS stakeholders to visualize instant payment system data from across the African continent, at regional and country levels. Insights from the SIIPS 2022 deliverables continue to inform decisions about enabling policies and regulations, and efficient IIPS implementation.

“DO THE DIFFICULT THINGS
WHILE THEY ARE EASY AND DO THE
GREAT THINGS WHILE THEY ARE SMALL.
A JOURNEY OF A THOUSAND MILES
MUST BEGIN WITH A SINGLE STEP.”

— Lao Tzu, philosopher

AfricaNenda developed the SIIPS 2022 inaugural edition in part to overcome the huge gap of data and information about the infrastructure that supports instant retail payments on the continent. The report also, for the first time, highlighted levers to inclusivity that can promote end-user access and usage of DFS. We encourage Africa's digital payments industry stakeholders to contribute to narrowing the information gap on IIPS in the continent by sharing data, embracing accurate reporting, and conducting continuous data analytics on instant retail payment transaction volumes and values. These initiatives will ensure that the broader market can accurately track progress in IPS access and usage, and that stakeholders—including policymakers and regulators—have evidence-based insights and learnings to help determine the most appropriate and cost-effective strategies for reaching low-income individuals.

The State of Inclusive Instant Payment Systems in Africa 2023 edition expands upon the inaugural insights into the state of the IPS landscape. In this edition, we highlight changes in the availability of IPS at country and regional levels, the different types of IPS that exist, and how central banks, and the private sector each play key roles. The report emphasizes the inclusivity positioning of each operational IPS, which is critical if they are to provide the payment layer of digital public infrastructure in Africa, a necessary enabler of an inclusive digital economy (along with consent networks, digital ID, and trusted exchange). The report also includes findings from consumer and MSME end-user surveys on digital payments usage, which validate the importance of functionality and the extent to which IPS support use cases and trust as key IPS design considerations that drive inclusivity.

Lastly, the 2023 report showcases critical considerations to unlock cross-border payments through policy and regulatory harmonization. A harmonization framework for the continent could reduce the complexity and facilitate greater competition, which ultimately could lead to cheaper, faster, and more accessible cross-border digital payment options for customers. The resulting increase in scale and accessibility of cross-border payments would support crucial continental agendas, such as digital trade under the African Continental Free Trade Area (AfCFTA)

mandate, the African Union Digital Transformation Strategy, and the sustainable development goals.

Continental collaboration structures and agreements are essential to unlock cross-border payments through policy and regulatory harmonization. The African Union has a key role to play in elevating this agenda with heads of state to support the structures that would foster regional strategies, programs, and collaboration between the central banks, data protection authorities, regional economic communities (RECs), and monetary unions, among others.

AfricaNenda together with its partners The World Bank Group and the United Nations Economic Commission for Africa (UNECA) appreciate the overwhelming support we have received in developing and delivering the SIIPS 2023 report. Specifically, we appreciate all the stakeholders that shared data as part of our data availability, data transparency, and data impact campaign for the continent. They include the central banks and IPS operators of the Central African Economic and Monetary Community (CEMAC), Ghana, Madagascar, Malawi, Mozambique, Rwanda, South Africa, Zambia, and Zimbabwe. There remains a scarcity of available data and information, however. As a result, AfricaNenda had to rely on a mix of publicly available data and information instead of accessing these directly from institutions. We continue to advocate for the sharing of more data, more collaborations towards fulfilling Africa's digital public infrastructure needs, and enhanced cross-border transactions, for the benefit of all Africans.

AfricaNenda will continue to work with governments, central banks, Regional Economic Communities, development agencies, the private sector, and all DFS stakeholders to reduce the barriers to financial inclusion. We welcome collaborators to support the development of inclusive instant payment systems. We will continue our efforts to provide critical pre-project planning and program management support to expand IIPS projects, advocate for critical policy reforms, and enhance the capacity of African institutions and payments industry experts. We believe in our vision of universal financial inclusion in Africa by 2030, and we acknowledge the critical role that partnerships play in achieving it.

Michael Wiegand, PhD
 Director, Financial Services for the Poor,
 Bill & Melinda Gates Foundation



The State of Inclusive Instant Payment Systems (SIIPS) in Africa report is the most detailed and insightful report on instant payment systems available today, and we at The Bill & Melinda Gates Foundation are proud to support this report and AfricaNenda.

The pace of progress in instant payment systems (IPS) is astounding and nowhere more so than across Africa. As of 2022, thirty-two IPS have been deployed across the continent, and 17 countries are in early development stages. But not all IPS are inclusive, as this report points out. To truly advance financial inclusion, these systems must be designed and deployed in a way that includes everyone, protects consumers, and bolsters competition and innovation. This report includes a framework to assess and guide the inclusivity of IPS, and highlights exemplar country and regional deployments that other countries can look to for inspiration and insight. It also highlights the critical opportunity for development and philanthropic organizations to support countries in these efforts through financial and technical assistance.

Much of the world is starting to focus on the incredible power of IPS as a foundational part of a digital public infrastructure (DPI). This is evidenced by the focus on DPI from the G20 this year, under India's leadership, as

well as in other international fora, including the United Nations General Assembly and the World Bank Annual Meetings. We are also seeing more collaboration between countries who are on their DPI journeys, such as with the new 50-in-5 global campaign, which aims for 50 countries to design, launch, and scale at least one DPI component in a safe and inclusive manner within five years. One of the most important and clearest ways to help achieve this goal is through IPS implementation in countries across Africa.

What would have seemed like only a dream a few years ago—interconnected inclusive instant payment systems across every country in Africa—is now within reach. The impacts of this development on financial inclusion, remittances, trade, and overall inclusive economic growth are starting to be realized, yet there is so much more to be imagined. We must all rise to the occasion to keep up this incredible momentum and the SIIPS 2023 report provides a clear roadmap of how we can make this happen.

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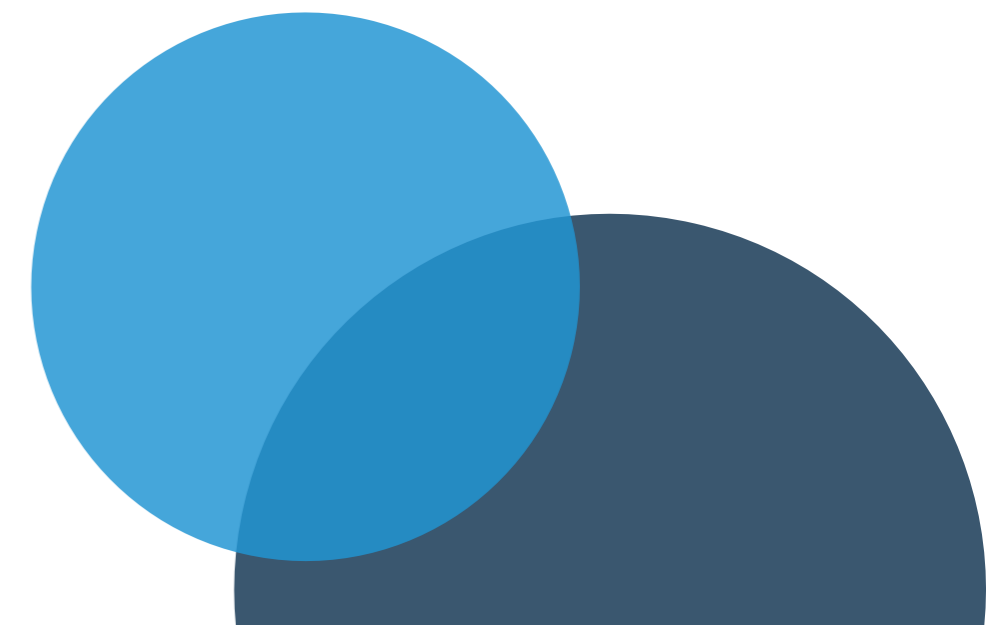
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ACRONYMS

AACB	Association of African Central Banks
ADLA	Authorized dealers in foreign exchange with limited authority
AFCFTA	African Continental Free Trade Area
AFI	Alliance for Financial Inclusion
AFR	Access to Finance Rwanda
AI	Artificial intelligence
AML	Anti-money laundering
API	Application programming interface
ASEAN	Association of Southeast Asian Nations
ATM	Automated teller machine
AU	African Union
B2B	Business-to-business
BAM	Bankers Association of Malawi
BCEAO	Banque Centrale des États de l'Afrique de l'Ouest
BEAC	Banque des États de l'Afrique Centrale
BIS	Bank for International Settlements
BNR	National Bank of Rwanda
BOG	Bank of Ghana
BoP	Balance of payments
BOZ	Bank of Zambia
CBC	COMESA Business Council
CBDC	Central bank digital currency
CBN	Central Bank of Nigeria
CCAF	Cambridge Centre for Alternative Finance
CCBG	Committee of Central Bank Governors
CDD	Customer due diligence
CEMAC	Economic and Monetary Community of Central Africa
CFT	Combatting of financing of terrorism

CMA	Common Monetary Area
COBAC	Commission Bancaire de l'Afrique Centrale
COMESA	Common Market for Eastern and Southern Africa
CoS	College of Supervisors
COSUMAF	Central African Financial Market Supervisory Commission
CPF	Combatting of proliferation financing
CPMI	Committee on Payments and Market Infrastructures
DEPA	Digital Economy Partnership Agreement
DFS	Digital financial service
DIAL	Digital Impact Alliance
DNS	Deferred net settlement
DPI	Digital public infrastructure
DPO	Direct Pay Online
DRC	Democratic Republic of the Congo
EABC	East African Business Council
EAC	East African Community
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
EECA	Eastern Europe and Central Asia
EFT	Electronic funds transfer
e-ID	Electronic identity
eKYC	Electronic know your customer
EMV	Europay, MasterCard, and Visa
ERCA	ECOWAS Regional Competition Authority
ESAAMLG	Eastern and Southern Africa Against Anti-Money Laundering Group
EU	European Union

FATF	Financial Action Task Force
FCCG	Financial Crime Compliance Group
FPS	Fast payment system
FSAP	Financial Service Action Plan
FSTAP	Financial Sector Technical Assistance Project
G2P	Government-to-person
GABAC	Groupe d'Action contre le Blanchiment d'argent en Afrique Centrale
GDP	Gross domestic product
GhIPSS	Ghana Interbank Payment and Settlement System
GIABA	Inter-Governmental Action Group against Monetary Laundering in West Africa
GIMAC	Groupement Interbancaire Monétique l'Afrique Centrale
GIP	GhIPSS Instant Pay
GNI	Gross national income
HDCT	Human Development Cash Transfer
ICT	Information and communications technology
ID	Identity document
IDI	In-depth interview
IGAD	Intergovernmental Authority on Development
IIPS	Inclusive Instant Payment System
IMF	International Monetary Fund
IPS	Instant payment system
ISO	International Organization for Standardization
KYC	Know your customer
LCSF	Local Currency Settlement Framework
LEAP	Livelihood Empowerment Against Poverty

MAD	Moroccan Dirham
MAS	Monetary Authority of Singapore
MauCAS	Mauritius Central Automated Switch
MFI	Microfinance institution
ML	Money laundering
MMI	Mobile money interoperability
MMO	Mobile money operator
MNO	Mobile network operator
MOU	Memorandum of understanding
MSME	Micro, small, and medium enterprise
NFC	Near-field communication
NFS	National Financial Switch
NIBSS	National Inter-Bank Settlement System
NIP	NIBSS Instant Payment
NSSF	National Social Security Fund
OBSSA	Ombudsman for Banking Services in South Africa
OMAC	Office monétique de l'Afrique Centrale
P2B	Person-to-business
P2P	Person-to-person
PAN	Payments Association of Namibia
PAPSS	Pan-African Payment and Settlement System
PF	Proliferation financing
POS	Point-of-sale
PPP	Public-private partnership
PSD	Payment Service Directive
PSOC	Payment Service Oversight Committee
PSP	Payment service provider
QR	Quick response

RBM	Reserve Bank of Malawi
REC	Regional economic community
RIPPS	Rwanda Integrated Payments Processing System
RNDPS	Rwanda National Digital Payments System
RSP	Remittance service provider
RTC	Real-time clearing
RTGS	Real-time gross settlement
RURA	Rwanda Utilities Regulatory Authority
SADC	Southern Africa Development Community
SARB	South African Reserve Bank
SDG	Sustainable development goal
SEPA	Single Euro Payments Area
SIIPS	State of Inclusive Instant Payment Systems
SIM	Subscriber identity module
SIMO	Sociedade Interbancaria De Mocambique
SLA	Service-level agreement
SMAC	Société monétique de l'Afrique Centrale
SS7	Social Signalling 7
SSA	Sub-Saharan Africa
SYGMA	Système de gros montants automatisé
SYRAD	Système de règlement automatisé de Djibouti
SYSTAC	Système de télécompensation en Afrique Centrale

TCIB	Transactions Cleared on an Immediate Basis
TF	Terrorist financing
TIPS	Tanzania Instant Payment System
UMA	Union of Arab Maghreb
UN	United Nations
UNECA	UN Economic Commission for Africa
USA	United States of America
US\$	United States Dollar
USSD	Unstructured supplementary service data
VASP	Virtual asset service provider
WAEMU	West African Economic and Monetary Union
WAIFEM	West African Institute for Financial and Economic Management
WAMA	West African Monetary Agency
WAMI	West African Monetary Institute
WAMZ	West African Monetary Zone
XAF	Central African Franc
XOF	West African Franc
ZAR	South African Rand
ZECHL	Zambia Electronic Clearing House Limited
ZIPIT	Zimswitch Instant Payment Interchange Technology

GLOSSARY OF TERMS



All-to-all interoperability

Ability to link bank accounts to mobile wallets and vice versa, bank accounts to bank accounts, and mobile wallets to mobile wallets to transfer value.



Agents

Informal and formal service points where customers can access bank and non-bank services, such as cash-in or cash-out, and pay for goods and services (FinMark Trust 2019).



Automated teller machine

Computerized telecommunications devices that provide financial institution clients with access to financial transactions in a public place (World Bank 2020b).



App

A mobile app is a front-end, in-between service that authorizes and processes payments between a user's payment portal (mobile device) and a vendor's bank or financial intermediary, including non-banks. It performs the encryption of cardholder data, authorization of payment requests, confirmation of purchases, and so on (Slesar 2022).



Available

A system is available for use 24 hours a day, 365 days of the year, excluding planned maintenance or system downtime.



Balance of payments (BoP)

The BoP is a statistical statement that summarizes transactions between residents and non-residents during a given period. The BoP statement provides a clear picture of the economic relations between different countries and consists of three main components: current accounts, capital accounts, and financial accounts (UNCDF 2022c).



B2B payments

Definition term for the purpose of this report: Smaller-value transfers between businesses, especially MSME businesses, i.e., not wholesale payments.



Bank IPS

Typology term for the purpose of this report. A system that only provides access for banks and that supports instruments associated with bank accounts, including microfinance banks.



Bilateral prefunding

When “nostro” accounts are prefunded by connected payment service providers. These accounts are then debited as transactions occur between parts of connected providers (CGAP 2021).¹



Bill payments

A payment made by a person from their bank, mobile money accounts, or other financial stores of value, to a biller or billing organization via a digital payment platform in exchange for the services provided (GSMA 2021a).



Branch

A bank's storefront location with a bank teller that handles cash deposits, withdrawals, and payment for goods and services.



Browser

Access for a consumer to make a payment electronically via a web page, linking the payer to the account details of their bank or financial service provider.



Central bank IPS

Typology term for the purpose of this report. The IPS is governed by the central bank.



Central bank digital currency (CBDC)

A digital form of a central bank liability, denominated in an existing unit of account, which serves both as a medium of exchange, a store of value, and a means of payment. CBDC may be transferred either on a peer-to-peer basis or through an intermediary, which could be the central bank, a commercial bank, or a third-party agent (BIS 2018a).



Credit card

A payment instrument linked to a credit facility through a card channel and network, with defined acceptance rules, specified functionality, and consumer redress protocols for the channel.



Credit electronic funds transfer (EFT)

The message created whenever a payment instruction via various delivery channels (for example, the internet) is issued, crediting a customer's transaction account, to make an electronic payment to a third party (PASA 2022a). Credit EFTs are therefore by definition push payments.



Cross border

The movement of funds between financial institutions within two distinct countries. The cross-border transaction, which can be a range of payment use cases, often requires intermediaries operating in multiple jurisdictions (BIS 2021).



Cross-domain IPS

Typology term for the purpose of this report. A system that provides for all-to-all interoperability where switching, clearing, and exchanging instruments is contained within one overarching system. Cross-domain systems provide access to banks and non-banks and support transactions from both bank accounts and mobile money accounts. All-to-all interoperability includes the ability for end-users to directly transact between wallet accounts at different mobile money operators (MMOs), between mobile money accounts and bank accounts, and across bank accounts. Within one system, there are different rules to accommodate various instruments. The single system provides the governance framework and coordinates the operational functions end-to-end for the various instruments (GSMA 2014).



Debit card

A payment instrument linked to a depository account, such as an on-demand deposit, savings, or transfer account. It can be used to make both debit and credit transactions between accounts, as well as between cards (PASA 2022b). Although technically a pull payment, the locus of control is often with the payer, meaning debit cards can essentially function as a push payment.

¹ Nostro accounts are accounts owned by one financial institution but housed within another, where the financial institution could be a bank, MMO, or other payment service provider with stored-value accounts.



Debit EFT

A payment instrument that allows the recipient to collect money from the sender's transaction account without the sender having to do anything but provide written, electronic approval through a debit order mandate (PASA 2022b). Debit EFTs are, by definition, pull payments.



Deferred net settlement

The process whereby transaction obligations are netted off and only the balance is settled at a later stage according to a predefined cycle, either daily or more frequently (World Bank 2021b).



Deposit-taking institution

Deposit-taking institutions include those, in the normal course of business, which solicit the acceptance of liquid (fungible) deposits from the public, subject to a contract of deposit, for the purpose of intermediation (co-mingled on the institutions balance sheet and applied to the acquisition of different asset classes and activities). Deposit-taking institutions may or may not facilitate payments and other financial services on behalf of their customers.



Digital

IPS definition term for the purpose of this report. A system that is electronic with services that are accessible on digitally enabled devices.



Digital public good

Digital public goods are open-source software, open data, open AI models, open standards, and open content that adhere to privacy and other applicable laws and best practices, do no harm by design, and help attain the Sustainable Development Goals (SDGs; Digital Public Goods Alliance 2023).



Digital public infrastructure

Digital solutions and systems that facilitate essential society-wide functions and services such as:

- Identification: the ability for people and businesses to securely verify their identity, as well as complementary trust services such as electronic signatures and decentralized, verifiable credentials.
- Payments: transferring money between people, businesses, and governments.
- Data exchange: flow of data across government and the private sector, with safeguards for personal data protection, including consumer consent (World Bank 2023a).



Direct system participant

Licensed PSPs governed by the same scheme rules, and who are connected directly to the switching infrastructure.



E-money

An electronically transactable currency instrument and a claim against a licensed e-money issuer, supported by commercial bank deposits or by a direct claim upon a commercial bank.



Emerging market segment

Lower-income people and MSMEs based in urban and peri-urban areas.



Fintech company

Financial technology company aiming to replace or enhance financial services provided by existing financial institutions.



Harmonization

Regulatory bodies in two or more countries agree to a set of regulatory frameworks/standards and/or establish a similarity in processes/services.



Indirect system participant

Payment value chain participants who do not have a technical integration with the central switch or settlement services and participate in the system via an integrated PSP/direct system participant.



Inclusive instant payment system

Inclusive instant payment systems process retail transactions digitally in near real-time and are available for use 24 hours a day, 365 days a year, or as close to that as possible. They enable low-value, low-cost push transactions that are irrevocable and based on open-loop and multilateral interoperability arrangements. Licensed payment providers have fair access to the system, and participants have equal input opportunities into the system. The central bank has a role in system governance. End-users have access to a full range of use cases and channels, as well as transparent and fit-for-purpose recourse mechanisms.

	IPS are retail payment systems that are multilateral and open loop and that enable digital push payments in near real time for use 24 hours a day, 365 days a year, or as close to that as possible.
Instant payment systems	
	Monetary transfers between two business entities. The payment size ranges from large-value payments associated with large intra-industry transactions to retail payments between micro, small, and medium enterprises (the focus of this report)—for instance, payment for inventory supplies provided by one business to another (World Bank 2020a).
Inventory and business services	
	Transactions cannot be reversed by the payer in the normal circumstances of business. Exceptions may exist for specific consumer recourse events (for example, fraudulent or erroneous transactions).
Irrevocable	
	Introduced in 2004, ISO 20022 has become the standard exchange for new instances of electronic messaging and is used by most financial service providers for payment as well as non-payment transactions (World Bank 2021h).
International Organization for Standardization (ISO) 20022	
	The most common messaging standard for card payments, ISO 8583 was established by the ISO in 1987 (World Bank 2021h).
ISO 8583	
	Where the central bank and private participants own the infrastructure jointly (World Bank 2021f).
Jointly owned	
	IPS definition term for the purpose of this report. Transactions of less than \$5.
Low-value payments	

	Retail payments associated with the purchase of goods and services from a business, irrespective of the size, where the payer is a consumer and the payee is a business (World Bank 2021b).
Merchant payments	
	A service in which a mobile phone is used to access financial services, where value is stored virtually in a transaction account issued by an e-money issuer.
Mobile money	
	A system that only provides access to mobile money providers and that supports instruments associated with mobile money accounts.
Mobile money IPS	
	A mobile network operator, or an entity that has partnered with a mobile network operator, that provides mobile money services, a pay-as-you-go digital medium of exchange and store of value that operates independently of a traditional banking network (IMF 2022b).
Mobile money operator	
	The permission structure for payment instruments belonging to a given system to be used in platforms developed by other systems, including in different countries. Multilateral interoperability involves a situation in which payment instruments that belong to a given system may be used in platforms developed by other systems, including in different countries. Multilateral interoperability involves the coexistence of multiple attributes, which can be combined in various ways. These attributes fall into three broad dimensions: technical, semantic, and business interoperability (BIS 2021). ² The nature of the business interoperability rules determines whether a payment system is multilateral, but does not dictate the number of providers, platforms, systems, or jurisdictions.
Multilateral interoperability	
	A standards-based, short-range (a few centimeters) wireless connectivity technology that enables simple and safe two-way interactions between electronic devices, allowing consumers to perform contactless transactions, to access digital content, and to connect electronic devices with a single touch (BIS 2020).
Near-field communication	

² Technical interoperability involves the technical connections and exchange of data, whereas semantic interoperability requires data to be interpreted and acted upon consistently (BIS 2021). Business interoperability involves commercial agreements that provide standing rules and assurances for the exchange of different commercial instruments and associated risks between different schemes, platforms, and participants, including in different jurisdictions (World Bank 2012).



Network effect

Overall utility of digital payment products and services depends on the number of individuals, businesses, and entities using it: the more users adopting a product, the more value each user receives (Giuliani 2022).



On-us transaction

Transactions that stay within one PSP's core processing platform and on an internal subsidiary ledger without clearing or settling between separate financial institutions. It is an internal transaction between customer accounts within a single financial institution or within a financial services group.



Open application programming interface

The method for software programs to communicate with one another that is designed to conform to published data formats and standards and is made widely available, allowing other companies to integrate seamlessly into the payment system (CGAP 2022).



Open loop

At least a multilateral or third-party transparent interoperability arrangement, excluding closed-loop, on-us systems.



Overseer

A person who continually monitors the system and assesses how safely and efficiently it is operating (BIS 2016). They are responsible for assessment and monitoring of the system and enforcement of laws and regulations to promote safe and efficient payments. The system overseer can enforce policy mandates and is the main arbitrator of fairness or application of the scheme rules (CGAP 2021).



Participant-owned

Where the system is owned privately by its participants (World Bank 2021h).



Partially owned

Where ownership of components of the system is split between the central bank and private participants (World Bank 2021f).



Payment service provider

An intermediary that processes payments on behalf of the payer and payee.



Phishing

A technique for attempting to acquire sensitive data, such as bank account numbers, through a fraudulent solicitation in email or on a web site, in which the perpetrator masquerades as a legitimate business or reputable person (NIST 2023).



Platform operator

Responsible for transmitting payment instructions, calculating settlement positions and other operational activities, such as the daily management of systems, and processing in line with the scheme rules and governance directives. Their responsibilities also include ensuring the quality of service, operational risk mitigation, and the maintenance of standards (CGAP 2021).



Point-of-sale device

A specialized device that is used to accept the payment (for example, a card reader) at a retail location where payments are made for goods or services (GSMA 2021a).



Private-association IPS

Typology term for the purpose of this report. The IPS is governed by an association made up entirely of private-sector participants.



Proxy ID

An identifier (for example, e-mail address, mobile phone number) that may be used in lieu of the payer's or payee's transaction account information. These allow the public and the business sector to transact in a seamless manner while initiating a payment (World Bank 2021e).



Public-Private Partnership IPS

Typology term for the purpose of this report. The IPS is governed by a partnership arrangement consisting of the central bank and a representative of private IPS participants.



Pull payment

The payee initiates (pulls) the transfer of funds from the payer's account (BIS 2016).



Push payment

The payer initiates (pushes) the transfer of funds from an account to the payee (BIS 2016).



Quick response (QR) code

A square-shaped pattern consisting of a set of unique white and black blocks, representing information on the recipient or other transaction details. QR codes can be scanned by any smart device or can be entered manually into an unstructured supplementary service data to support transactions (BTCA 2021).



Real time

The value transfer is assured to be instant (within seconds).



Real-time settlement

When transactions are settled continuously as they occur (World Bank 2021b).



Recourse mechanisms

The mechanisms in place for consumers using the IPS to raise grievances and have them heard and resolved or redressed (CGAP 2013).



Regulator-owned

Where the central bank determines the procedures, and it controls the associated technical infrastructure (World Bank 2021f).



Salaries and wages

Periodic transactions from businesses to compensate employees for work rendered (for example, payroll and other compensation-related incentives) (World Bank 2021b).



Smishing

A social engineering attack that uses fake mobile text messages to trick people into downloading malware, sharing sensitive information, or sending money to cybercriminals (IBM 2023).



Social engineering

An attempt to trick someone into revealing information (e.g., a password) that can be used to attack systems or networks (NIST 2023).



Spoofing

Faking the sending address of a transmission to gain illegal entry into a secure system (NIST 2023).



Central bank e-money

A digital currency that is collateralized or guaranteed by the central bank. These classes of instruments can enable settlement processes and services across e-money and other PSP providers, including indirect access to central bank reserves. All other functions are the responsibility of private e-money providers underpinned by adequate regulation.



System governance body

Responsible for strategic direction, including any explicit inclusivity mandate (pro-poor governance), and accountability of IPS participants. Their function is related to control over scheme management (CGAP 2021).



System owner

Responsible for and entitled to receive all the benefits and risks associated with ownership of the system (BIS 2003).



Settlement agent

Responsible for moving the settlement value in commercial or sovereign currency between system participants (CGAP 2021).



SIM Toolkit

Software that is downloaded onto a SIM card that can be used to hold a mobile money application (World Bank 2011).



Social disbursements

A payment by a government to a person's transaction account, often for social disbursements, such as grant or subsidy payments (GSMA 2021b).



Sovereign currency IPS

Typology term for the purpose of this report. CBDC IPS combines a sovereign currency instrument and value transfer system that can provide a unified digital value transfer mechanism between commercial instrument systems, institutional stakeholders, and individuals within an economy.



Social Signalling 7 (SS7)

A telecommunication signaling architecture traditionally used for the set up and tear down of telephone calls. It has a robust protocol stack that uses out-of-band signaling to communicate between elements of the public switched telephone network. In recent years it has been superseded by the Diameter signaling protocol (Techopedia 2017).



Taxes and fees

Obligations that individuals pay to central, regional, and local public administrations, such as tax payments or utility payments (World Bank 2021b).



Third-party interoperability

The foundation for the interoperability of IPS participants via a centralized switching or clearing layer, facilitated by a third party. In some, but not all, countries the third party is an aggregator (CGAP 2016). The third party can be a private entity or government owned. Interoperability is achieved when providers connect to the switch.



Transaction receipts

Notifications sent to consumers, via text, email, or other communication methods, that confirm the initiation or completion of a transaction. It should include information about the digital finance service provider, the location, the amount of the transaction, and identification detail, as well as details of the counterparty (World Bank 2021b).



Transfers and remittances

Transfers of money to family members or friends without an underlying economic transaction (for example, remittances sent from one person's transaction account to another (World Bank 2021b).



Unstructured supplementary service data

Part of the Global System for Mobile Communications protocols for second-generation digital cellular networks and devices. This communication channel was adapted to accommodate financial transactions by enabling customers to send defined instructions to mobile financial services providers along with their personal identification number for authentication, while enabling the provider to send responses to clients and confirm transactions (CGAP 2015).

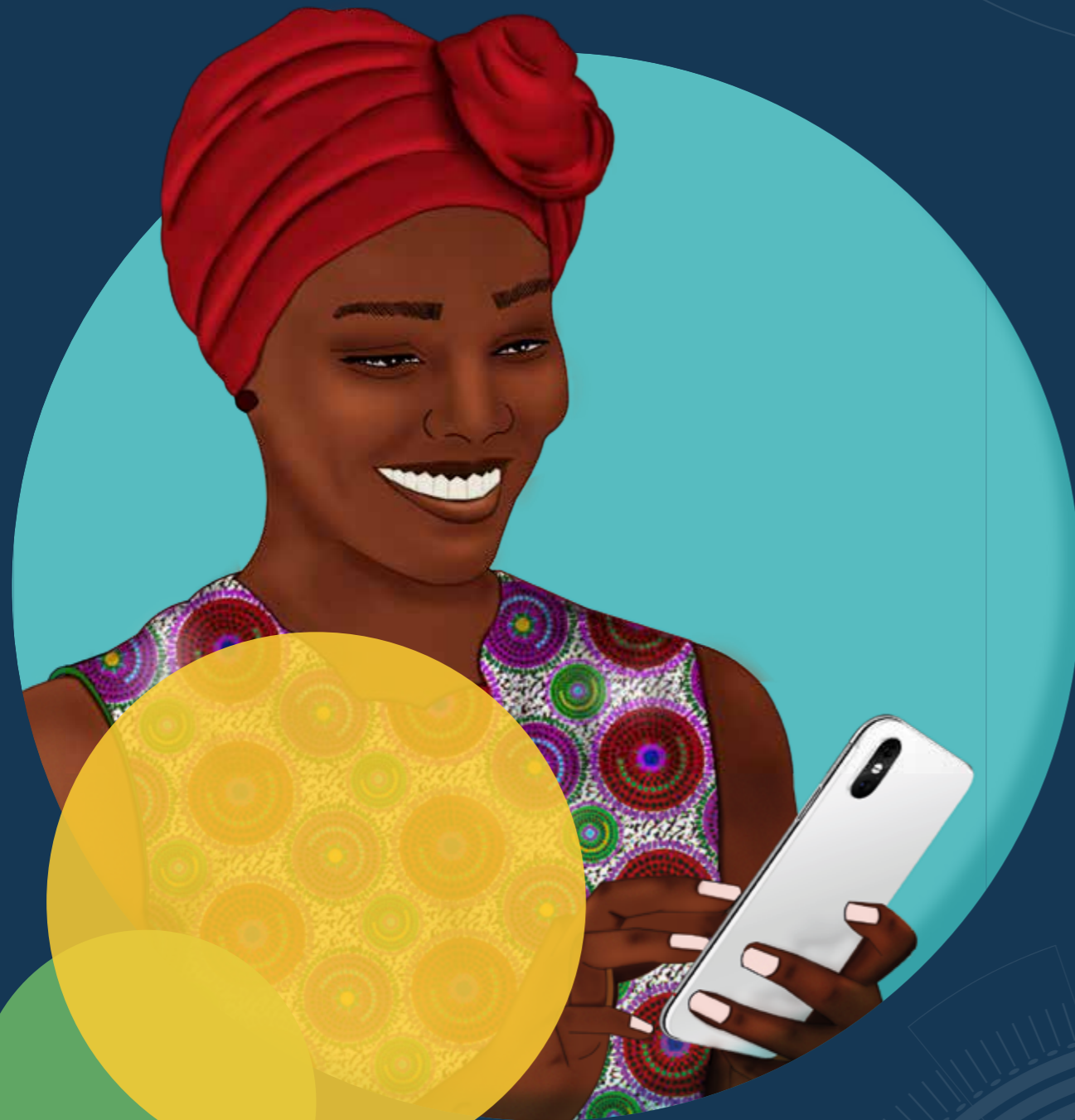


Vishing

A type of cyberattack that uses voice and telephony technologies to trick targeted individuals into revealing sensitive data to unauthorized entities (TechTarget 2023).



EXECUTIVE SUMMARY



This State of Inclusive Instant Payment Systems (SIIPS) in Africa 2023 report is published by AfricaNenda and its partners, the World Bank and the United Nations Economic Commission for Africa (UNECA). It is the second annual report to assess the landscape and inclusivity of open-loop, instant payment systems (IPS) in Africa. It combines a cataloguing of IPS in Africa with consumer research in five countries (Cameroon, Malawi, Morocco, Rwanda and Senegal), insights from expert interviews across the continent, and detailed case studies from Malawi, Rwanda, Zambia, and the Economic and Monetary Community of Central Africa (CEMAC) region, to provide an overview of key trends, barriers, and opportunities for IPS in Africa.³

Why is it important to study instant payment systems in Africa? Because IPS can form the foundation for the Digital Public Infrastructure (DPI), which is necessary for ensuring inclusivity in the digital economy.

SIIPS 2023 finds that the number of IPS systems and overall transaction volume has grown. There are now

32 active regional and domestic IPS, including three new regional IPS that have launched in the last three years. Still, 27 countries lack domestic instant payment functionality in Africa as of 2023. This means roughly half of the African population lacks access to a domestic IPS, though regional and private sector players fill the gap for some residents in these areas.

Findings in this year's study reinforce the fact that, to achieve inclusivity, the payments landscape must enable a wide range of channels, payment instruments, and use cases. Today, e-money instruments are the most dominant, person-to-person (P2P) payments are the primary use case, and USSD is the most-used channel. As was the case last year, no IPS yet qualify as mature, and most meet only basic-level inclusivity criteria, though the five IPS that meet the criteria for being "progressed" are on their way toward full maturity. While a number of barriers to widespread payments acceptance remain across access, early adoption, and habitual usage, policy and regulatory harmonization can help to overcome some of them to enhance seamless cross-border payments.

What is an instant payment system and when does it become inclusive?⁴



Instant payment systems (IPS) are retail payment systems that are multilateral—and open loop—and that enable digital push payments in near real time for use 24 hours a day, 365 days a year, or as close to that as possible.



Inclusive instant payment systems (IIPS) process retail transactions digitally in near real-time and are available for use 24 hours a day, 365 days a year, or as close to that as possible. They enable low-value, low-cost push transactions that are irrevocable and based on open-loop and multilateral interoperability arrangements. Licensed payment providers have fair access to the system, and participants have equal input opportunities into the system. The central bank has a role in system governance. End-users have access to a full range of use cases and channels, as well as transparent and fit-for-purpose recourse mechanisms.

³ GIMACPAY in the Economic and Monetary Community of Central Africa (CEMAC) region, Natswitch in Malawi, eKash in Rwanda, and National Financial Switch (NFS) in Zambia.

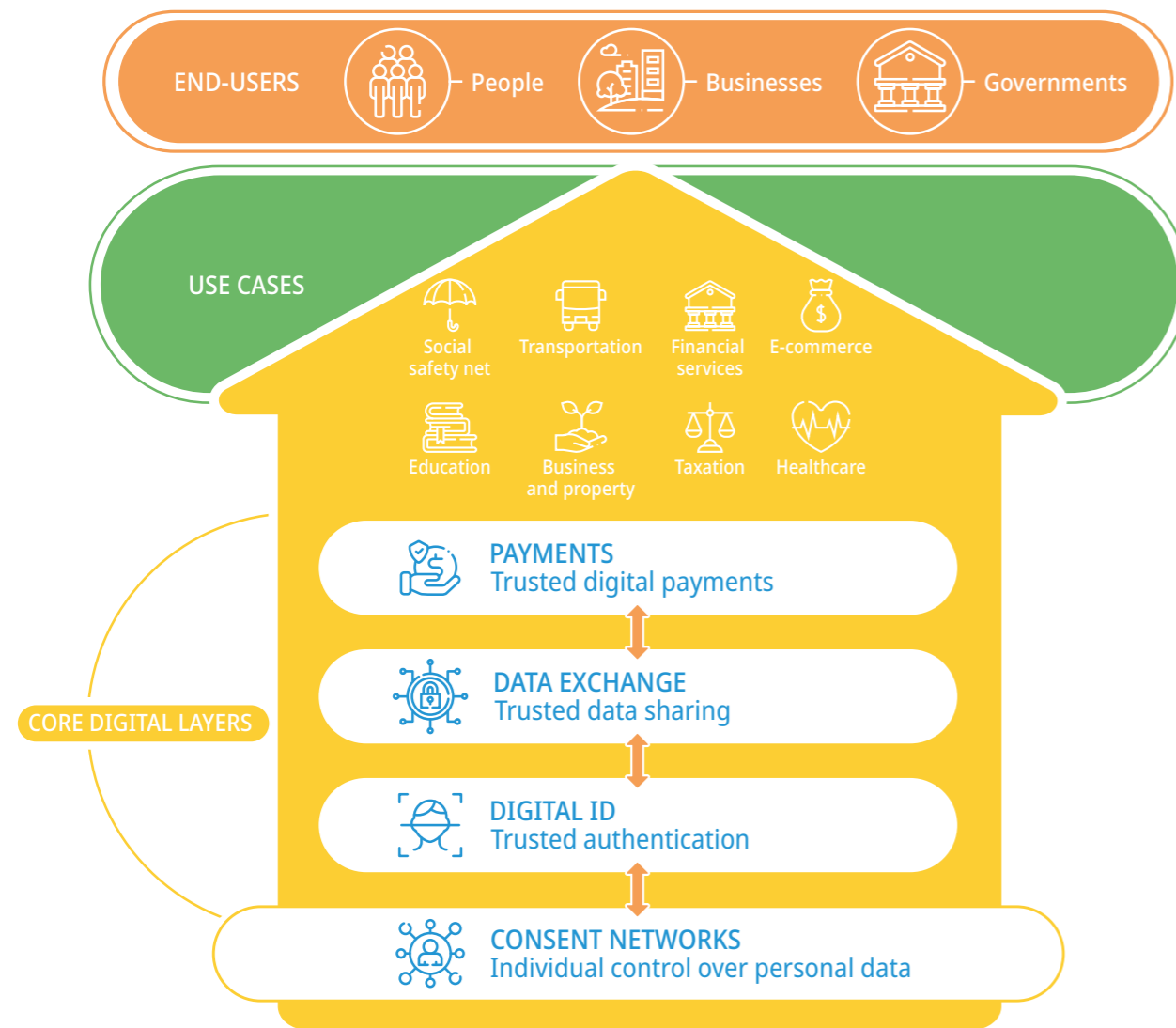
⁴ The definitions used in this report are, in principle, aligned with the definition of the Committee on Payments and Market Infrastructures (CPMI) but seek to emphasize a few specific aspects that are relevant from a financial inclusion context in several low-income countries—notably, mobile money accounts and push payments. Given this, even solutions that enable users of different mobile money providers to make and receive transfers in real time are considered under this definition, though the limitations of such arrangements are recognized in the different categorizations of IIPS.

IPS are foundational to digital public infrastructure for Africa

The concept of **digital public infrastructure (DPI)** has gained significant attention globally, as a mechanism for ensuring inclusivity in the digital economy. DPI refers to the digital 'stack' of payments, data exchange, digital identification, and consent networks that power common digital interactions. DPI comprises front-end and back-end

systems, provided by the government or in partnership with the private sector, which together serve as 'rails' that enable digital transactions and connections for people, businesses, and governments throughout the economy (World Bank 2022g; DIAL 2023; see Figure 0.1). If inclusive, IPS can reinforce the payment layer of DPI in Africa.

FIGURE 0.1 | Digital public infrastructure



Source: Adapted from World Bank 2022g and Digital Impact Alliance (DIAL) 2023

A growing footprint with increasing volume

IPS are crucial to deepen financial and digital inclusion. Africa's uptake of IPS is increasing:

- In 2022, 32 IPS systems in Africa processed nearly 32 billion transactions worth close to \$1.2 trillion.⁵
- The number of transactions processed has increased rapidly over the past five years, with an average annual growth rate of 47% in transaction volume and 39% in total transaction value.

- IPS increasingly process a significant dollar amount as a percentage of gross national income (GNI; Figure 0.2). Nine countries processed IPS value at 10% of GNI or above; three of these processed IPS value in excess of 100% of GNI in 2022: Ghana, Nigeria, Uganda. Nine countries had IPS values below 10% of GNI.

FIGURE 0.2 | 2022 domestic IPS transaction values relative to GNI (n=21)

LAUNCH YEAR		2022 TRANSACTION VALUES RELATIVE TO GNI
2006	RTC (South Africa)	19%
2011	ZIPIT (Zimbabwe)	3%
2011-2021	NIP (Nigeria), Nigeria mobile money, eNaira	186%
2012	SIMO (Mozambique)	23%
2015	NatSwitch (Malawi) (off-us) and NatSwitch (on-us)*	2.6%
2015-2016	GIP, Ghana MMI (off-us), Ghana MMI (on-us)*	129%
2016	Madagascar mobile money	72%
2016	Uganda mobile money	124%
2016	Taifa Moja (Tanzania)	89%
2017-2018	Kenya mobile money and PesaLink	93%
2018	NFS (Zambia)	10%
2019	MauCAS (Mauritius)	1%
2021	NamPay (Namibia)	0.2%
2021	Somalia Instant Payment System	<0.1%
2022	InstaPay (Egypt)	1%
2022	eKash (Rwanda)	0.1%
2022	EthSwitch (Ethiopia)	0.3%

● Cross-domain IPS
 ● Bank IPS
 ● Mobile money IPS
 ● Sovereign currency IPS
 ● On-us transactions

*NatSwitch (Malawi) and Ghana MMI are the only IPS where information on on-us transaction data is available.

⁵ Note that measurement inconsistencies between countries affect comparability and aggregation accuracy of reported data. Some countries include on-us transactions (internal transactions between account holders of one provider), which increases values and volumes compared to other countries, and some only include mobile money cash-in and cash-out transactions, which understate values and volumes.

What is needed for IPS in Africa to become digital public infrastructure?

In order for IPS in Africa to increase access for all citizens and form an effective payment layer in digital public infrastructure, systems will need to improve in sustainability, customer value proposition, provider value proposition, and policy.



Sustainability

- Increased transparency and open access of scheme rules, as well as the involvement of all licensed PSPs in scheme rule design.
- Reporting based on common measurement standards of volumes and value of transactions.
- Design for scale and to address market needs while limiting end-user costs compared with cash.



Customer centricity

- Pricing models that can compete with cash and existing closed-loop solutions to incentivize uptake.
- Inclusive services for end-users, including effective agent channels and recourse mechanisms.



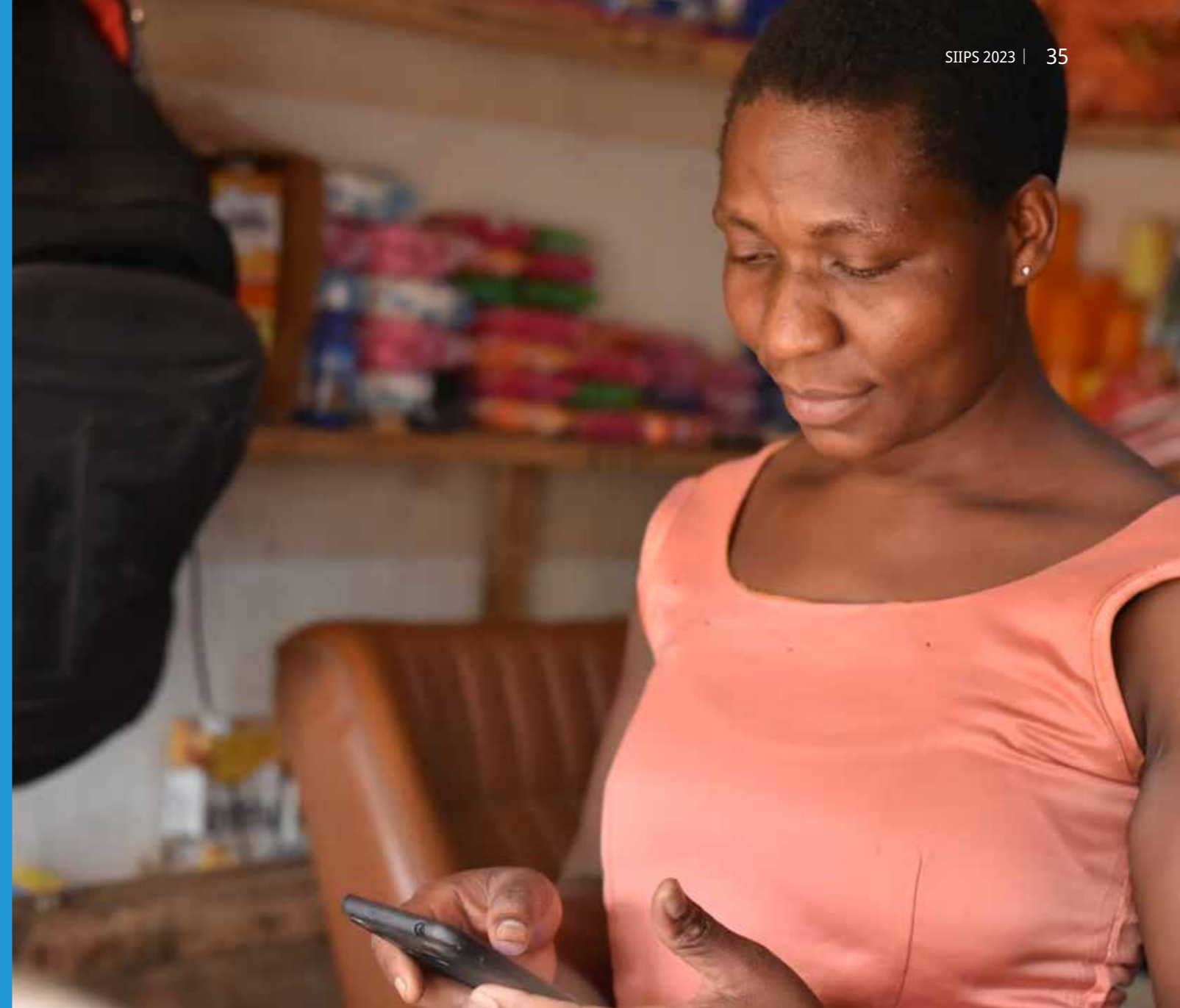
A compelling provider value proposition

- Continued roll-out of a portfolio of scale- and value-driving use cases to increase network touchpoints and keep digital value in circulation.
- An emphasis on value-added services including proxy IDs, centralized fraud and cybersecurity facilities, as well as centralized electronic know your customer (eKYC) and customer due diligence (CDD) facilities.
- Development of open APIs to promote open banking and foster a competitive landscape.



A conducive policy environment

- Continued improvement of the supporting ecosystem: risk-based and harmonized licensing of PSPs; network upgrades; sustained roll-out of agent networks; increased penetration of smartphones, broadened coverage areas for mobile data, and more affordable data access.
- Building out a principles-based regulatory framework for consumer protection and data privacy, and moving towards risk-based supervision.
- Emphasis on regional harmonization of policy and regulation for cross-border payments and transfers to enable IPS to catalyze digital trade and remittances.



Landscape snapshot

There are 29 live domestic systems across 21 countries and three live regional systems. This diverse landscape has relatively few new IPS, though that is to be expected since IPS take multiple years to implement and often require extensive industry and/or regulator consultation and technical expertise. Over the last year, the IPS landscape in Africa has evolved in the following ways (see Map 0.1):

- Three new systems, EthSwitch (Ethiopia), Virement Instantané (Morocco) and PayShap (South Africa) went live.

- Three systems, Meeza Digital (Egypt), MauCAS (Mauritius), and eKash (Rwanda), have been reclassified as cross-domain IPS. Meeza Digital and eKash had been classified previously as mobile money IPS and MauCAS was a bank IPS in SIIPS 2022.
- Seven countries have multiple IPS; only in Ghana are these systems interoperable with one another.⁶

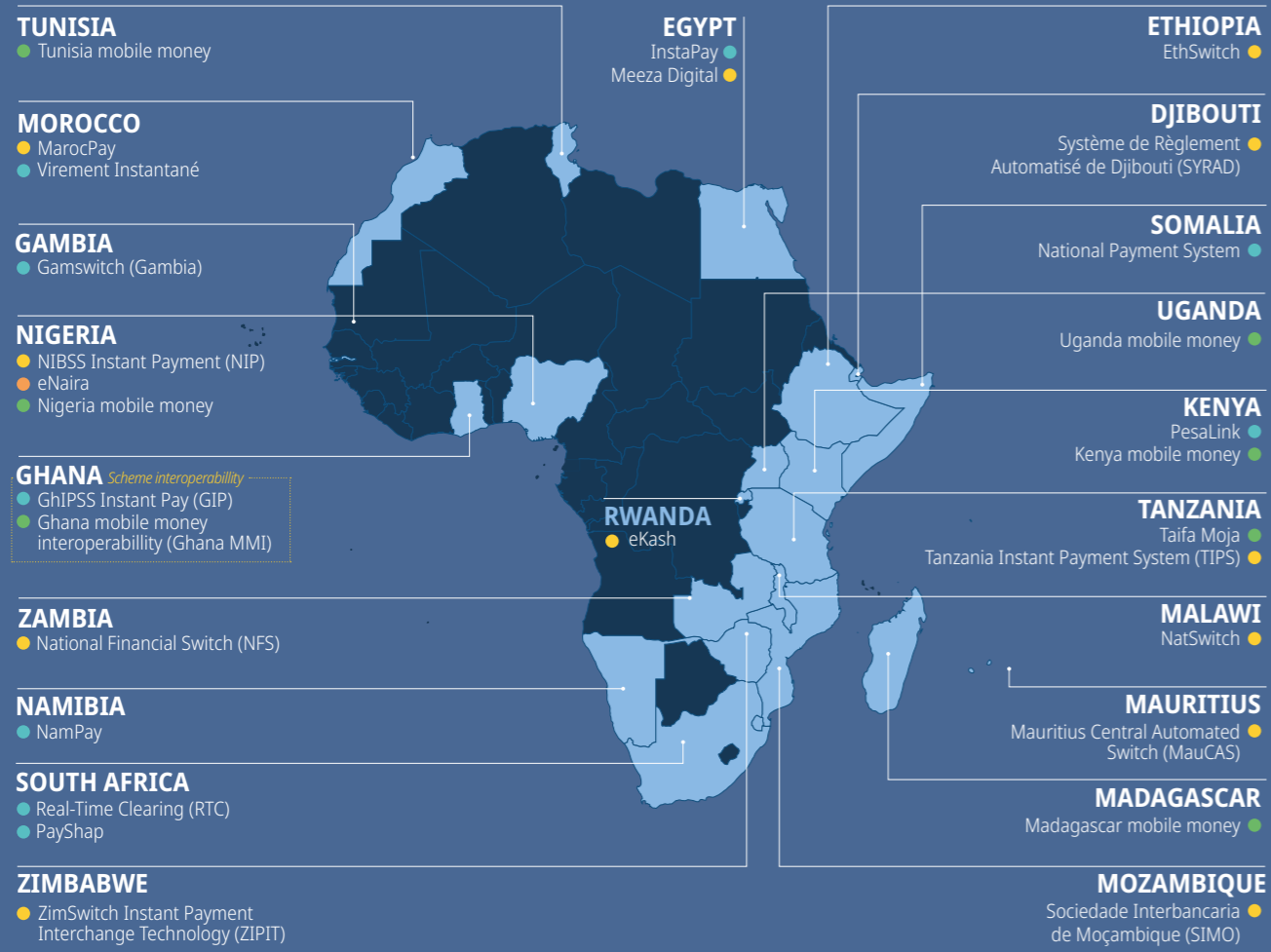
⁶ Egypt, Ghana, Kenya, Morocco, Nigeria, South Africa, Tanzania.

MAP 0.1 | There are 32 active domestic and regional IPS in Africa as of June 2023

29 DOMESTIC-LEVEL IPS
 +3 SINCE SIIPS 2022
 17 MORE UNDER DEVELOPMENT

7 COUNTRIES WITH MULTIPLE IPS
 +2 SINCE SIIPS 2022

● Cross-domain IPS ● Bank IPS ● Mobile money IPS ● Sovereign currency IPS



PAN-AFRICAN PAYMENT AND SETTLEMENT SYSTEM (PAPSS) PILOT

IN WEST AFRICAN MONETARY ZONE (WAMZ):
 The Gambia, Ghana, Guinea, Liberia, Nigeria, Sierra Leone.

GIMACPAY IN CENTRAL AFRICA MONETARY AND ECONOMIC COMMUNITY (CEMAC)

Cameroon, Central African Republic, Chad, Republic of Congo, Equatorial Guinea, Gabon.



3 REGIONAL-LEVEL IPS
 3 MORE UNDER DEVELOPMENT

TRANSACTIONS CLEARED ON AN IMMEDIATE BASIS (TCIB) IN SOUTHERN AFRICAN DEVELOPMENT COMMUNITY (SADC)

Angola, Botswana, Comoros, Democratic Republic of Congo (DRC), Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia, Zimbabwe.

Four types of domestic and cross-border IPS prevail on the continent, based on the payment instruments and interoperability arrangements adopted: cross-domain, bank, mobile money, and sovereign currency. Cross-domain IPS are the most prevalent, followed by bank IPS and then by mobile money IPS (Figure 0.3).

- 14 IPS are cross-domain in that they provide for account-to-account interoperability across banks and non-banks, and support transactions on both bank and mobile money accounts.
- There are 10 bank IPS, which only support bank access and bank-account-associated instruments.
- There are seven mobile money IPS, which only operate on mobile money accounts provided by mobile money providers.

- The eNaira in Nigeria remains the only sovereign currency IPS in Africa.

Mobile money IPS, used for small, frequent payments, dominate transaction volume. Small value, frequent payments via mobile money IPS account for 82% of IPS transaction volumes in Africa, despite representing only 29% of total IPS values. As indicated in Table 0.1, bank IPS have the highest—though sharply-decreasing—average transaction values. The average bank IPS ticket size decreased from \$313 in 2021 to \$267 in 2022. Compared to \$17 and \$142 in mobile money and cross-domain systems, respectively, the average transaction value in bank systems is considerably higher, yet their rapid decline suggests that end-users are embracing lower-value use cases. Mobile money and cross-domain average values have remained relatively stable over the years.

FIGURE 0.3 | Breakdown of IPS by type (n=32)

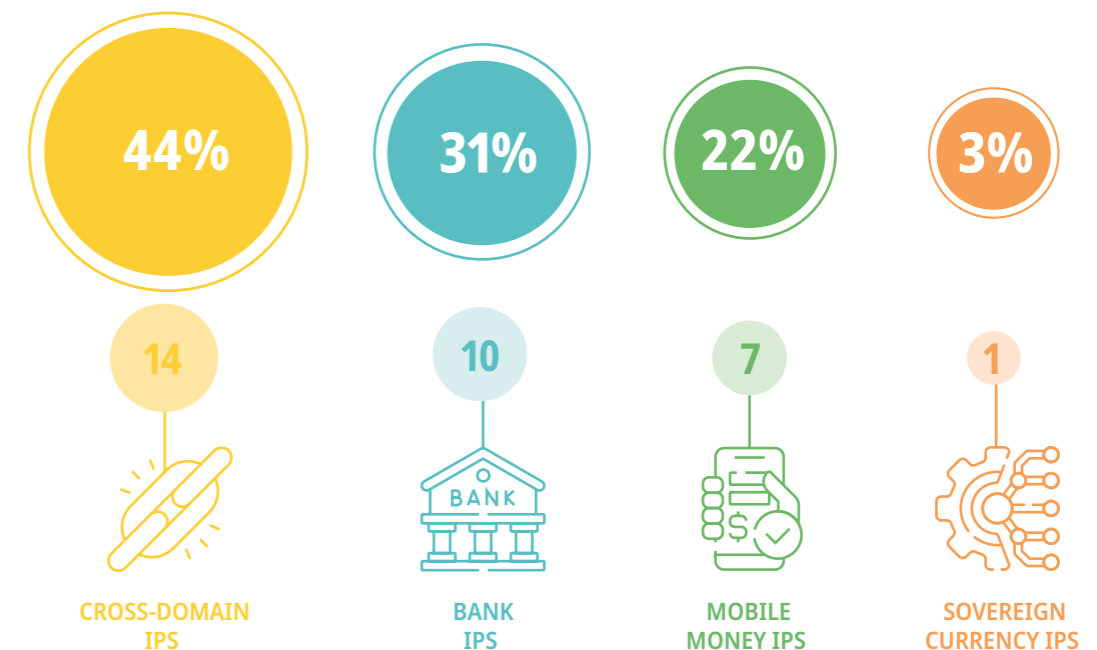


TABLE 0.1 | Average value per transaction per IPS type (US\$; n=21)

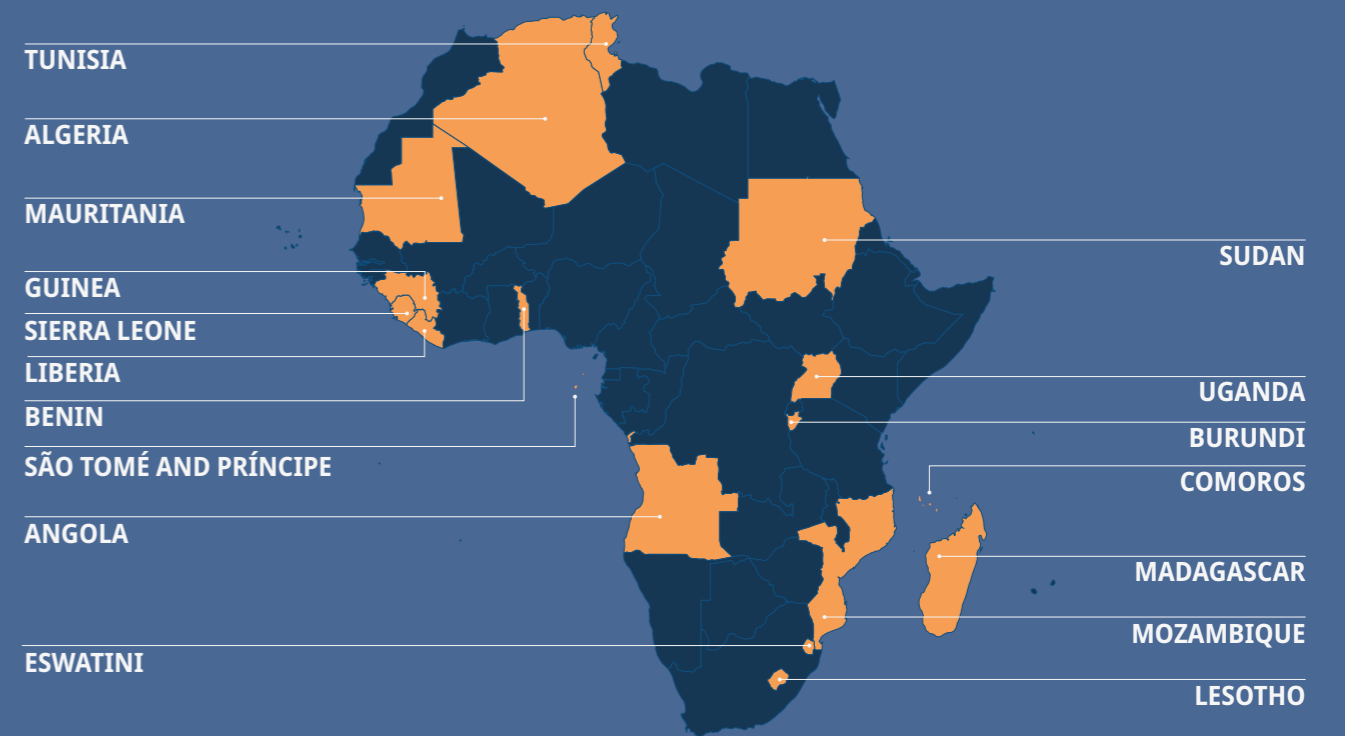
	2018	2019	2020	2021	2022
Sovereign currency IPS	-	-	-	-	20
Mobile money IPS	27	22	14	17	17
Cross-domain IPS	136	110	142	147	142
Bank IPS	653	445	386	313	267

Regional IPS are broadening the availability of payments across the continent. Three regional IPS were launched in the past three years: GIMACPAY, which mostly focuses on providing domestic and regional IPS capabilities to close the gap for the CEMAC countries in Central Africa; the Pan-African Payment and Settlement System (PAPSS), which is in pilot in the West African

Monetary Zone countries; and the Southern Africa Development Community's Transactions Cleared on an Instant Basis (TCIB).

Several new domestic systems are on the horizon. Map 0.2 shows the 17 domestic systems under development across the continent:

MAP 0.2 | Domestic IPS in development (n=17)



MAP 0.3 | Planned regional IPS (n=3)

COMESA

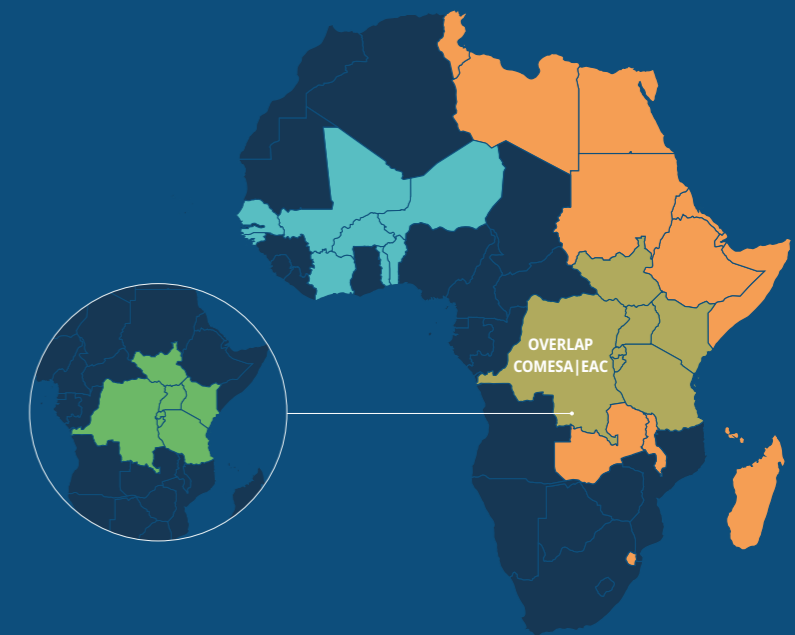
Burundi, Comoros, DRC, Djibouti, Egypt, Eswatini, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Somalia, Sudan, Tanzania*, Tunisia, Uganda, Zambia, Zimbabwe.

EAC

Burundi, DRC, Kenya, Rwanda, South Sudan, Tanzania, Uganda.

WAEMU

Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, Togo.



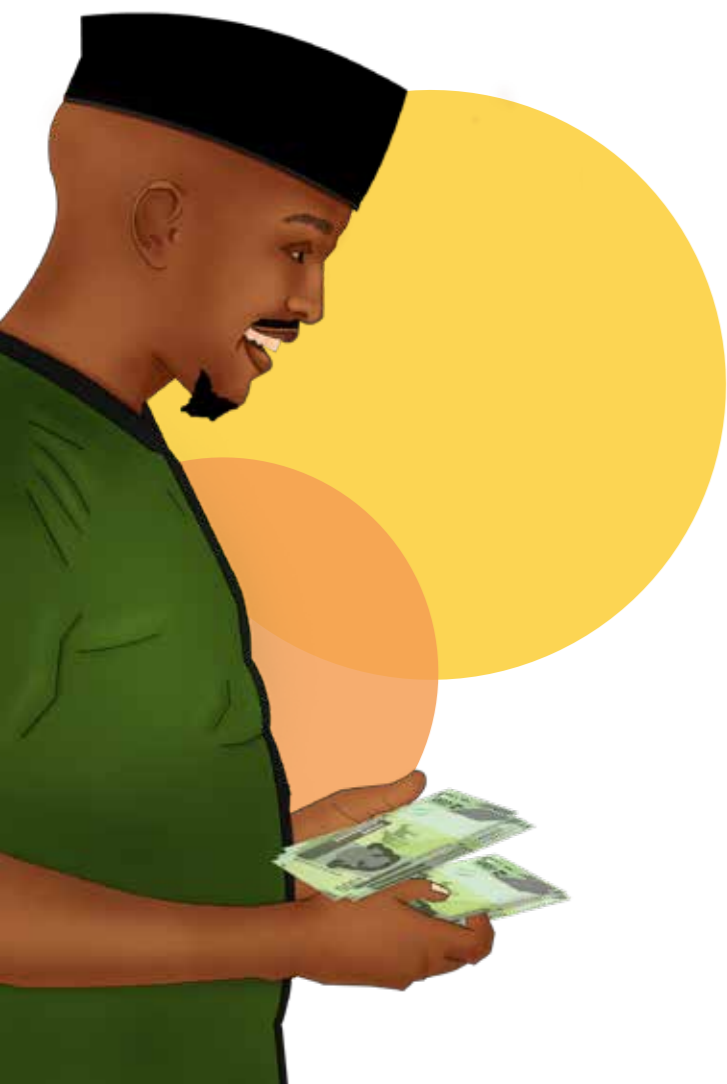
*Tanzania is not a COMESA member state but will integrate with the COMESA regional IPS.



Seven countries remain without existing or planned domestic functionality. Botswana, Cabo Verde, Democratic Republic of the Congo (DRC), Eritrea, Libya, the Seychelles, and South Sudan do not yet have—or have not yet publicly announced plans to develop—any domestic instant payment system functionalities as of June 2023, deadline of the data collection for the report. This provides a potential opportunity to share infrastructure.

As in 2022, three new regional IPS are in development (Map 0.3). Once these are fully operational, regional systems will cover more than half the continent's adult population.

Overlaps in the planned regional instant payment systems could undermine regional IPS' ability to achieve scale: Burundi, Kenya, Rwanda, Tanzania, and Uganda are included in both the EAC and COMESA. Algeria, Cabo Verde, Mauritania, Morocco, and São Tomé and Príncipe are not served by any of the Africa-based regional IPS, although Algeria, Mauritania and Morocco can access Buna, a cross-border payment system supported by the Arab central banks, and spanning the Middle East, South Asia, and North Africa.



Functionality continues to be centered on e-money instruments, person-to-person (P2P) use cases, and unstructured supplementary service data (USSD)

The SIIPS 2022 established that offering a range of channels, instruments, and use cases to meet the payment needs of end-users is core to achieving inclusivity. The picture in 2023 shows the same trajectory as in SIIPS 2022; namely, a landscape in which:



E-money instruments prevail. All mobile money and cross-domain IPS support e-money instruments. Cross-domain systems also support a range of commercial money instruments, such as credit and debit electronic funds transfer (EFT). Bank IPS focus mainly on supporting credit EFT with debit EFT as a secondary instrument.



P2P use cases dominate, followed by person-to-business (P2B). All IPS offer fast and convenient P2P payments. P2B use cases are also on the rise, and three-quarters of domestic systems support both. In contrast, only 31% of IPS support business-to-business (B2B) payments. Critical use cases, such as government-to-person (G2P), person-to-government (P2B) or other government-linked services remain unavailable in most African countries. Only six IPS (GIP and MMI in Ghana, Madagascar mobile money, MarocPay in Morocco, NIP in Nigeria, and Uganda mobile money) support G2P payments, and NIP and the Ghanaian systems are the only IPS that enable the broadest range of use cases.



USSD remains the most prevalent channel, closely followed by apps. Seventy-five percent of IPS in Africa support USSD; most of these IPS are mobile money or cross-domain systems. App channels are the second most prevalent at 72%, but require smartphone functionality and internet connectivity, which continue to be a barrier for the majority of African citizens. Other channels, such as quick response (QR) codes, are on the rise.

The channels an IPS provides is often based on the type of participants in the system: bank IPS and cross-domain IPS support the largest variety of channels, while mobile money schemes are typically limited to mobile money operators (MMO) as participants. This explains the dominance of agent and USSD channels for these systems. Several systems have adopted a “channel agnostic” approach. This means that the system does not provide for a specific set of channels, but rather permits PSP participants to determine what channels they provide.



Central banks continue to be key payment system and infrastructure actors alongside private sector players and industry associations

Participants have overlapping roles in IPS governance and ownership. Apart from fulfilling a core governance function, central banks also often operate as owner, overseer, settlement agent, or, in some cases, operator. In addition, external private companies have stepped in to act as system operators. Fifteen system operators are privately-owned, and private companies also play a key role as owner and in system governance. In some cases, the various roles (apart from settlement agent) are fulfilled by industry associations. Finally, for some schemes, roles are fulfilled by bilateral arrangements. The particular governance arrangement is often determined by the ownership structure.

Banks and MMOs, for their part, serve as key IPS participants. Commercial banks are the primary players in cross-domain systems, followed by bank participants and then MMOs (in contrast, MMOs dominate in mobile money IPS). Standard Bank Group and Ecobank participate in the most systems. The four MMOs with the largest IPS footprint are Airtel, MTN, Orange Mobile, and Vodacom (whose footprint includes Safaricom in Kenya). Fintechs play a vital role along the IPS value chain by providing innovative technologies to end-users, IPS operators, and payment system providers. They typically partner with direct participants to provide front- or back-end services, but as technical service providers they are facilitators rather than system actors.

Some progress toward inclusivity, but no systems yet qualify as “mature”

No IPS has reached the **mature** level of inclusivity yet as shown in the IPS Inclusivity Spectrum in Figure 0.4. Most systems either are unranked or meet only basic-level inclusivity criteria.

The five **progressed** IPS are all on their way to the **mature** level. These include four domestic systems covering three countries (Ghana, Malawi, and Zambia) and one regional system serving six (Cameroon, Central African Republic, Chad, Republic of Congo, Equatorial Guinea, Gabon). As a result, nine countries have access to progressed IIPS functionality as of 2023. The two systems in Ghana, however, have plans to roll out an expanded set of use cases, which will bring them closer to maturity. Transparent consumer recourse mechanisms remain the most complex element to implement.

This year’s inclusivity spread is similar to that reported in SIIPS 2022, where thirteen IPS were not ranked, eleven were at the basic level and five qualified as progressed. Two IPS moved to not ranked in 2023: Kenya mobile money and Rwanda’s eKash.

Six IPS moved from not ranked to basic level: InstaPay and Meeza Digital (Egypt), Madagascar mobile money, NamPay (Namibia), and TIPS and Taifa Moja (Tanzania). The countries with progressed systems have remained unchanged year-over-year.

FIGURE 0.4 | IPS inclusivity spectrum in 2023



Assessment based on available data and information collected till June 2023. * GIMACPAY (CEMAC) enables domestic IPS functionality in six countries: Cameroon, Central African Republic, Chad, Republic of Congo, Equatorial Guinea, and Gabon.

End user insights confirm the importance of functionality and trust for driving digital payments adoption

The 2023 sample countries feature fewer users overall, but more super-users. Among the adults who use digital payments in Cameroon, Malawi, Morocco, Rwanda, and Senegal—the five countries where consumer surveys were conducted for this report—more than half of adults receive or make a payment at least once a week. Specifically, nearly 70% of surveyed digital payment users, on average, make a digital transaction at least once a week, meaning they are “super-users.” (Figure 0.5).

Different user groups show distinct usage patterns. When looking at weekly transaction volumes, a clear

gender gap exists for MSMEs: male business owners report more than 30 transactions per week, on average, whereas female business owners report only 24.

Age influences digital payment usage as well, but the extent of its influence varies by country. A larger share of younger users, aged 30 and below, has embraced digital payments than their older counterparts due to their aspiration for innovation and desire to engage in mobile and e-commerce opportunities. However, older people have more opportunities to use digital payments, given greater income and expense obligations, and thus use them more frequently.

FIGURE 0.5 | Cross-country analysis: frequency of digital transaction use



What do IPS need to do to meet end-user needs and realities? Consumers highlight several barriers to and drivers of use, including access challenges, usage constraints, and limits to habitual use. Addressing these will help to create the network effects needed to achieve scale:



Access: The main constraints highlighted by the consumer research are phone ownership and internet access. These are outside the control of IPS. Yet it is entirely within the control of participant PSPs to establish agent networks to enable access for those without devices and/or digital literacy. Agent networks and their interoperability can be encouraged and promoted by IPS.



Usage: Lack of trust and capacity to use the services are the main usage barriers. Marketing campaigns and agent outreach can drive digital adoption, including for women. Micro business owners and infrequent income earners were most likely to say digital payments hold limited value. Unreliable mobile networks, lack of widespread acceptance of digital payments by merchants, transaction costs, and complex user interfaces affect users' ongoing engagement with digital payments. Agents play a key role in educating and assisting users with specific transactions, managing issues that arise, and supporting consumer recourse.

Women continue to face more barriers than men, although the significance of the barriers depends on the context.



“MOST WOMEN DID NOT GO TO SCHOOL; THEREFORE, THEY CANNOT EASILY MAKE A TRANSACTION USING DIGITAL PLATFORMS.”

From barriers to opportunities



The IPS landscape in Africa is not yet optimized to inclusively meet end-user needs or create sustainable low-cost business models.

As Table 0.2 shows, barriers and opportunities at five levels shape the agenda for scaling inclusive IPS adoption and use in Africa.



TABLE 0.2 | Barriers and opportunities for IPS at a glance

	Barriers	Opportunities
 <p>IPS business models</p>	<ul style="list-style-type: none"> • Competition with proprietary systems and closed-loop systems, and overlap between regional systems, fragments the market and inhibits scale. • The proliferation of on-us transactions impacts the scalability of IPS operated through a third-party interoperability arrangement. • Sub-optimal interoperability arrangements. 	<ul style="list-style-type: none"> • Establish network effects by attracting additional participants. • Build scale through additional use cases. • Achieve sustainable business models that lower costs, drive uptake, and achieve scale. • Share infrastructure for efficiency. • Disaggregate IPS on-us transaction data to bring more insights.
 <p>IPS value proposition for PSPs</p>	<ul style="list-style-type: none"> • Dominant PSPs and those that have invested heavily in their own infrastructure do not buy in to the value of interoperability with less-dominant PSPs. • Lack of transparency of scheme rules, performance data (volumes, and values). • Failure to address key regulatory barriers for PSPs, domestically and cross-border: compliance burden, foreign exchange limitations, operational challenges. 	<ul style="list-style-type: none"> • Develop IPS designs through a participant-led consultative process. • Make scheme rules and data visible to improve PSP trust and buy-in, and to assist with compliance. • Endorse payment digitalization and implementation of regulatory change. • Allow new entrants to live-test products in a risk-controlled environment.
 <p>Digital payment inclusion for women</p>	<ul style="list-style-type: none"> • A persistent gender gap in digital payment usage, plus gaps in phone, internet, and legal identity documentation access. • Failure to tailor product design to women's needs. 	<ul style="list-style-type: none"> • Establish effective recourse mechanisms to counter fraud and increase trust. Conduct financial education campaigns for women on their rights and responsibilities. • Analyze gender-disaggregated data to drive product and service design. • Leverage agent networks, including female agents, to onboard, build trust, and familiarize women with digital payments. • Integrate the G2P use cases. • Adopt electronic know your customer systems to lower access barriers.

	Barriers	Opportunities
 <p>Merchant and government payment use cases</p>	<ul style="list-style-type: none"> • Limited digital value circulation impacts IPS' ability to scale and reduce costs. • Lagging user adoption of merchant payments and persistent merchant informality. • G2P contracts selectively awarded or not digitalized/still reliant on cash distribution. 	<ul style="list-style-type: none"> • Encourage cheaper and reliable P2B payments for merchants and end-users through scheme rules on pricing and transparency; incorporate value chain B2B payments with end-user incentives. • Digitalize G2P distribution and open distribution to various players.
 <p>Technology standards</p>	<ul style="list-style-type: none"> • International Organization for Standardization (ISO) 8385 is outdated but ISO 20022 remains expensive. • A lack of standardized QR codes. • Data sharing restrictions limit innovation. 	<ul style="list-style-type: none"> • Adopt application programming interface (API) integration layers to enable integration with ISO 20022. • Adopt standardized QR codes to increase convenience. • Inform country strategies on Open Banking and Open Finance to propel technology standards forward.

Unlocking cross-border payments through policy and regulatory harmonization

Inclusive cross-border retail payment systems play an important role in supporting the implementation of digital trade as part of the African Continental Free Trade Area (AfCFTA) mandate.

Harmonization of policy and regulatory frameworks is required to address barriers related to cross-border remittances (P2P transfers); micro, small, and medium enterprise (MSME) trade payments (B2B); and cross-border merchant payments (P2B).

Today, retail end-users and providers face significant barriers to cross-border payments. Many incumbent providers find the compliance burden for serving MSMEs and migrants with cross-border payments too high. High cost, complex documentation, and reporting requirements drive end-users to use informal channels for both remittances and trade payments. Overall, cross-border retail payments on the continent are expensive and inaccessible, and hence still largely informal.

Why harmonize?

Providers cited the lack of risk-proportionate payments licensing framework, a high regulatory burden with significant penalties for non-compliance, inconsistencies between know your customer (KYC) and customer due diligence (CDD) requirements across countries, data localization requirements and complexities in tax and balance of payment reporting across jurisdictions, as the top regulatory barriers to cross-border digital payments implementation. These barriers increase risk and cost to providers, and challenge market entry by innovators who want to focus on inclusive cross-border payments. Harmonization of regulation across jurisdictions will reduce complexity and facilitate greater competition, which could lead to cheaper, faster, and more accessible cross-border payment options for end-users.



What is needed to harmonize?

Achieving harmonization calls for a pragmatic approach that honors the authority of regulators within each jurisdiction while providing overarching guiding principles set through mutual recognition at the regional level.

There are several areas of regulation to harmonize:

- PSP licensing requirements and supervision regimes.
- The KYC and CDD framework, including eKYC, and the interpretation of Financial Action Task Force guidance for the associated anti-money-laundering, terrorism-financing, and proliferation-financing framework.
- Financial consumer protection provisions on complaint and dispute resolution processes, as well as disclosure and transparency.
- Foreign exchange access and reporting regimes.
- Data privacy, cross-border data sharing, and data protection principles, including compatibility of payment data standards and formats.

Who can harmonize?

Central banks are the key actors in driving harmonization. To enable them to do so, cooperation structures and agreements are needed, particularly related to financial integrity and data harmonization.

In addition to central banks, data protection authorities can play a vital role in facilitating cross-border trade by ensuring protection of data during international data transfers. Tax and monetary policy authorities play critical roles in addressing exchange control barriers, while regional economic communities (RECs), monetary unions,

monetary zones, and their associated executive bodies have a mandate to foster cooperation and collaboration among members, including in cross-border payments.

Finally, the African Union will play an important role in elevating the urgency of policy and regulatory harmonization agenda with heads of state.

How to harmonize?

The road to harmonization is long, with differences in domestic legal structures posing challenges. This requires proactive regional strategies, programs, and, where appropriate, model regulatory frameworks. Lessons from around the globe can assist African RECs and central banks in prioritizing harmonization actions. These lessons suggest that the sequencing of regulatory changes and regional initiatives needs to be carefully considered. There are three building blocks for effective cross-border retail payment harmonization that can be developed concurrently and iteratively:

- 1 Policy formulation at the regional and domestic levels.** The first building block is for regional and domestic policymakers to establish a common goal—shared principles—and to equip regulators with mandates for cooperation.
- 2 Alignment of regulatory frameworks.** The second building block is domestic alignment of regulation, guidance, rules, practices and implementation according to regional principles, with approaches that are reasonably compatible within countries' respective technical and risk tolerances. Development organizations can contribute with technical support and capacity building.
- 3 Formal agreements.** The final building block is for payment service directives and trade agreements to be entered into as formal tools for the realization of longer-term harmonization outcomes.

Future perspectives

Africa's digital payments market has entered a new era. Although the IPS landscape has remained relatively stable over the past year, competitive dynamics and payments functionality will continue to evolve, new IPS will go live, and with new entrants, IPS in some countries will see overlap with regional systems. At the same time,

there are significant opportunities to accelerate digital payments and all-to-all interoperability.

Several market, system, and consumer trends will shape the evolution of the IPS landscape and its ability to scale in all countries and regions, as Table 0.3 shows:

TABLE 0.3 | Market, system, and consumer trends at a glance

 <p>Market trends</p>	<ul style="list-style-type: none"> • Agents will cement their position at multiple points along the digital payments value chain. • Fintechs will continue to launch innovative products and increase their networks/market share in the mobile payments market. • Regulators are revising payments and e-money laws to foster innovation. • Digital ID rollouts will increasingly allow for additional proxy ID options. • Virtual assets for cross-border retail payments can divert scale from IPS.
 <p>System trends</p>	<ul style="list-style-type: none"> • Banks remain crucial participants of IPS. • Fintechs continue to provide front- and back-end services in partnership with established PSPs rather than becoming direct IPS participants. • Open Finance is emerging. • CBDCs are emerging as decentralized instant settlement and interoperability mechanisms but technical assistance support is oversubscribed.
 <p>End-user trends</p>	<ul style="list-style-type: none"> • End-users are increasingly susceptible to and aware of fraud and cybercrime. • End-users are persistently price sensitive. • End-users are increasing their smartphone adoption, but growth in data access has been slow.



Where to next?

The State of Inclusive Instant Payment Systems in Africa 2023 report showcases the continent's progress on increasing digital instant transaction volumes and values. However, it also shows that more needs to be done to ensure that IPS are truly inclusive, so that they can successfully contribute to the growth of digital public infrastructure in Africa. As we look to the future, policymakers must create incentives for the design and scale-up of inclusive instant payment systems within existing financial market infrastructure. In this, access to credible and comparable information is key. For IPS, the imperative is to ensure that their design and governance structures support inclusive outcomes, and that consumer and market participant

requirements are met to achieve sustainable inclusion. Regulators, in turn, need to consider how to regulate and supervise to enable inclusive national and regional ecosystems through measures to support innovation, more proactive coordination between domestic regulators, and regional harmonization of regulation for cross-border payments.

AfricaNenda, the World Bank, and UNECA will continue to advocate for making instant payment systems accessible and useful for all, and to help regulators and market players navigate the choices that they face in the pursuit of inclusive instant payment systems as digital public infrastructure in Africa.



INTRODUCTION



The State of Inclusive Instant Payment Systems (SIIPS) in Africa 2023 report takes stock of progress in the development of digital payment rails on the continent and showcases learnings in the design and roll-out of inclusive instant payment systems (IIPS).

But what do we mean by instant payment systems, and, specifically, what does it mean for them to be inclusive?

The term instant payment system, or IPS, used throughout this report refers to instant retail payment systems

domiciled in Africa that are open-loop and that enable digital push transactions in real time. This categorization explicitly excludes proprietary, on-us instant payment systems, including most card schemes. IPS are sometimes referred to as “fast payment systems” (FPS) or “real-time payment systems” (RTPS).

An instant retail payment system is defined in this report as follows:



Real-time: The value transfer is instant (within seconds).



Digital: The system is electronic, and the services are accessible on digitally enabled devices.



Available: The system is available for use 24 hours a day, 365 days a year, excluding planned maintenance or system downtime.



Open-loop: The system is multilateral and interoperable, and thus excludes closed-loop, on-us systems.



Enabling push payments: The system enables credit push transactions.⁷



Irrevocable: Transactions generally cannot be reversed by the payer (with the exception of fraudulent or erroneous transactions).



Enables low-value payments: There is no minimum transaction amount.

IIPS process payments **digitally in near real time** and are available for use **24 hours** a day, **365 days** a year, or as close to that as possible. They enable **low-value, low-cost, push** transactions that are **irrevocable** and based on **open-loop multilateral** interoperability arrangements. Licensed payment providers have **fair access** to the system, and system participants have **equal input** opportunities into the system. The **central bank** has a role in system governance. End-users have access to a **full range of use cases and channels**, as well as transparent and fit-for-purpose **recourse** mechanisms.

For an IPS to be an inclusive IPS (or IIPS) it must meet the following aspirational benchmark, which draws on the work of AfricaNenda (2021), CGAP (2021), the World Bank (2021b), the Bill & Melinda Gates Foundation (2019) and the Bank for International Settlements (2016).⁸

The development of IPS and IIPS in Africa is a critical enabler of financial inclusion, of digitalization, and of cross-border trade. Trends already point to rising digital payments adoption in Africa, fueling instant payment systems (IPS) usage.

⁷ Debit pull-only systems that do not support credit push transactions at a minimum are excluded. Instant debit pull transfers will likely play an important role in the future, especially for recurring person-to-business payments with trusted businesses and where convenience is at a premium, but they are currently not widely available.

⁸ See Chapter 2 for an overview of the definition terms.

Almost 50% of adults, across 40 African countries where data is available, used a digital payment in 2021, ranging from 5% of adults in South Sudan to 81% in South Africa. Digital payment use has increased 79% in Africa since 2014 (World Bank 2021c).

Mobile money has been a significant driver of access to and use of digital transactions in Sub-Saharan Africa (SSA), which is home to 154 mobile money services and 218 million 30-day active mobile money accounts as of 2022. The number of mobile money accounts increased 15% year-over-year in 2022, and mobile money transaction volumes and values increased by 21% in 2021 and 22% in 2022 (GSMA 2023a). These growth rates are enabled by an increasingly digital instant payment infrastructure, digital provider growth, and increased trust by end-users in mobile phone-based payments services.

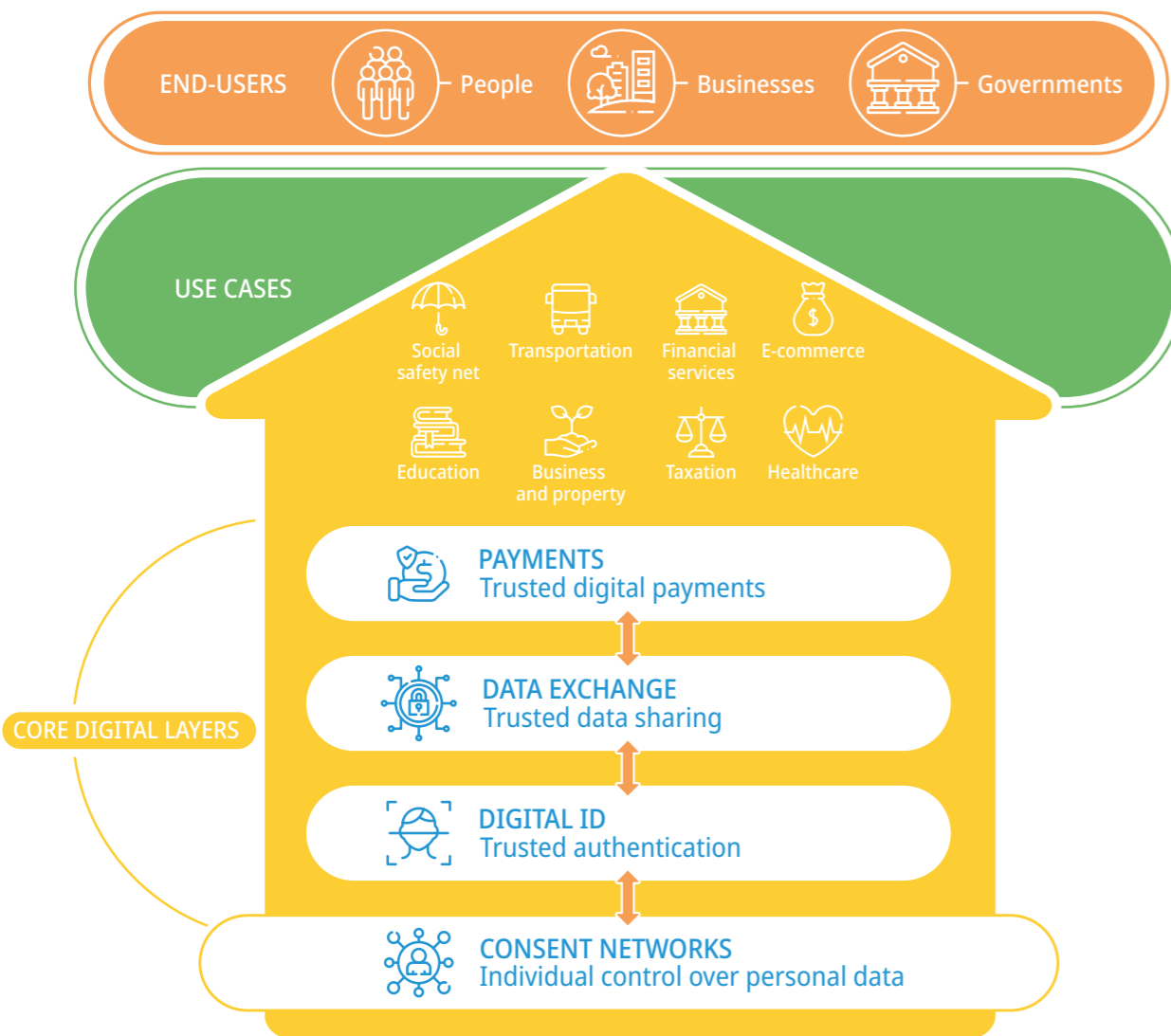
Despite this progress, there are gaps in access to digital payments. Financially underserved groups such as women, young adults, and low-income adults are often left out. As Africa continues its transition to digitally driven services, including in retail payments, there is a growing need for inclusive instant payment systems that provide the foundations for a payments layer in the digital public infrastructure (DPI; Figure 1.1). DPIs facilitate essential government services and societal functions that are foundational in a digital economy (World Bank 2023a). Inclusive IPS in Africa can support the advancement of DPI, enabling digital payments access to all, and building domestic and regional resilience in times of crises, such as through effective digitization of government-to-person (G2P) payments.

IIPS are also central to the implementation of digital trade in Africa, as part of the African Continental Free Trade Area (AfCFTA) mandate. Digital trade can boost intra-Africa trade through expanded African markets for traders on the continent. Enabling traders to make or receive payments seamlessly will unlock significant value. A thriving financial system with inclusive cross-border retail instant payment systems can enable successful implementation of digital trade.

Achieving all-to-all interoperability through IPS is necessary for inclusivity, and interoperable payments are increasing on the continent. Mobile-to-bank transactions rose by 47% in 2022 and bank-to-mobile transactions by 36% year-on-year—the highest growth among all types of transactions (GSMA 2023a). All-to-all, interoperable digital connections through IPS, integrating a variety of provider types, are essential in an inclusive system. A network of different players creates choice for the end-user, drives down transaction costs, and ensures nationwide or regionwide service coverage. A cross-domain IPS that connects banks with non-bank PSPs for domestic and cross-border instant payment functionality creates maximum efficiency.

This report offers insights into the progress that has been made on the availability of IIPS in Africa. It was developed using a mixed-method research approach combining government and private-sector sources and literature to create a comprehensive database of the IPS landscape in Africa; qualitative research with key stakeholders; quantitative and qualitative consumer and micro-, small-, and medium-sized enterprise (MSME) surveys in five countries; a deep dive into the issues related to cross-border regulatory harmonization using documented literature and reports and interviews with key stakeholders; and IPS case studies. For more details on the research methods, see [Annex A](#) for an overview, [Annex F](#) for the details on the consumer research, and [Annex H](#) for the documented case studies.

FIGURE 1.1 | Digital public infrastructure layers



Source: Adapted from World Bank 2022g and Digital Impact Alliance (DIAL) 2023

The report unfolds as follows:

- 2 **Chapter 2** delves into the African landscape of domestic and regional IPS. The chapter highlights the essential components of each IPS, including their type, functionality, main actors, and technology. It places each IPS in Africa along an inclusivity spectrum.
- 3 **Chapter 3** presents the findings from the quantitative and qualitative research into payment use among low-income individual users and MSMEs in five African countries: Cameroon, Malawi, Morocco, Rwanda, and Senegal.
- 4 **Chapter 4** identifies the barriers and opportunities to achieving IPS inclusivity and explores the development of DPIs for all ecosystem stakeholders.
- 5 **Chapter 5** provides an in-depth discussion on cross-border retail payments and their associated regulatory barriers. The chapter explains the importance of regulatory and policy harmonization on the continent, the progress of harmonization to date, and learnings from across the globe that policymakers can draw on.
- 6 **Chapter 6** provides future perspectives from three angles: the market, the system, and the consumer.
- 7 **Chapter 7** concludes the report and summarizes the recommendations for action.



THE LANDSCAPE OF INSTANT PAYMENT SYSTEMS



During the past fifteen years, the need for faster, more secure, and more convenient payment options has created significant momentum for the adoption of Instant Payment Systems (IPS). This chapter provides an overview of the current landscape of IPS in Africa. It delves into the various aspects of IPS, including their types, geographic span, the supported functionality, ecosystem participants, and the underlying technology. Furthermore, this chapter explores the level of inclusivity of IPS in different jurisdictions.

The key takeaway from this overview is that IPS expansion in Africa in the past year has been modest. Though three new systems came online, only one additional country gained coverage. Thus, as of 2023, only about 50% of adult end users in Africa have access to a domestic IPS. Though regional systems fill some of that access gap, much of North Africa and West Africa remain without coverage. Yet there are several domestic and regional IPS in the planning stages now. Should they come online in the coming years, there is the potential for coverage gaps to fill and even for there to be some overlaps, creating possible fragmentation.

As for the core concern about inclusivity, AfricaNenda assigned inclusivity ratings to all the IPS reviewed, across a spectrum from **basic to progressed to mature**, where advancement toward maturity requires more inclusive attributes in both functionality and governance. The majority of IPS systems across the continent have, to date, achieved only a basic level of inclusivity, as defined by AfricaNenda. Continued investment and technical assistance in planned deployments and existing IPS will likely lead to greater inclusivity within the next few years.

The following sections offer detailed data on key elements of the IPS landscape.

2.1 | The IPS landscape has seen modest change since 2022

The IPS landscape has a few notable changes since 2022 (see Table 2.1).⁹ Three new systems—EthSwitch (Ethiopia), Virement Instantané (Morocco), and PayShap (South Africa)—went live since 2022; and three systems—Meeza Digital (Egypt), MauCAS (Mauritius), and eKash (Rwanda)—have since been reclassified from mobile money/bank IPS to cross-domain IPS. Overall, the number of countries

served by domestic IPS increased by one, as Ethiopia is now live. The slow rate of change since 2022 is in line with expectations since IPS take multiple years to implement and scale, often requiring extensive industry and/or regulator consultations and technical iterations. Table 2.2 shows changes to the IPS landscape from 2022-2023 (more detailed information available in [Annex B](#)).

⁹ While conducting the research for the SIIPS 2022, AfricaNenda built a comprehensive database of IPS, which was updated for this report (an interactive map is available on the AfricaNenda website). The database classifies and maps IPS based on their characteristics. Updates reflect new IPS that have launched, changes to reported data, data shared directly, new or revised information in the public domain, and foreign exchange adjustments.





2.2 | IPS fall under one of four types

Four types of IPS exist on the continent. The IPS “type” is based on the payment instruments it supports and its interoperability arrangements (Table 2.2). Scheme rules also help us classify IPS types, though they are often not publicly available.¹¹

Most IPS in 2023 are cross-domain (Figure 2.1). Two of the three regional IPS (GIMACPAY and TCIB) fall into the cross-domain classification, and PAPSS is considered a bank IPS. Since 2022, two mobile money IPS were reclassified as cross-domain because they now also include banks. Meeza Digital (Egypt), eKash (Rwanda) and MauCAS (Mauritius) changed from a bank IPS to a cross domain.

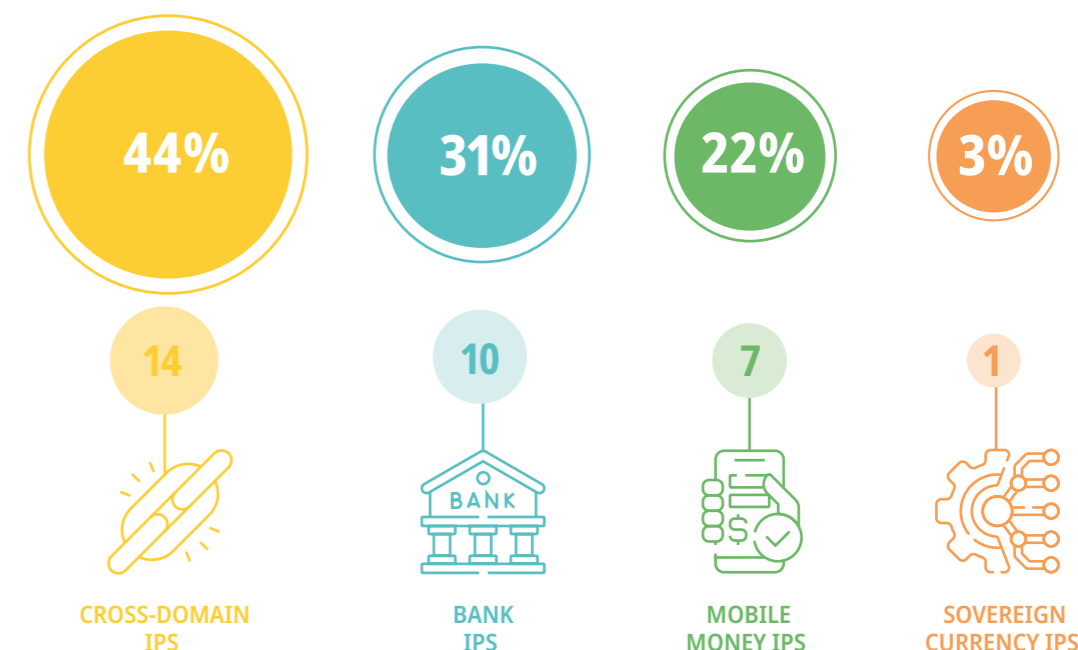
Furthermore, EthSwitch (Ethiopia) launched a new cross-domain system in 2022. The launch of two additional bank systems in 2023—Virement Instantané (Morocco) and PayShap (South Africa)—makes bank IPS the second most prevalent IPS type (Box 2.1). Although there are several retail central bank digital currency (CBDC) initiatives in research or pilot phases across the continent, eNaira (Nigeria) remains the only sovereign currency IPS.

TABLE 2.1 | IPS type definitions

IPS types	
	<p>Cross-domain IPS</p> <p>A system that provides for all-to-all interoperability where switching, clearing, and exchange of instruments is contained within one overarching system. Cross-domain systems provide access for banks and non-banks and support transactions from both bank accounts and mobile money accounts. All-to-all interoperability includes the ability for end-users to directly transact between wallet accounts at different mobile money operators (MMOs), between mobile money accounts and bank accounts, and across bank accounts. Within one system, there are different rules to accommodate various instruments. The single system provides the governance framework and coordinates the operational functions end-to-end for the various instruments (GSMA 2014).</p>
	<p>Bank IPS</p> <p>A system that provides access to banks only and that supports instruments associated with bank accounts.</p>
	<p>Mobile money IPS</p> <p>A system that provides access for mobile money providers only and that supports instruments associated with mobile money accounts.</p>
	<p>Sovereign currency IPS</p> <p>A central bank digital currency IPS. Such an IPS combines a sovereign currency instrument and a value transfer system that can provide a unified digital value transfer mechanism between commercial instrument systems, institutional stakeholders, and individuals within an economy.</p>

¹¹ IPS-specific websites were used as the next best source of scheme rules for gathering information. To aid the analysis, if the website specified mobile money operator (MMO) and bank participants while offering typical MMO and bank-based channels, the IPS is classified as cross-domain.

FIGURE 2.1 | Breakdown of IPS by type (n=32)






BOX 2.1 | Three new systems launched since SIIPS 2022

- **EthSwitch.** EthSwitch launched its Real-time Retail Payments Platform Project in Ethiopia in 2022 after receiving funding to modernize the country's retail payment system from the African Development Bank's Africa Digital Financial Inclusion Facility and the Bill & Melinda Gates Foundation. After a successful pilot between nine banks and one microfinance institution (MFI), the person-to-person (P2P) service went live in October 2022, enabling bank, MFI, and e-money issuers to instantly send funds between accounts and digital wallets via both USSD and apps (EthSwitch 2021). EthSwitch operates the system.
- **PayShap.** PayShap launched in March 2023 in South Africa as a bank IPS (BankservAfrica 2023). It is currently supported by the four largest banks: Absa, FNB, Nedbank, and Standard Bank. BankservAfrica, a central clearing house and the manager of the regional TCIB system, processes the payments in real time. The system was built for low-value payments with a transaction cap of \$167 (ZAR3,000) and a daily limit of \$278 (ZAR5,000). The initiative was developed as part of the South African Reserve Bank's Vision 2025, with BankservAfrica and the Payments Association of South Africa as the main implementors (Business Tech 2022). The launch includes only P2P payments, but P2B payments are also under development (Stakeholder interviews 2023; Jumar 2023). There are no public plans to date to add use cases beyond P2P and P2B or to extend the IPS to non-bank participants, such as mobile money operators.
- **Virement Instantané.** The Moroccan central bank, Bank Al-Maghrib, and the clearing house, Groupement pour un Système Interbancaire Marocain de Télécompensation (GSIMT), jointly launched the bank IPS, Virement Instantané, in June 2023. The implementors plan its eventual rollout to all banks in Morocco to increase transaction speed, increase availability, and to simplify payments. The service offers instant P2P payments. There is a no-cost mandate for end-users for the first three months, after which banks are free to set their own transaction fee. There is a daily cap of \$1,960 (MAD 20,000). Workshops with banks and proof of concept testing informed the system architecture, which runs on ISO 20022 (Bank Al-Maghrib 2023).

TABLE 2.2 | Key data changes between SIIPS 2022 and 2023¹⁰

Description	2023	2022	Change	IPS (country/region)	Reason
 Number of IPS	32	29	3 added	<ul style="list-style-type: none"> PayShap (South Africa) Virement Instantané (Morocco) EthSwitch (Ethiopia) 	Launched since SIIPS 2022
IPS types					
 Cross-domain	14	10	4 added	<ul style="list-style-type: none"> Meeza Digital (Egypt) eKash (Rwanda) MauCAS (Mauritius) EthSwitch (Ethiopia) 	Now accessible by all licensed payment service providers (PSPs); EthSwitch newly launched
 Bank	10	9	2 added 1 reclassified to cross domain IPS	<ul style="list-style-type: none"> PayShap (South Africa) Virement Instantané (Morocco) MauCAS (Mauritius) 	Launched in 2023 Now accessible by non-banks, moved to cross-domain
 Mobile money	7	9	2 reclassified to cross domain IPS	<ul style="list-style-type: none"> Meeza Digital (Egypt) eKash (Rwanda) 	Both now accessible by banks, moved to cross-domain
Transaction data					
 Values data collected	22 IPS	13 IPS	10 IPS value data points added 1 IPS most recent value data not available in	<ul style="list-style-type: none"> eKash (Rwanda) NamPay (Namibia) InstaPay (Egypt) Madagascar mobile money SIMO (Mozambique) Taifa Moja (Tanzania) ZIPIT (Zimbabwe) GIMACPAY (CEMAC) Somalia National Payment System EthSwitch (Ethiopia) 	Data publicly available or submitted by central banks/IPS operators
				<ul style="list-style-type: none"> Gamswitch (The Gambia) 	Data for 2022 not available <i>No data from 10 IPS: SYRAD (Djibouti); MarocPay (Morocco); Gamswitch (The Gambia); TIPS (Tanzania); Meeza Digital (Egypt); Tunisia mobile money; PayShap (South Africa); Virement Instantané (Morocco); PAPSS; TCIB</i>

¹⁰ Unlike with physical infrastructure, an IPS continues to develop after it has launched; the table shows changes of system names, participants, and functionalities that have taken place since the release of the 2022 report.

Description	2023	2022	Change	IPS (country/region)	Reason
Use cases					
 G2P	6	7	1 added 2 reclassified	<ul style="list-style-type: none"> GIP (Ghana) ZIPIT (Zimbabwe) Natswitch (Malawi) 	G2P payments can be transferred to mobile accounts in Ghana through Ghana MMI Reclassified as G2P not channeled through the IPS
Inclusivity spectrum ranking					
 Basic	15	11	6 added 2 reclassified	<ul style="list-style-type: none"> InstaPay and Meeza Digital (Egypt) Madagascar mobile money NamPay (Namibia) Taifa Moja and TIPS (Tanzania) Kenya mobile money eKash (Rwanda) 	All provide person-to-business P2B (new information provided); Meeza Digital has now minimum channel functionality as it is cross-domain Kenya mobile money does not provide open-loop interoperability for person-to-person (P2P) payments yet, only for (P2B); eKash does not provide P2B payments yet
 Not ranked	12	13	4 added 5 reclassified	<ul style="list-style-type: none"> PayShap (South Africa) Virement Instantané (Morocco) EthSwitch (Ethiopia) Kenya mobile money InstaPay and Meeza Digital (Egypt) Madagascar mobile money Taifa Moja and TIPS (Tanzania) 	Three new systems; one IPS reclassified as per above Reclassified to basic level as per above



For an IPS to be a cross-domain system, it must have a switching capacity between commercial money instruments (such as debit electronic funds transfer (EFT), credit EFT, and domestic card instruments) and e-money instruments.¹² Operators use one of two approaches to achieve a cross-domain IPS.

The more common approach is to exchange e-money into commercial money instruments and then switch and clear them with other commercial money instruments on the same platform and between commercial money accounts. The value is then exchanged back into e-money and cleared to the recipient's account, such as a mobile money account. This is the case for Natswitch in Malawi, for which the scheme operating guidelines set out the switching of e-money and commercial money instruments (Natswitch Limited 2020; see Box 2.2).

Another approach uses a "quasi" cross-domain arrangement entailing the switching of e-money instruments and commercial instruments according to different scheme rules. In most cases, clearing happens in commercial money instruments, but the exchange of commercial money to e-money instruments on either

side of the transaction occurs outside of the system and mostly on proprietary platforms. MarocPay (Morocco) uses this type of arrangement, whereby it uses separate switches for e-money and commercial bank money (Bank Al-Maghrib 2020).

Not all cross-domain systems can be categorized based on the arrangement types, as scheme rules or comprehensive information is not available.

Box 2.2 is a snapshot of the use cases, functionalities, and transaction flow of the IPS in Malawi (Natswitch). A detailed case study is available in [Annex H](#).

As noted previously, the type of interoperability arrangement is a key part of differentiating between IPS types. Third parties facilitate most interoperability arrangements (29 out of 32; see Figure 2.2). This third party is a central switch, such as RSwitch for eKash (Rwanda) and Zimswitch for ZIPIT in Zimbabwe. Three mobile money IPS interoperate through direct integration with one another (multilateral interoperability) instead of through a central switch. The three are Kenya mobile money, Madagascar mobile money, and Taifa Moja in Tanzania.

¹² Card instruments can be cross-border as well as issued by non-banks in some jurisdictions. In most, if not all, jurisdictions in Africa, card instruments are commercial money instruments within the local jurisdiction.

BOX 2.2 | Natswitch in Malawi as of June 2023

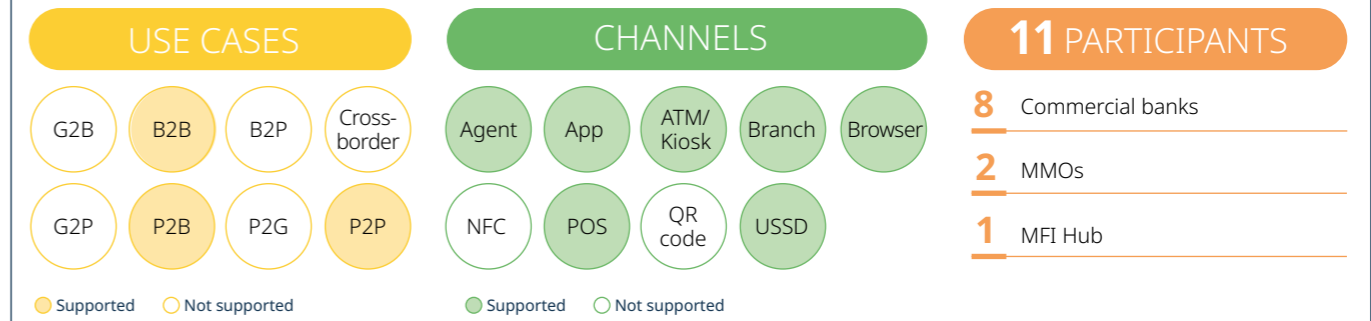


NATSWITCH | MALAWI

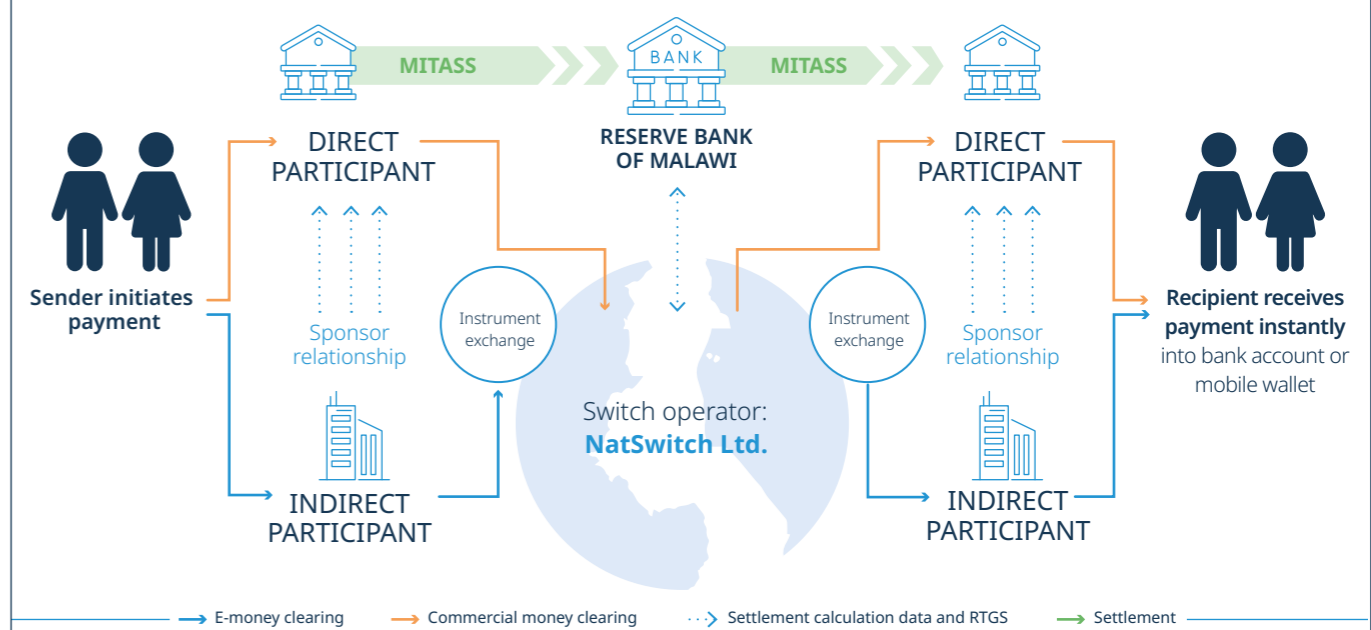
An ecosystem of payment providers



VALUE PROPOSITION	FOR CONSUMERS: Low-cost, instant payment services.	INCLUSIVITY RANKING	PROGRESSED: Most important use cases and channels supported; transparent end-user recourse mechanisms and full suite of use cases missing.
	FOR PROVIDERS: Interoperability platform with low transaction fees.		



TRANSACTION FLOW



The compound annual growth rate (CAGR) for transaction values and volumes between 2020 and 2022 was **61%** and **9.5%**, respectively.

FIGURE 2.2 | Breakdown of IPS interoperability arrangements (n=32)



Source: Adapted from CGAP 2019b

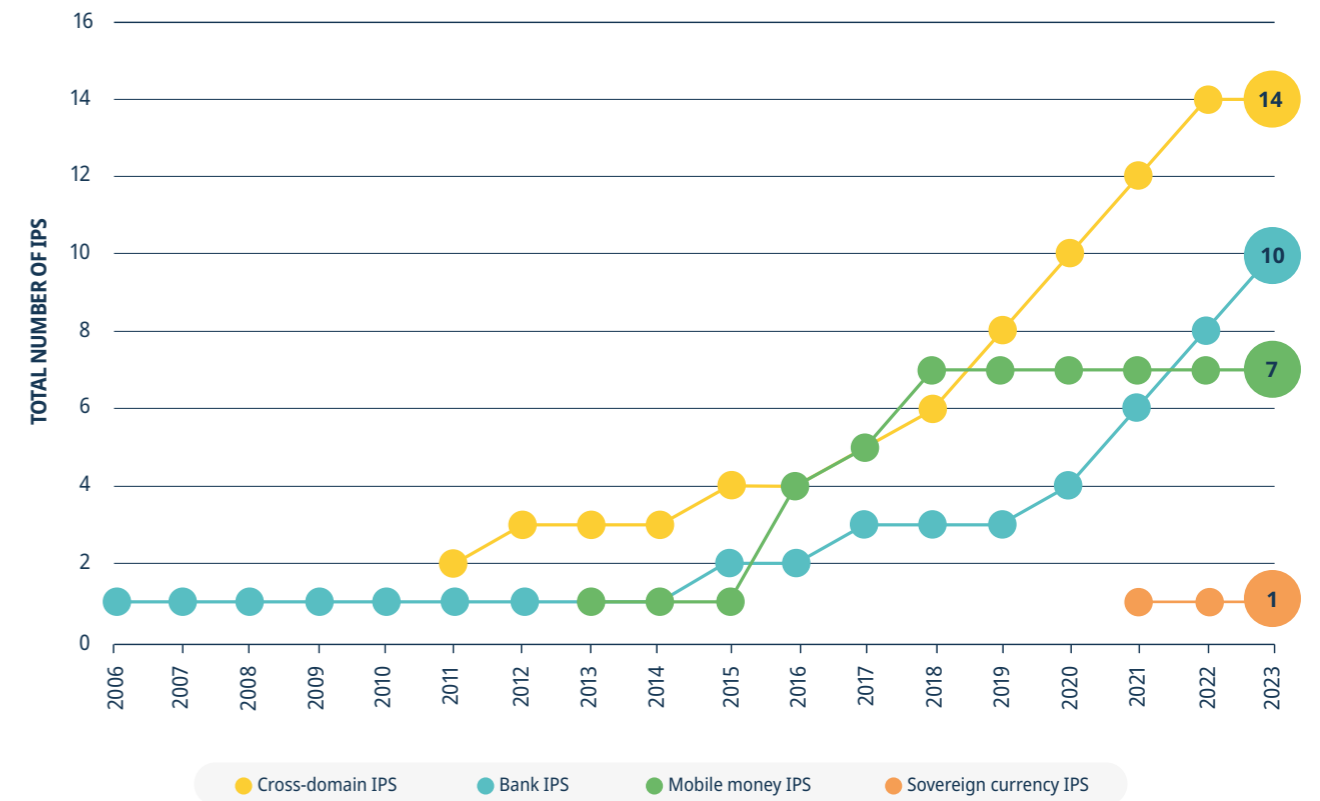
The market has focused more recently on cross-domain and bank IPS instead of mobile money IPS. Mobile money IPS were created earlier than most bank and cross-domain schemes; most of these mobile money IPS launched between 2013 and 2016. These systems typically came about in response to interoperability directives from the regulator, as in the case of Uganda, or to industry discussions, as in Tanzania (Figure 2.3; CGAP 2015; Onwuegbuchi 2017). No mobile money IPS have launched since 2018. The total number of mobile money IPS stands at seven systems.

Since 2018, governments in countries that lacked an IPS but had a dominant mobile money player have tended

to foster cross-domain IPS rather than prioritizing a single provider type. This trend contributed to the four cross-domain IPS that launched since 2021. For example, eKash in Rwanda was established in 2022 as a cross-domain IPS, despite the near-monopolistic presence of MTN's MoMo (Box 2.3; Gilbert 2022). The number of bank IPS have been steadily increasing: six systems have launched since 2020.

Box 2.3 is a snapshot of the use cases, functionalities, and transaction flow for the IPS in Rwanda (eKash).

FIGURE 2.3 | Evolution of IPS archetypes over time (n=32)



BOX 2.3 | eKash in Rwanda as of June 2023



EKASH | RWANDA

The industry's interoperability platform



VALUE PROPOSITION

- FOR CONSUMERS:** Convenient, low-cost digital payment cash alternative.
- FOR PROVIDERS:** No need for complex bilateral arrangements.

INCLUSIVITY RANKING

NOT RANKED: Does not fulfill basic inclusivity criteria as it does not enable P2B transactions.

USE CASES

- G2B (Supported)
- B2B (Supported)
- B2P (Supported)
- Cross-border (Not supported)
- G2P (Supported)
- P2B (Supported)
- P2G (Supported)
- P2P (Supported)

CHANNELS

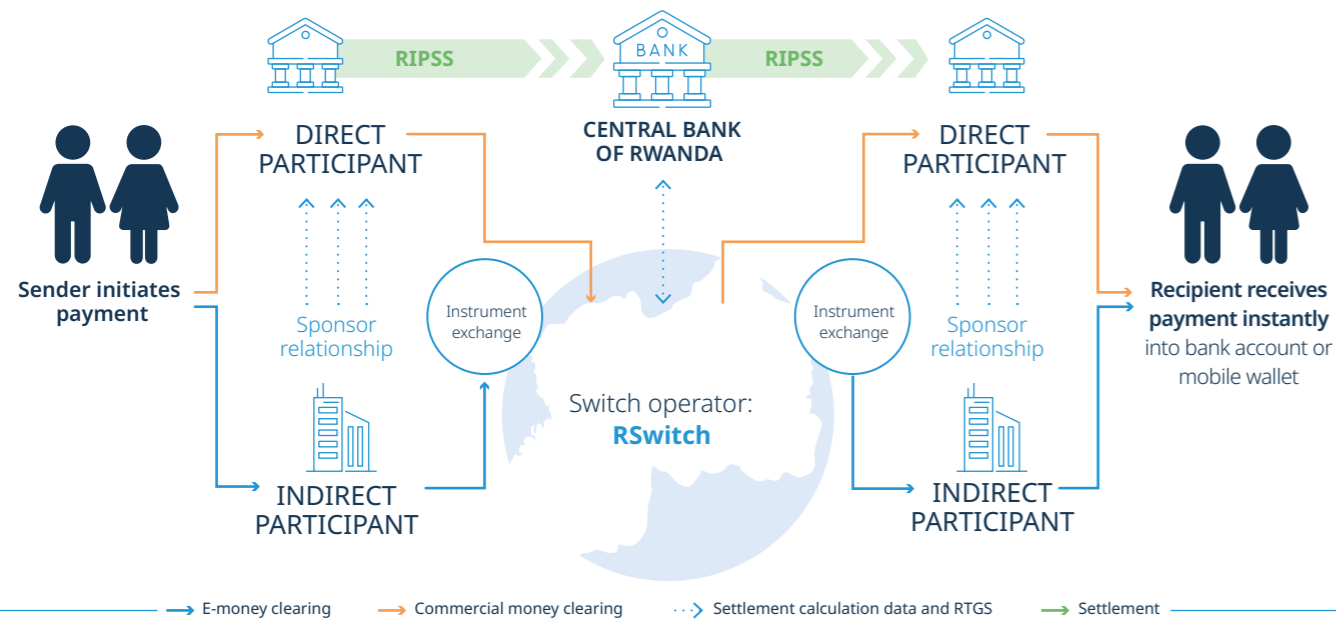
- Agent (Supported)
- App (Supported)
- ATM/Kiosk (Supported)
- Branch (Supported)
- Browser (Supported)
- NFC (Not supported)
- POS (Supported)
- QR code (Supported)
- USSD (Supported)

3+ PARTICIPANTS

- 2 MMOs
- 1+ Commercial banks (integrated recently)

● Supported ○ Not supported

TRANSACTION FLOW



Transaction values and volumes in 2022 were **USD 5.7m** and **1.2m**, respectively.

The eNaira in Nigeria is still the only live sovereign currency IPS on the continent, despite planned initiatives in several countries. Wallet activity for the IPS remains low, which indicates limited end-user adoption. To drive scale and assist end-users, the Ministry of Humanitarian Affairs, Disaster Management and Social Development opened four million eNaira wallets for planned social assistance payments in the second half of 2023 (Abdulraheem 2023). This initiative by the government aims to deepen financial inclusion via the planned circulation of the eNaira to beneficiaries.

There are another 17 Central Bank Digital Currency (CBDC) projects on the continent (Table 2.3), but they are still in the research phase and mostly focused on cash replacement (CBDC Tracker 2023). African countries make up a significant portion of those currently engaged with technical assistance for CBDC conceptualization at International Monetary Fund (IMF) and World Bank facilities (Stakeholder interview 2023). Examples include Ghana, which has finalized its eCedi testing. It includes an online/offline capability pilot in an isolated village

setting but had pushed out its envisioned 2022 launch until further notice due to economic conditions in the country (Amlanu 2023). The Bank of Mauritius, an IMF CBDC technical assistance beneficiary, has shared details about its progress towards conducting a retail CBDC pilot in the future. The Central Bank hopes to launch the pilot in late 2023 after a three-year exploration phase (CBDC Tracker 2023). In contrast, the Central Bank of Kenya recently announced that implementing a CBDC is not a priority after stakeholder consultations, but that it would continue to monitor CBDC developments (Central Bank of Kenya 2023).

The emphasis of CBDC diagnostics and research is trending towards general and synthetic CBDCs employed as decentralized real-time settlement and interoperability mechanisms, not as consumer-facing retail mechanisms. The interim trend is to prioritize interoperability for inter-PSP and inter-IPS decentralized use cases. There is less emphasis on direct retail use cases such as consumer wallets and ecosystems (Stakeholder interviews 2023).

TABLE 2.3 | CBDC projects in Africa

Country	Status
Côte d'Ivoire	Research
Egypt	Research
Eswatini	Research
Ghana	Pilot
Kenya	Research
Madagascar	Research
Mauritius	Research
Morocco	Research
Namibia	Research
Nigeria	Launched
Rwanda	Research
South Africa	Research
Tanzania	Research
Tunisia	Research
Uganda	Research
Zambia	Research
Zimbabwe	Research

Source: CBDC Tracker 2023



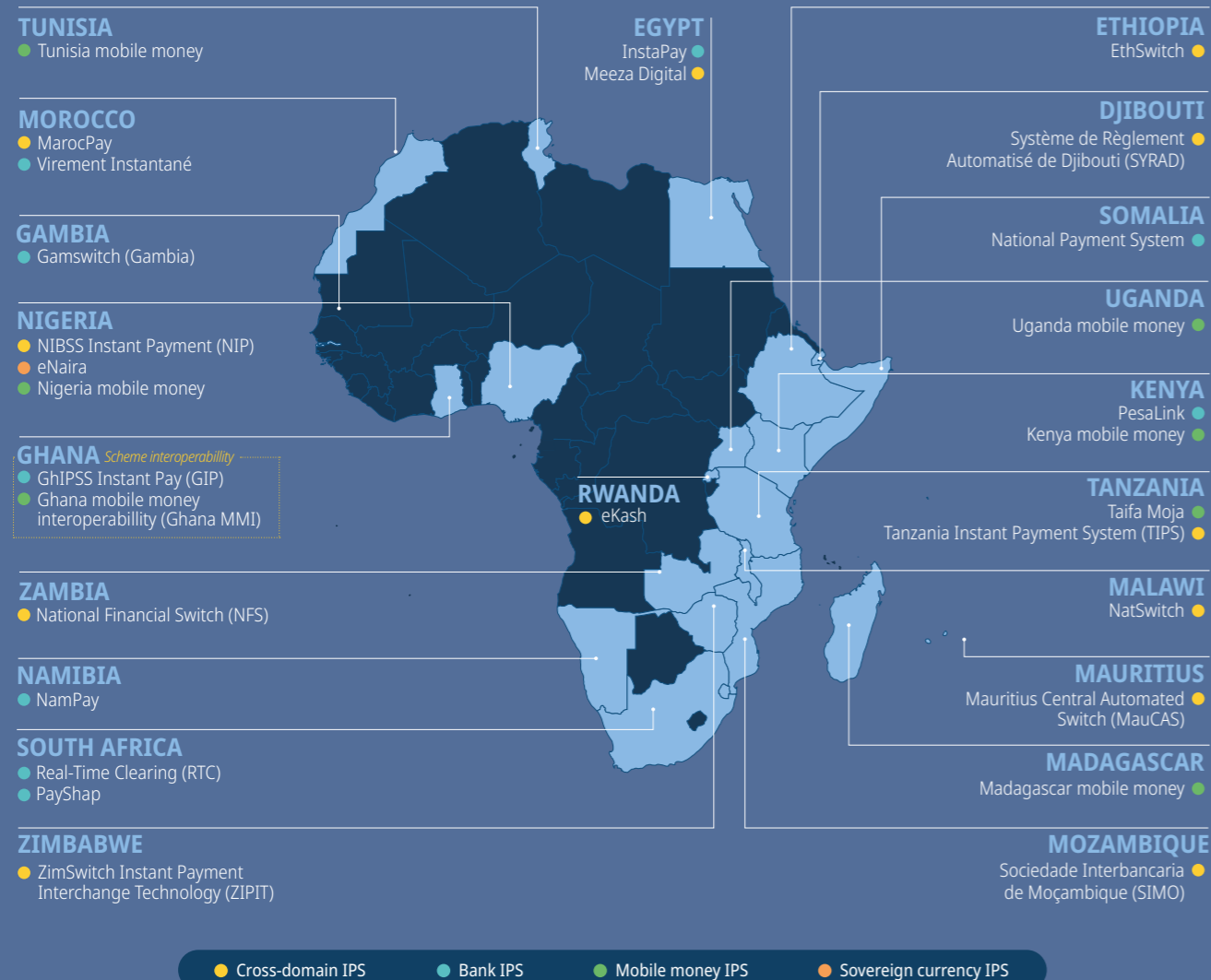
2.3 Geographic IPS coverage gaps persist in 2023

Three new systems have come online in the past year, increasing the number of live domestic IPS to 29 since the publication of SIIPS in 2022 (Map 2.1). Virement Instantané in Morocco and PayShap in South Africa added a second IPS to each of these countries. With these IPS launches, Morocco and South Africa joined the ranks of Egypt, Ghana, Kenya, Nigeria, and Tanzania as countries with multiple IPS. EthSwitch went live in 2022

as the first IPS in Ethiopia. Overall, 21 countries in Africa now have access to domestic IPS.

The Ghana Interbank Payment and Settlement Systems (GhIPSS) facilitates all to all interoperability, making Ghana the only country with multiple systems aggregated into a cross-domain ecosystem for end-users.

MAP 2.1 | Map of 29 active domestic IPS in Africa as of June 2023

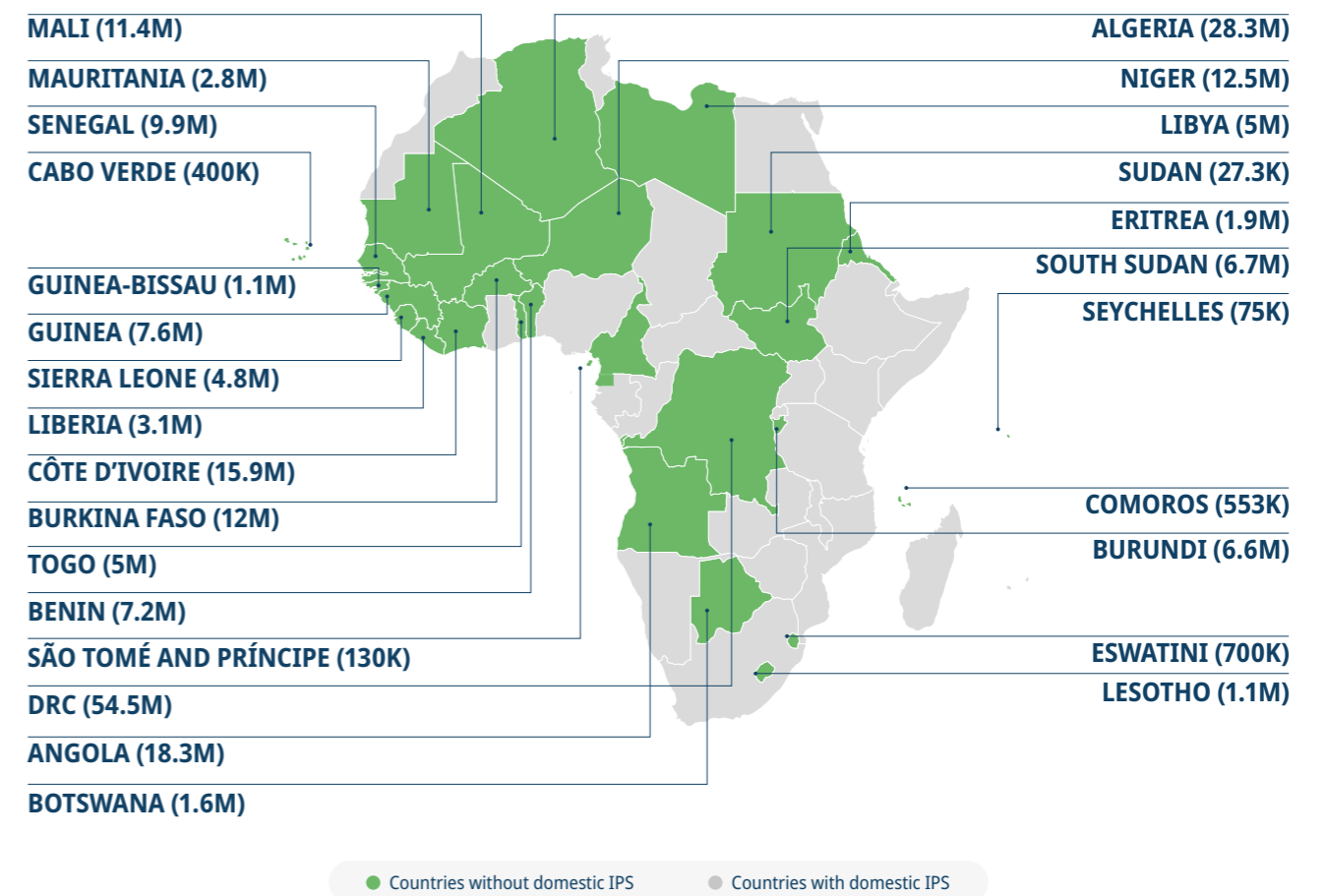


Despite growth in the number of IPS, a large proportion of Africa's adult population still lacks access to a domestic IPS. Gaps remain predominantly in North and West Africa (Map 2.2). There are 27 countries without domestic instant payment functionalities, considering that the regional IPS (GIMACPAY) in the Economic and Monetary Community of Central Africa, provides both regional

and domestic payment functionalities for six countries. Roughly half of Africa's adult population is therefore not served by domestic instant payment functionality.

For some of those who are not served by domestic IPS, regional facilities and private sector players fill the gap (see Box 2.4).

MAP 2.2 | Map of countries without domestic IPS (size of adult population)



BOX 2.4 | Dominant payment service providers in the absence of domestic or regional instant payment systems

Several markets shown in Map 2.2 have dominant PSPs that provide some instant payment services in their geographies. These can function as an alternative to an IPS. Markets where this is the case include Botswana, the Democratic Republic of Congo, the Seychelles, and South Sudan.

- **In Botswana**, Orange Money is the leading mobile financial services provider with over half of the market share (Botswana Communications Regulatory Authority n.d.).
- **Flash International** is the largest fintech and payments aggregator in the Democratic Republic of Congo, serving over 2 million customers. Safaricom's M-Pesa is the largest mobile money brand, capturing 61% of the market (Barton 2022).
- **In the Seychelles**, Airtel Africa is the largest mobile money group and has more than half of the market (Salter and Hyland 2022).
- **South Sudan** has a duopolistic market comprising of MTN and Zain (Global Comms Database 2022).
- **Wave** is a fast-growing African fintech offering mobile money services in Senegal and Côte d'Ivoire. The WAEMU regional IPS is still under development (African Business 2023).

There are also cross-border "IPS alternatives":

- **MFS Africa**, a pan-African mobile payment gateway, connects over 400 million mobile money wallets and 200 million bank accounts across 35 countries (Nnamani 2023).
- **Buna in the United Arab Emirates** connects banks across the Middle East and North Africa region. Buna launched its instant cross-border payment functionality in March 2023. It plans to provide cross-border functionality capable of reaching 172 million African adults.



In all, regional IPS have the potential to enable cross-border payments for more than half the continent's adult population. Three regional IPS have launched since 2020: GIMACPAY in the CEMAC region in 2020; Transactions Cleared on an Instant Basis (TCIB), launched by the Southern Africa Development Community (SADC) in 2021; and the Pan-African Payment and Settlement System (PAPSS) launched as a pilot in the West African Monetary

Zone (WAMZ) in June 2022. The three regional IPS will have sufficient geographic reach to provide cross-border instant payment functionality to most of the continent's adult population, once they are fully rolled out across the member states and all participants are integrated (as indicated in Map 2.3). In the case of GIMACPAY, it provides both regional and domestic payment functionalities, as it exists within a monetary union (see Box 2.5).

MAP 2.3 | Map of active regional IPS in Africa as of June 2023



GIMACPAY
CEMAC COUNTRIES (34.4M ADULTS):
 Cameroon, Central African Republic, Chad, Republic of Congo, Equatorial Guinea, Gabon.



PAN-AFRICAN PAYMENT AND SETTLEMENT SYSTEM (PAPSS)
WAMZ PILOT COUNTRIES (157.5M ADULTS):
 The Gambia, Ghana, Nigeria, Sierra Leone, Guinea, Liberia.



TRANSACTIONS CLEARED ON AN INSTANT BASIS (TCIB)
SADC COUNTRIES (223M ADULTS):
 Angola, Botswana, Comoros, DRC; Eswatini, Lesotho, Madagascar; Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia, Zimbabwe.

● Cross-domain IPS ● Bank IPS ● Mobile money IPS ● Sovereign currency IPS

*Tanzania is not a COMESA member state but will integrate with the COMESA regional IPS.

The box on page 74 is a snapshot of the use cases, functionalities, and transaction flow for the IPS in the Economic and Monetary Community of Central Africa (GIMACPAY).



BOX 2.5 | GIMACPAY in CEMAC as of June 2023



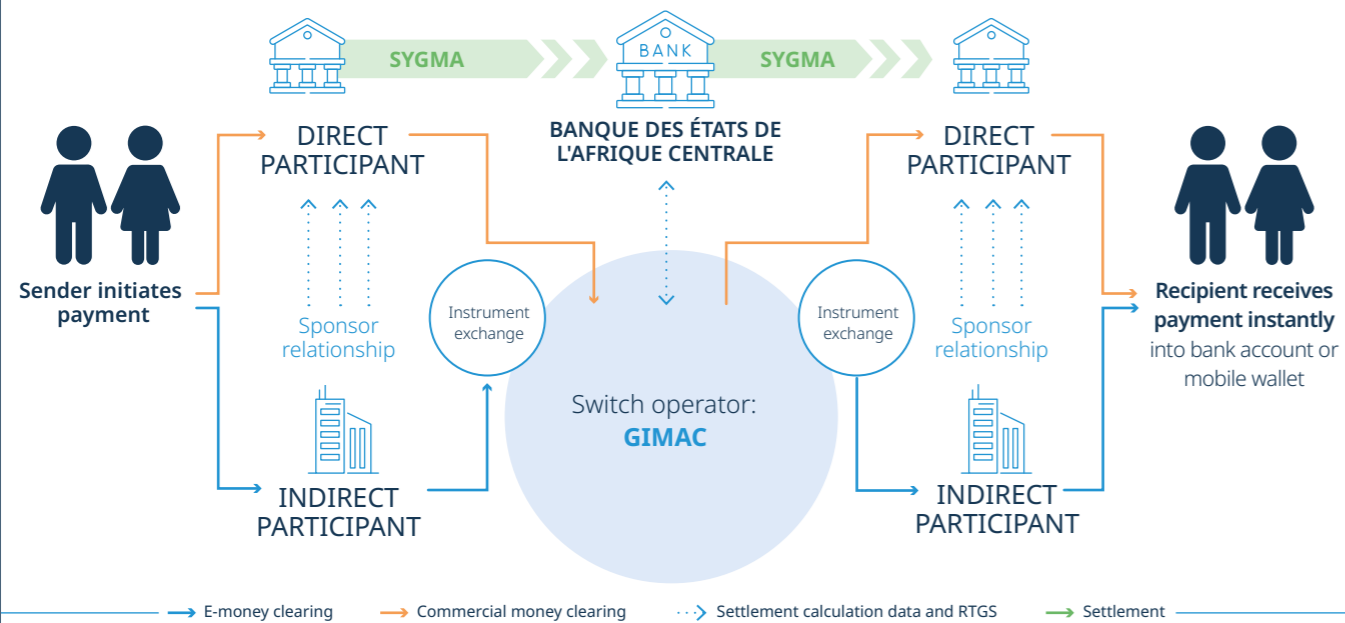
GIMACPAY | CEMAC

A convergent digital payment network

VALUE PROPOSITION	FOR CONSUMERS: Low-cost, instant payment services.	INCLUSIVITY RANKING	PROGRESSED: Supports the most used channels and essential use cases. Potential to achieve full range of use cases.
	FOR PROVIDERS: A stable intra-regional interoperability platform.		

USE CASES	CHANNELS	91 PARTICIPANTS
<ul style="list-style-type: none"> G2B B2B B2P Cross-border G2P P2B P2G P2P 	<ul style="list-style-type: none"> Agent App ATM/Kiosk Branch Browser NFC POS QR code USSD 	<ul style="list-style-type: none"> 53 Commercial banks 11 MMOs 11 MFIs 13 Aggregators 3 Others: central bank, post office, treasury
<ul style="list-style-type: none"> Supported Not supported 	<ul style="list-style-type: none"> Supported Not supported 	

TRANSACTION FLOW



The CAGR between 2020 and 2022 for volumes and values was 49% and 43%, respectively.

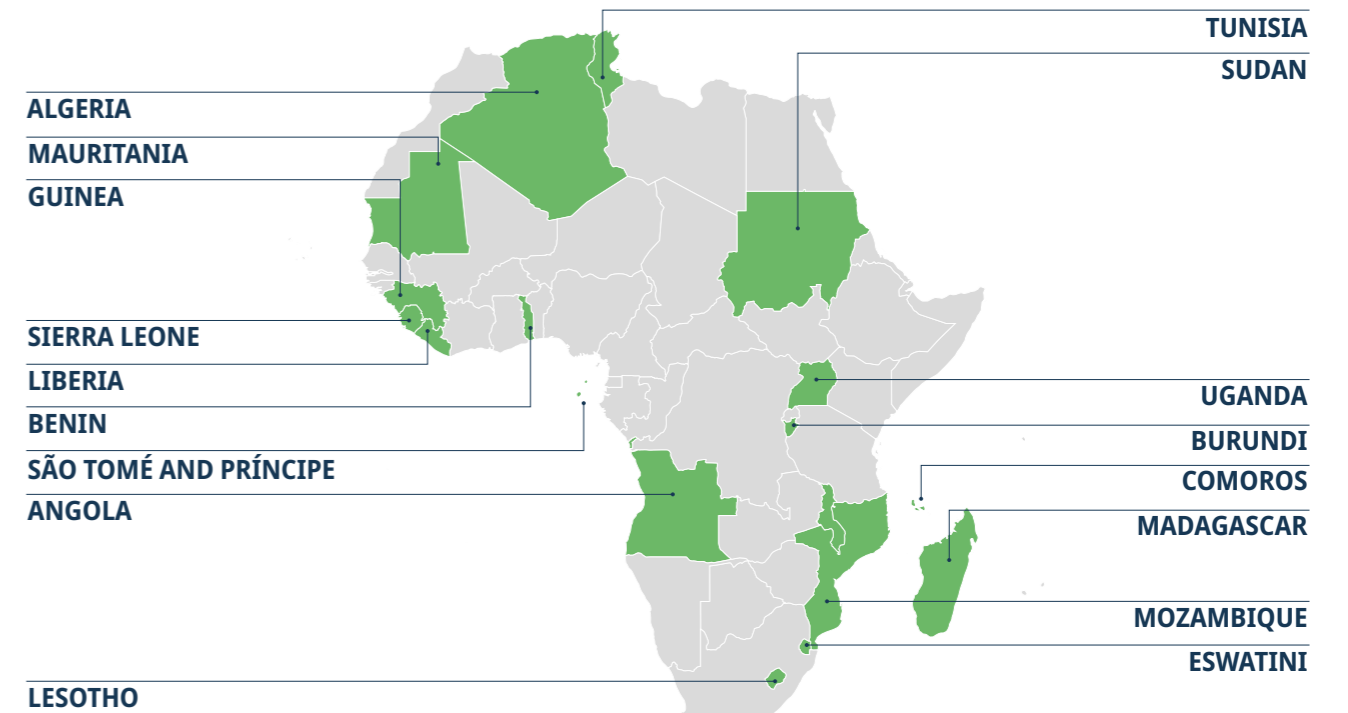
Multiple domestic and regional IPS are in development

There are plans to develop several domestic and regional IPS. If they come to fruition, the IPS landscape will become more saturated.

Seventeen countries across the continent are developing a domestic IPS, though only two of these are new IPS in development since the publication of the SIIPS 2022—Algeria and Tunisia (see Map 2.4). Three regional IPS are

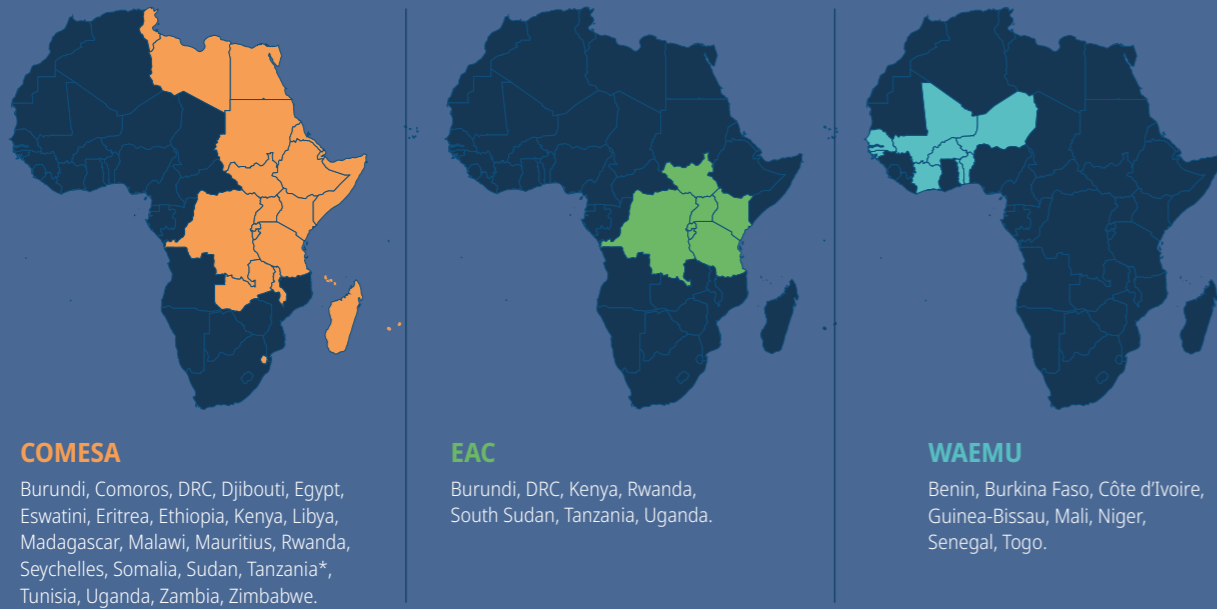
in development (see Map 2.5). These are in the Common Market for Eastern and Southern Africa (COMESA), East African Community (EAC), and West African Economic and Monetary Union (WAEMU) regions. The COMESA IPS, for example, plans to serve 22 countries across Southern and Eastern Africa and facilitate intra-regional micro, small, and medium enterprise (MSME) payments (see Box 2.6).¹³

MAP 2.4 | Domestic IPS in development (n=17)



¹³ Countries include Burundi, Comoros, DRC, Djibouti, Egypt, Eswatini, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Somalia, Sudan, Tanzania, Tunisia, Uganda, Zambia, and Zimbabwe.

MAP 2.5 | Regional IPS in development (n=3)



*Tanzania is not a COMESA member state but will integrate with the COMESA regional IPS.

BOX 2.6 | The Common Market for Eastern and Southern Africa (COMESA) regional instant payment system



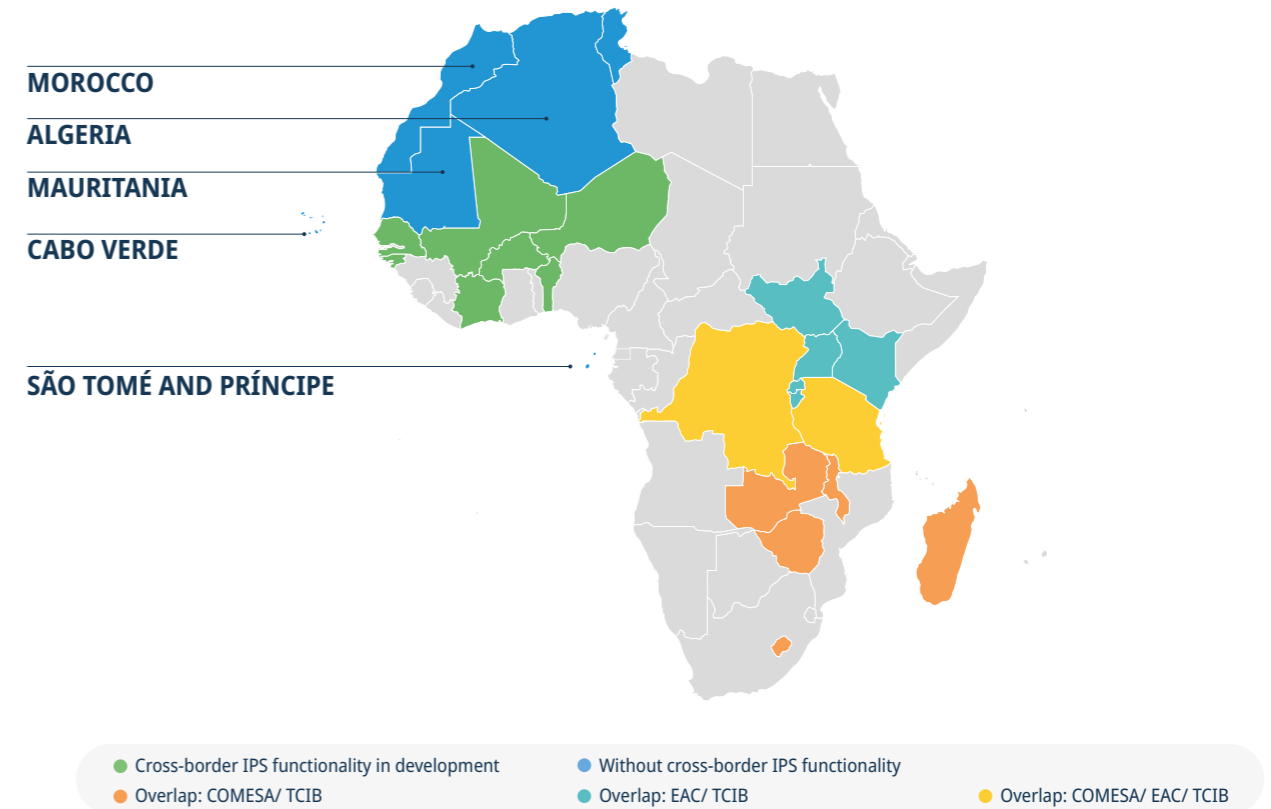
- **The COMESA Business Council (CBC)** is developing an integrated, low-cost, and interoperable digital payment platform focused on low-value cross-border trade within the region. This regional IPS is motivated by the need to transform the cash-based MSME ecosystem into digital markets and increase the volumes of formal cross-border retail. The regional IPS will follow a cross-domain model, supporting both e-money and commercial bank money instruments, and allowing direct participation from domestic IPS in addition to mobile money operators and banks. It aims to support P2B and B2B use cases in addition to P2P (COMESA Business Council 2022).
- **COMESA IPS** aims to follow a similar design approach to TCIB in terms of governance and business model. CBC is crafting the scheme rules to align with TCIB's as much as possible to assist the eventual integration of the two systems, according to stakeholder interviews conducted in 2023.

If all the planned IPS projects come to fruition, only seven countries on the continent will lack domestic IPS functionality. These countries are Botswana, Cabo Verde, DRC, Eritrea, Libya, South Sudan, and the Seychelles.

Furthermore, once COMESA launches, there will be some overlaps in cross-border instant payment functionality (Map 2.6). Nine countries, or 140 million adults, will have cross-border coverage from COMESA and from the TCIB cross-border instant payment functionalities.¹⁴ Similarly, the COMESA and EAC IPS will commonly serve 110 million adults in the East Africa region.¹⁵ The DRC and Tanzania will have duplicate coverage. Algeria, Cabo Verde, Mauritania, Morocco, and São Tomé and Príncipe will be the only remaining markets without cross-border IPS functionality. Algeria, Mauritania, and Morocco are part of BUNA, however, and can leverage some cross border opportunities with Middle East countries.

The WAEMU IPS, once launched, will provide a crucial instant payment interoperability utility to 29% of the adult African population residing in Western Africa (see Box 2.7). PAPSS will overlap with all the regional IPS on the continent once fully rolled out, though its target use cases have not yet been specified. Depending on the implementation dates, these overlaps will lead PSP participants and domestic IPS to decide for themselves which regional IPS they will join to enable cross-border transactions. If the market ends up fragmenting across too many cross-border participants, it is possible that no single IPS will reach the level of scale necessary to achieve network effects. In contrast, consolidation might happen as a natural consequence of regional and domestic IPS seeking sustainability through scale.

MAP 2.6 | Cross-border IPS functionality summary



¹⁴ Comoros, DRC, Eswatini, Madagascar, Malawi, Mauritius, Tanzania, Zambia, and Zimbabwe.
¹⁵ Burundi, DRC, Kenya, Rwanda, South Sudan, Uganda, and Tanzania.

BOX 2.7 | WAEMU regional IPS in development



With support from the African Development Bank and the Bill & Melinda Gates Foundation, the Banque Centrale des États de l'Afrique de l'Ouest (BCEAO) has completed its design phase and is in the process of implementing a cross-domain regional IPS. The BCEAO intends to enhance interoperability among payment service providers in the region, drive intra-regional trade, and deepen digital payment penetration for end-users. The IPS will include the provision of domestic instant payment functionalities in addition to cross-border payments. These capabilities are more readily accomplished as no foreign exchange is necessary within the monetary union. BCEAO will prioritize P2P and P2B use cases, and plans for future releases for subsequent use cases, according to stakeholder interviews conducted in 2023.

The pilot of the IPS including 16 participants is expected to begin later in 2023.

2.4 IPS operate across a range of transactions, channels, use cases, and participants

The IPS already in the market, as described in this section, operate at various scale levels and support a range of channels, instruments, and use cases. These elements contribute to the inclusivity of the systems for end-users.

2.4.1 Transaction flows are increasing in volume and value

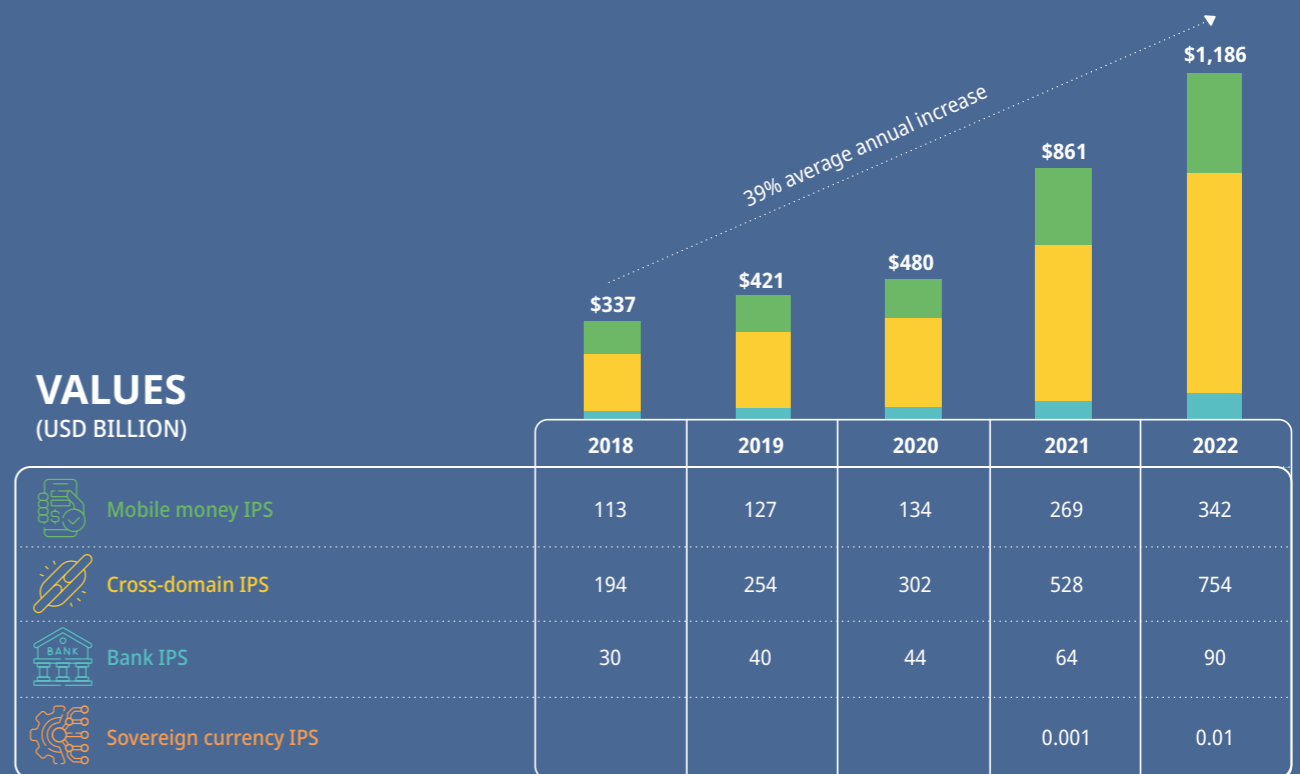
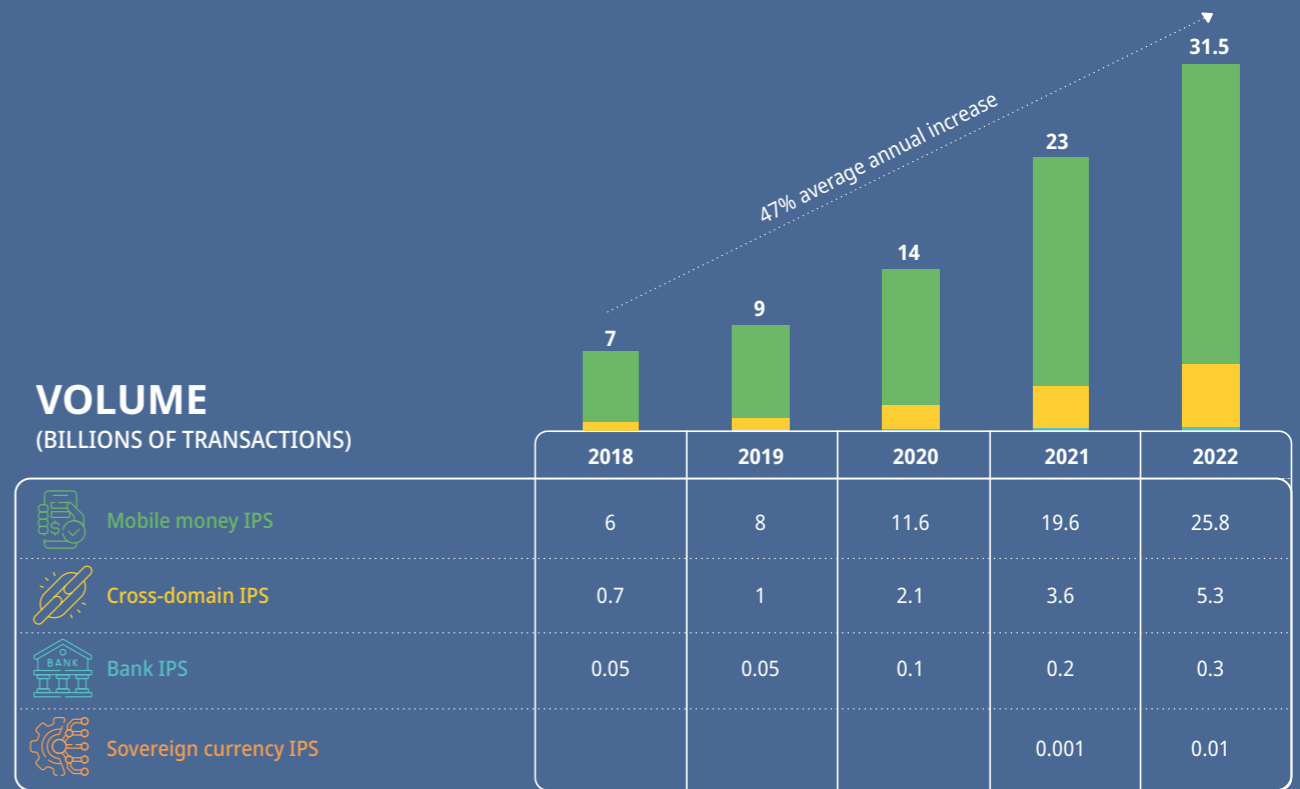
Over the past five years, the number of processed transactions has dramatically increased by an average annual rate of 47% (Figure 2.4).¹⁶ The rapid societal changes brought on by the COVID-19 pandemic drove acceleration in transaction growth. As existing systems have seen increased use and new systems have come online, the increase in transaction value has likewise grown by 252% between 2018 and 2022, reaching \$1.18 trillion in 2022.¹⁷

Mobile money IPS support the largest number of transactions while cross-domain IPS process the largest values. Bank IPS experienced the highest year-over-year growth in volumes since 2021, at 66%, compared to 48% for cross-domain IPS and 32% for mobile money IPS. The overall growth in volumes and values may be attributed to the steady increase in the number of cross-domain systems (see Box 2.8 for details on the transaction data).

¹⁶ One important aspect of updating the report from 2022 to 2023 involved ensuring that volumes and values are expressed in today's exchange rates. To achieve this, new central bank information was used where possible and adjusted accordingly. The respective exchange rates to the US\$ were applied on 31 March 2023 via oanda.com. Data from Gamswitch (The Gambia) was excluded in this graph due to 2022 figures not being available.

¹⁷ The following systems with information available have launched since 2020: InstaPay (Egypt); EthSwitch (Ethiopia); NamPay (Namibia); eNaira (Nigeria); eKash (Rwanda); Somalia National Payment System.

FIGURE 2.4 | Transaction volumes and values (n=22)



Note: The data in figure 2.4 above came from publicly available information on transaction flows or from the central bank or system operator in each respective country. This data is available for 22 IPS. The data for 10 IPS were unavailable. As a result, the actual transactions volumes and value may be underestimated. The data is missing from: SYRAD (Djibouti), Meeza Digital (Egypt), Gamswitch (The Gambia), MarocPay (Morocco), Virement Instantané (Morocco), PayShop (South Africa), TIPS (Tanzania), Tunisia mobile money, PAPSS and TCIB.

BOX 2.8 | Source for transaction data for instant payment volume and value

We particularly thank the central banks and IPS operators of Ghana, Kenya, Madagascar, Malawi, Mozambique, Rwanda, South Africa, Zambia, and Zimbabwe, and the Economic and Monetary Community of Central Africa (CEMAC), for providing data to help close information gaps.

System	Data source
> InstaPay (Egypt)	Central bank source
> EthSwitch (Ethiopia)	Operator source
> GIP and Ghana MMI	Central bank submission
> Kenya mobile money and PesaLink	Central bank and operator submission
> Madagascar mobile money	Central bank submission
> NatSwitch (Malawi)	Operator submission
> MauCAS (Mauritius)	Central bank source
> SIMO (Mozambique)	Central bank submission
> NamPay (Namibia)	Central bank source
> eNaira (Nigeria)	IMF
> NIP (Nigeria) and Nigeria mobile money	Central bank source
> eKash (Rwanda)	Central bank and operator submission
> Somalia National Payment System	Central bank source
> RTC (South Africa)	Operator submission
> Taifa Moja (Tanzania)	Central bank source
> Uganda mobile money	Central bank source
> NFS (Zambia)	Operator submission
> ZIPIT (Zimbabwe)	Operator submission
> GIMACPAY (CEMAC)	Operator submission

The different types of IPS support different purposes. For example, mobile money IPS support small value, frequent payments. For that reason, they account for 82% of IPS transaction volumes in Africa, despite representing only 29% of total IPS value. The average mobile money IPS transaction (\$17) is a far smaller value than the average bank (\$267) or cross-domain IPS transaction (\$142). Despite significant year-over-year

declines, Bank IPS continue to have the highest average transaction value (see Table 2.4). This suggests that customers are increasingly using bank accounts for lower-value transactions—though not as low as mobile money transactions.¹⁸ The average transaction size for cross-domain systems, in contrast, continues to fluctuate with no clear trend.¹⁹

18 Adjustments due to increased data availability and exchange rate changes contributed to the change in average transaction values from SIIPS 2022.
 19 Adjustments due to increased data availability and exchange rate changes contributed to the change in average transaction values in SIIPS 2022.

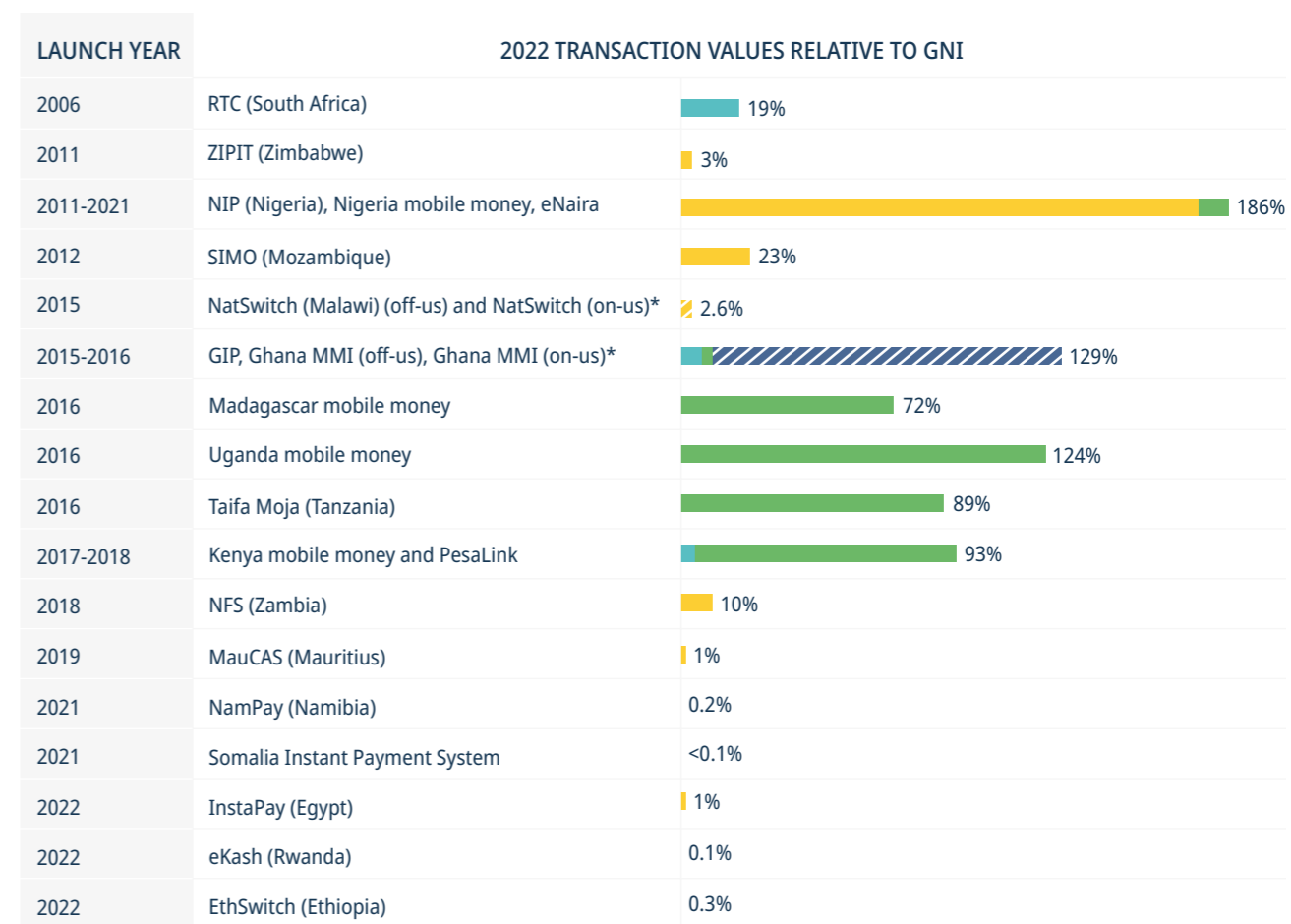
TABLE 2.4 | Average value per transaction per IPS type (US\$; n=21)

	2018	2019	2020	2021	2022
Sovereign currency IPS	-	-	-	-	20
Mobile money IPS	27	22	14	17	17
Cross-domain IPS	136	110	142	147	142
Bank IPS	653	445	386	313	267

The value of transactions relative to gross national income (GNI) indicates how much economic activity the system supports, the utility it provides to the end-user, and how important the IPS is to a country's economy. Figure 2.5 shows the IPS transaction values relative to their respective country's GNI in 2022 for those IPS where data was available. Value flows through nine of the IPS systems have grown

10% or more of GNI. Three countries have transaction values above 100% of GNI: Ghana (129%), Nigeria (186%), and Uganda (124%). A further six countries—Kenya, Madagascar, Mozambique, South Africa, Tanzania, and Zambia—processed values from 10% to 100% of GNI. The remaining eight domestic IPS where data was available are still processing values less than 5% of the domestic GNI.

FIGURE 2.5 | 2022 domestic IPS transaction values relative to GNI (n=21)



Legend: Cross-domain IPS (yellow), Bank IPS (blue), Mobile money IPS (green), Sovereign currency IPS (orange), On-us transactions (hatched)

*NatSwitch (Malawi) and Ghana MMI are the only IPS where information on on-us transaction data is available.

Though the data suggest a correlation between the age of an IPS and its scale, in fact, scale is more strongly predicted by the proportion of adults in the country with a mobile money account. For instance, in Ghana and Kenya, customers use mobile money systems that support mobile data-lean channels, such as USSD, substantially more than they use bank systems. This high usage rate correlates with the proportion of adults with mobile money accounts: 60% in Ghana and 69% in Kenya (World Bank 2021c).

The types of payment transactions and payment values passing through an IPS may also be influenced by individual market dynamics. For example, in markets with dominant players (whether bank, mobile money provider, or fintech), on-us transaction values are larger than IPS values. On-us transactions refer to transactions between two users of the same PSP, as these can settle within the same service provider or financial institution, unlike with off-us or switched transactions. In Ghana, mobile money on-us transactions have high transaction values relative to GNI (115%) in comparison to the off-us Ghana MMI (2.9%). Similarly, the value of off-us transactions processed by Natswitch in 2022 accounted for only 0.6% of the total transactions (Reserve Bank of Malawi 2022).

On-us transactions likely account for a large share of the total value of mobile money payment transactions within the digital payment ecosystem and may distort the reported data of IPS. There can be several reasons for a high share of on-us transactions. For one, the retail payments market could be dominated by a single provider and hence there is limited need for end-users to make digital payments to wallets or accounts by a different PSP. Another is that interoperability fees increase the cost to the end-users, who then opt to transact within the same institution—for example by owning several mobile money wallets or having multiple bank accounts with different institutions. There could also be limited awareness among end-users about the possibility of sending funds to wallets or accounts across different providers via shared platforms.

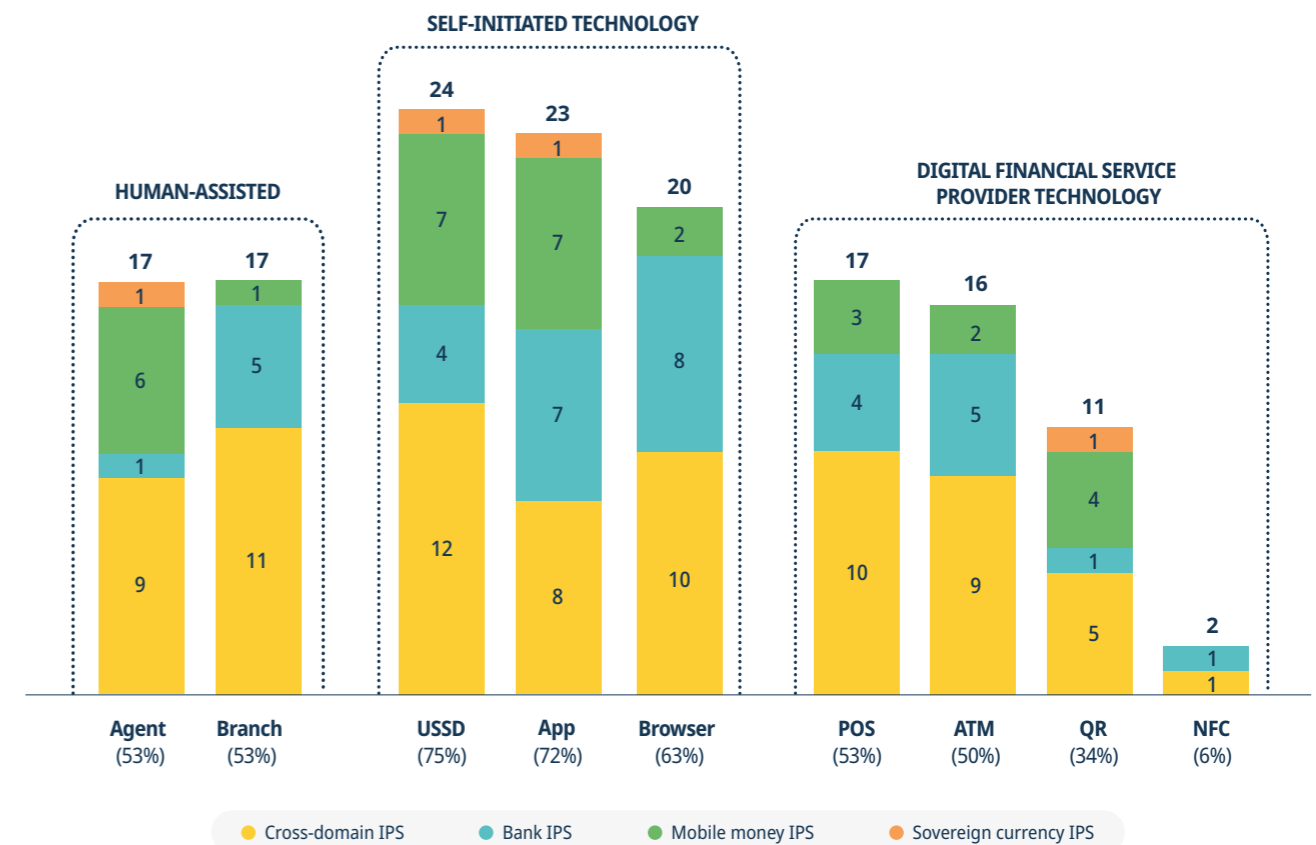
IPS operators and central banks use different data collection methods and very few differentiate between on-us and off-us/switched transactions. Consequently, the available data does not yet allow for a more granular assessment of the effect of the on-us/off-us transactions dynamic on IPS value proposition and scalability. More transparency around IPS transaction data availability and how it is calculated and aggregated is required, as is a greater understanding of end-user transaction drivers.

2.4.2 IPS support a variety of channels, though USSD dominates

Seventy-five percent of IPS in Africa, including all four system types, support USSD channels (Figure 2.6).²⁰ App and browser channels are the second- and third-most-prevalent channels, respectively. All mobile money IPS and the majority of bank and cross-domain systems also support app channels. Unlike with USSD channels, however, end-users need a smartphone and internet connection to use digital payment apps, browser payments, and to scan online quick response (QR) codes.

Human-assisted channels such as mobile money or bank agents and bank branches are available for more than half of the systems, like POS and ATM channels. While QR code payment channels are not yet available to the same level as the other channels, they are on the rise, with 11 systems offering QR code payment channels compared to eight last year.²¹ NFC is only possible with MauCAS (Mauritius) and RTC (South Africa).

FIGURE 2.6 | Channels facilitated by IPS type, multiple mentions (n=30)



²⁰ Data is not available for SYRAD in Djibouti and PAPSS.
²¹ GIMACPAY (CEMAC), Ghana MMI and GIP, Kenya mobile money, MarocPay, MauCAS, eNaira (Nigeria), NIP (Nigeria), Taifa Moja and TIPS (Tanzania), and Uganda mobile money.

BOX 2.9 | Domestic instant payment systems with a channel agnostic approach

Several systems have adopted a channel agnostic approach, whereby the system does not provide for a specific set of channels but rather permits payment service provider participants to determine what channels to provide. The approach is intended to enable participants to assess end-user needs and develop relevant interfaces. ZECHL, the owner and operator of Zambia's National Financial Switch, has adopted this approach.

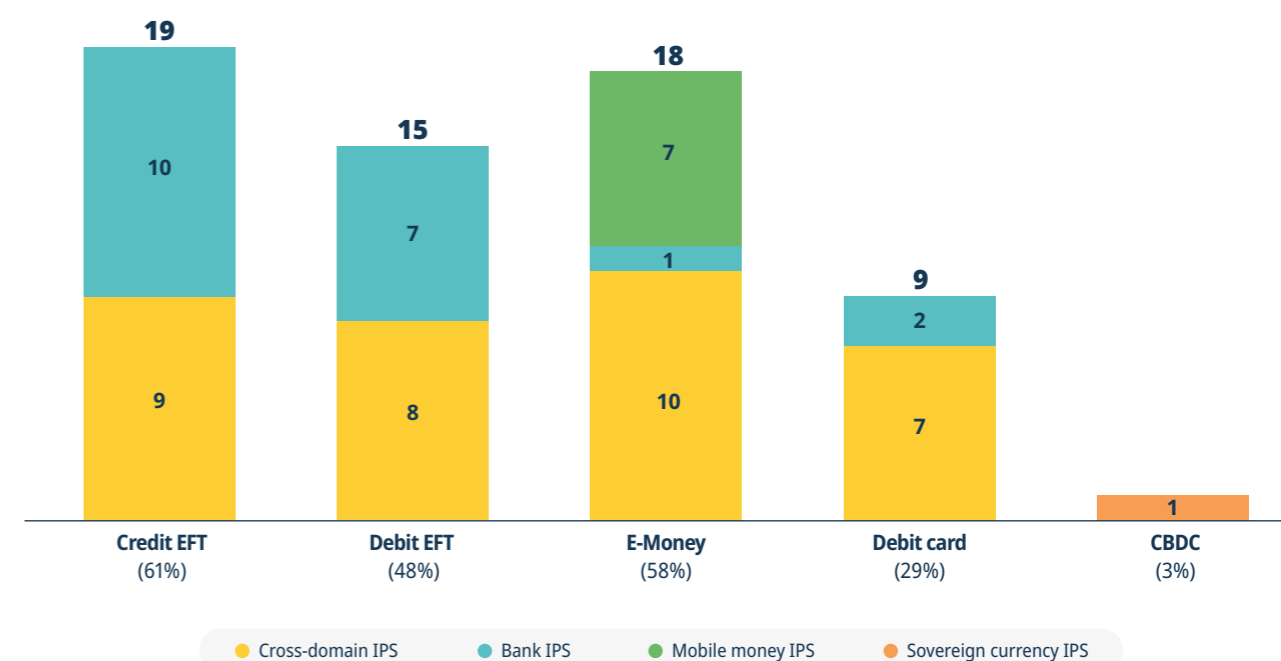


The scheme participants within a system often dictate the channels it supports. For example, since mobile money IPS typically comprises MMO participants, they are more likely to offer agent, USSD, and app channels. Bank IPS and cross-domain IPS, in contrast, tend to support a broader range of channels. Cross-domain IPS support more channels by virtue of the various types of participants in the system. Bank IPS also support more channels, though they do so simply because of the legacy of channels, instruments, and infrastructure within the prudential framework. It makes economic sense for institutions to leverage existing channels and infrastructure.²² IPS are increasingly channel agnostic, meaning they support all channels that their respective participants offer (Box 2.9).

2.4.3 The supported instruments align with the type of IPS

All mobile money and cross-domain instant payment systems support e-money instruments (Figure 2.7).²³ Cross-domain IPS also support a range of commercial money instruments, such as credit and debit EFTs. As a result, the cross-domain IPS can exchange, switch, and clear e-money and commercial money instruments from payment initiation to termination within its own scheme rules and overarching governance. Mobile money IPS and bank IPS typically allow for different PSPs to interoperate only using the same instrument types. Mobile money IPS only process similar e-money instruments, and likewise, bank IPS exclusively process similar commercial money instruments, primarily credit EFT with a secondary focus on debit EFT. Sovereign currency IPS process currency via a CBDC instrument.

FIGURE 2.7 | IPS instruments supported, multiple mentions (n=31)



2.4.4 P2P use cases dominate, though P2B and B2B are growing

All IPS support the P2P use case; the P2B use case for merchant payments is also prevalent: 68% of IPS support both (Figure 2.8). Apart from one IPS (Kenya mobile money), all domestic IPS provide open loop, interoperable P2P payments as a core service.²⁴ Kenya introduced mobile money interoperability for P2B payments through multilateral integration, whereas the different MMOs negotiated the terms for interoperability for P2P use cases. The instantaneous aspect of P2B payments is important for merchants who expect electronic transactions to function the same way as cash (CGAP 2019a).

Few IPS enable use cases beyond P2P and P2B. Nine IPS explicitly support business-to-business (B2B) payments, including Meeza Digital (Egypt), Ghana MMI and GIP, Natswitch (Malawi), Virement Instantané (Morocco), NamPay (Namibia), NIP (Nigeria), RTC (South Africa), and NFS (Zambia). B2B is another key use case for aggregating scale and retaining digital currency in the economy. The three regional IPS support B2B cross-border transfers,

as does NIP in Nigeria (Stakeholder interview 2023). So far, only NIP in Nigeria and Ghana MMI and GIP support the broadest range of use cases.

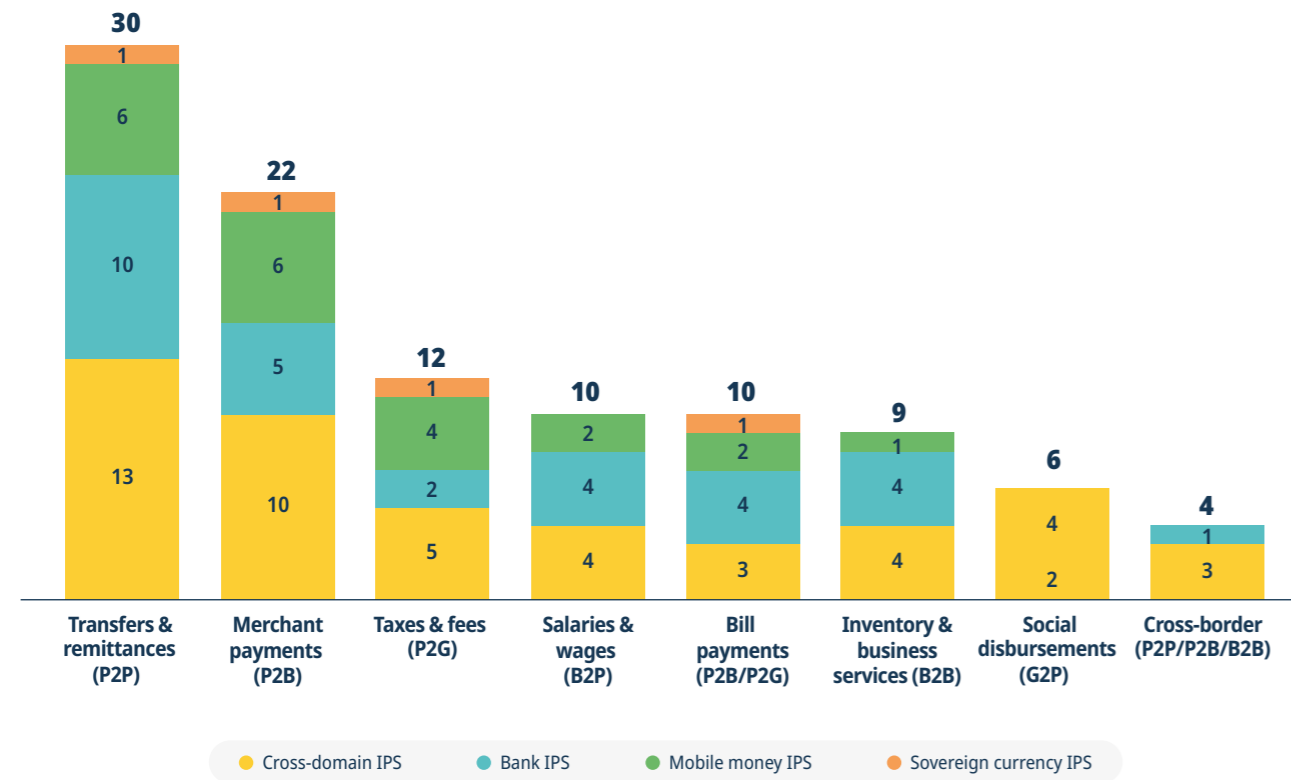
There are critical gaps in the support of use cases beyond P2P and P2B, especially for government-to-person (G2P) payments (Box 2.10). Only six IPS support G2P use cases. Notably, none of them are bank IPS. Yet G2P payments are critical for recipients and for IPS to achieve scale, due to the sheer volume of adults who receive either social assistance payments, a pension transfer, or a government wage. Specifically, in 2021 more than 10% of Africa's adult population received a government transfer (World Bank 2021c). During the COVID-19 pandemic in particular, at least 117 million adults across 33 countries received social transfers (Kazeem 2020). Economically vulnerable households rely on government payments as a major source of weekly or monthly income (World Bank 2022b). Further research is needed on the G2P-IPS integration nexus in Africa.

²² Mobile money-based channels and instruments were only developed in the past twenty years when telecommunication companies realized that end-users were transferring airtime to one another (Piper 2020). The relatively new introduction of e-money instruments, as well as the difficulty innovating around e-money channels, explains why mobile money IPS support relatively fewer channels than other schemes.

²³ Data is not available for SYRAD in Djibouti.

²⁴ Ibid.

FIGURE 2.8 | Enabled use cases by IPS type, multiple mentions (n=31)



BOX 2.10 | G2P value chains in instant payment systems

The following examples highlight ways that IPS can facilitate G2P payments:

- The Government of Morocco uses **MarocPay (Morocco)** to distribute education subsidies through the Tayssir program (Hadri 2022).²⁵
- **Leveraging Uganda’s mobile money IPS, Airtel and MTN** (Ministry of Gender Labour and Social Development 2022) disbursed COVID-19 relief funds to teachers. The National Social Security Fund (NSSF) of Uganda also transmits payments to the PSP of the beneficiary’s choice—the payment process required beneficiaries to submit their preferred provider among the MMOs operating in the country (NSSF 2017; Delilah 2022).
- **Madagascar mobile money** is being utilized for education grant transfers, the Human Development Cash Transfer (HDCT), and the Fiovota Cash Programme for drought-affected households. About 60% of HDCT beneficiaries receive payment through mobile money accounts (Women’s World Banking 2016).
- **NIBSS in Nigeria** hosts and validates payments for all of the government’s social intervention programs in the country. The Central Bank of Nigeria (CBN) is planning on dispensing welfare payments in eNaira under the National Social Safety Net Program-Scale Up (Tunji 2023). As of March 2023, four million eNaira wallets were created for the purpose of social disbursements (Idowu 2023).
- **GIP and Ghana MMI** facilitate the transfer of G2P payments into an account associated with the biometric e-zwich card system. Recipients of social assistance payments can move the money into mobile wallets or bank accounts at ATMs through the two Ghanaian systems (Stakeholder interview 2023).

25 Note that this data point is surmised from secondary research, as no data was available on MarocPay. As such, it is subject to confirmation.

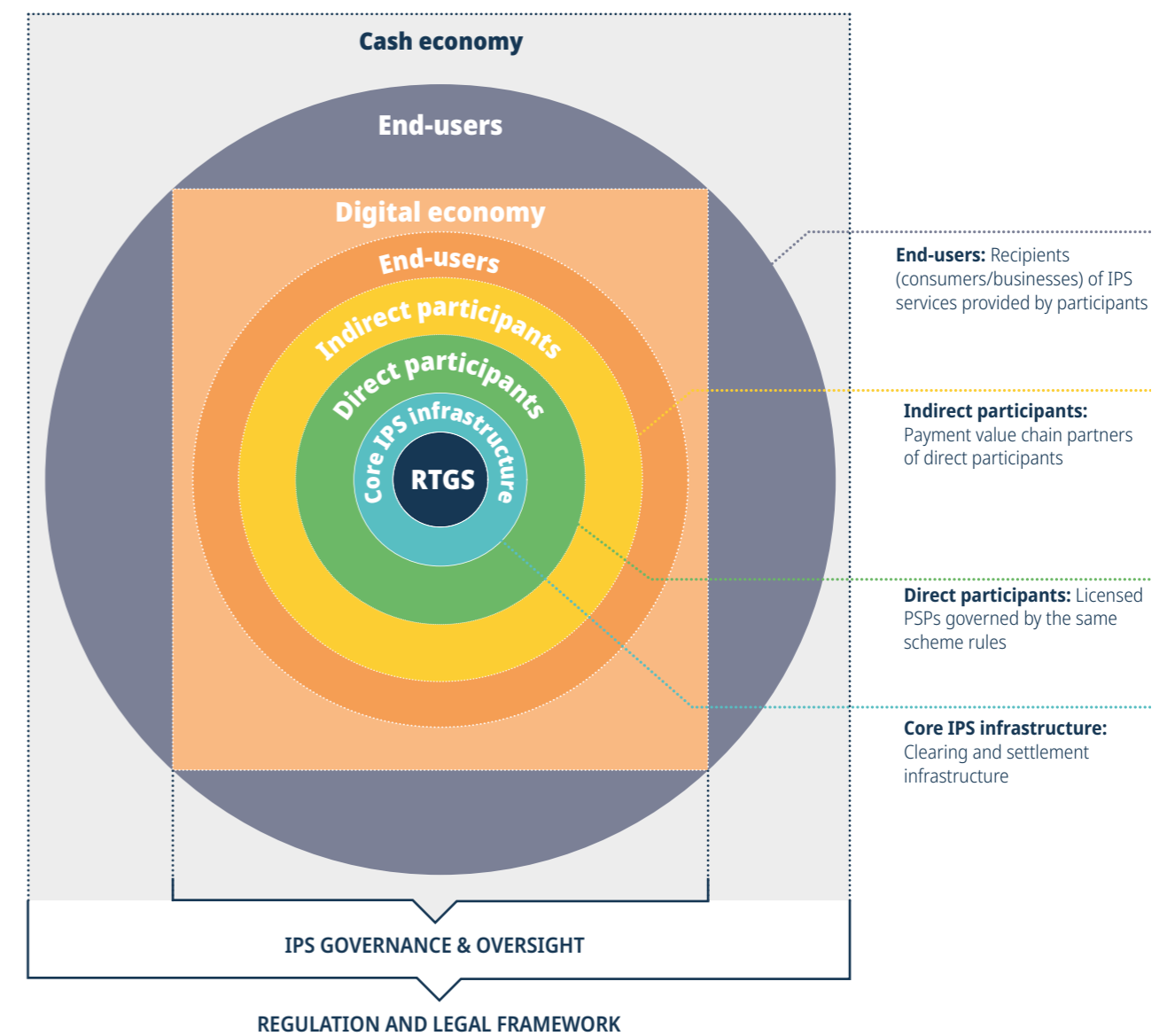
2.4.5 IPS actors span from central banks to end users, and include a range of direct and indirect participants

The IPS value chain includes several layers of actors. An IPS must meet certain requirements for it to provide reliable instant payment services to end users. These include effective management, dependable switch operations, and prompt settlement (AfricaNenda 2021; CGAP 2021; World Bank 2021b). A set of key actors

serving various and occasionally overlapping roles deliver these requirements within the IPS value chain (Figure 2.9).

The diagram illustrates the various actors in the IPS value chain, the function or role they fulfill, and how.

FIGURE 2.9 | IPS value chain



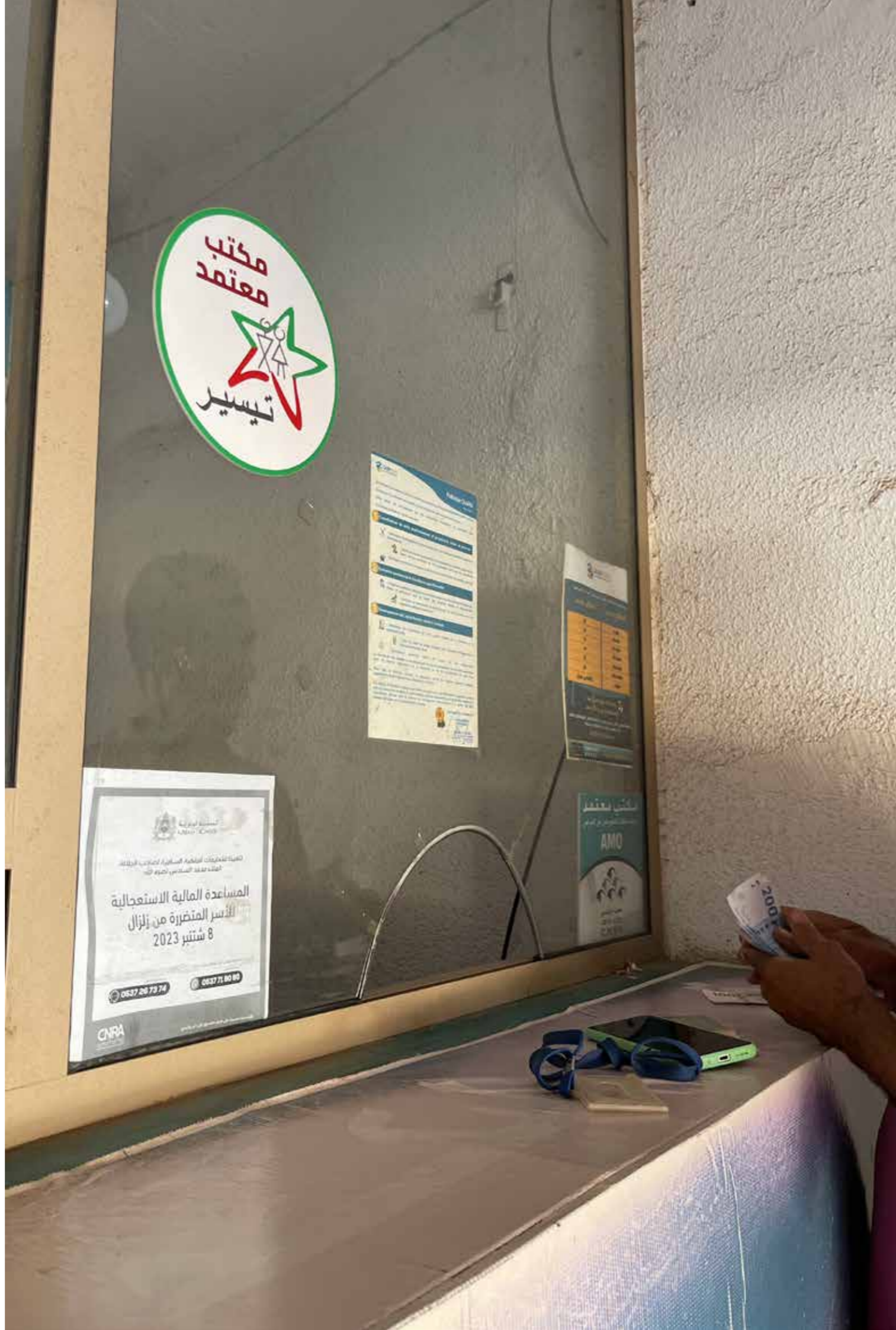


A real-time gross settlement provider

At the center is real-time gross settlement (RTGS), which mainly resides at the domestic central bank. Settlement can occur instantly, on a deferred net basis, or through account pre-funding between two or more institutions. Deferred net settlement (DNS) through the RTGS either the same day or the next day (T+1) is the most common approach, deployed by 23 IPS.²⁶ Typically, there is only one settlement window a day, like in Malawi's Natswitch and Zambia's NFS. However, delaying settlement increases the obligation balances and requires more capital or liquidity to secure it. In contrast, having multiple settlement windows can relieve the build-up of net obligations and mitigate the settlement and counter-party risks within the system. For that reason, some IPS have more than one daily settlement window, such as Ghana's GIP, Kenya's PesaLink, and Nigeria's NIP, each of which have two settlement cycles per day; Rwanda's eKash can settle funds multiple times within a day.

The central banks serve as the settlement agent since they hold the accounts. Third-party switches consolidate the settlement instructions for participants. Afreximbank is the settlement agent for PAPSS, while TCIB settles through the South African Reserve Bank or via correspondent banks. In the case of e-Naira in Nigeria, settlement is instant—that is one of the main value propositions of CBDC systems. However, recourse and risk mitigation are more complex with instant settlement. In four systems, namely Kenya mobile money, Madagascar mobile money, Uganda mobile money, and Tanzania mobile money (Taifa Moja), participants hold pre-funded accounts with one another to allow for settlement, which can increase trust and speed among participants. However, this approach also ties up large sums of capital in these accounts and can become complex to manage as the PSP pool grows.

²⁶ Information on the settlement modality is not available for Meeza Digital (Egypt), MarocPay (Morocco), EthSwitch (Ethiopia), and SIMO (Mozambique).



A clearing and settlement provider

A third-party, like a switch, performs clearing and settlement functions in 24 IPS. In country-specific IPS, these third-party companies are either privately-owned or a joint public-private arrangement. For instance, ZIPIT in Zimbabwe is operated by Zimswitch (participant-owned), and Gamswitch (jointly owned) is Gambia's national payment switching organization. These switches provide clearing, routing, reconciliation, confirmation, and netting of transactions between IPS participants (CGAP 2021).²⁷ In three cases, namely for Kenya mobile money, Madagascar mobile money, and Tanzania mobile money (Taifa Moja), there is no third-party provider; clearing instead is done bilaterally between PSPs. In the other five cases, the central bank operates the system, as in the Central Bank of Djibouti (SYRAD); Central Bank of Nigeria (eNaira); Bank of Mauritius (MauCAS); Central Bank of Somalia (National Payment System); and Bank of Tanzania (TIPS).

In the case of regional IPS, clearing either occurs through a centralized payment hub to which participants are directly integrated (hub arrangement) or through a domestic financial switch that is linked to a central hub (hub-switch arrangement). Two of the three regional IPS—PAPSS and GIMACPAY—use hub arrangements and TCIB follows a hub-switch arrangement.



Direct participants

Direct participants are PSPs that sign participation agreements with the IPS system and fulfill criteria laid out in the scheme rules. Direct participants include commercial banks, MMOs, MFIs, and other non-bank PSPs that link to and utilize the IPS' core clearing infrastructure (CGAP 2021). Direct participants can also include those PSPs that have settlement accounts at the central bank, but there is no uniform definition across the IPS.

²⁷ The switching and routing function includes routing tables, accounts, and the proxy management and updates of transactions. The switch operators' functions also pertain to the handling of anomalies, return transactions, and tracing and clearing of disputes.

Commercial banks dominate and anchor cross-domain systems as the primary direct participants. So far, the median number of participants in bank IPS is 23; the median is 22 for cross-domain systems, and it is five for mobile money systems (Figure 2.10).²⁸ Commercial banks make up all of the bank IPS participants and almost two-thirds of the median number of cross-domain IPS participants. Since mobile money providers do not have settlement accounts with the central bank, they rely on commercial banks to play a settlement role in mobile money IPS. In short, banks are core to most IPS on the continent.

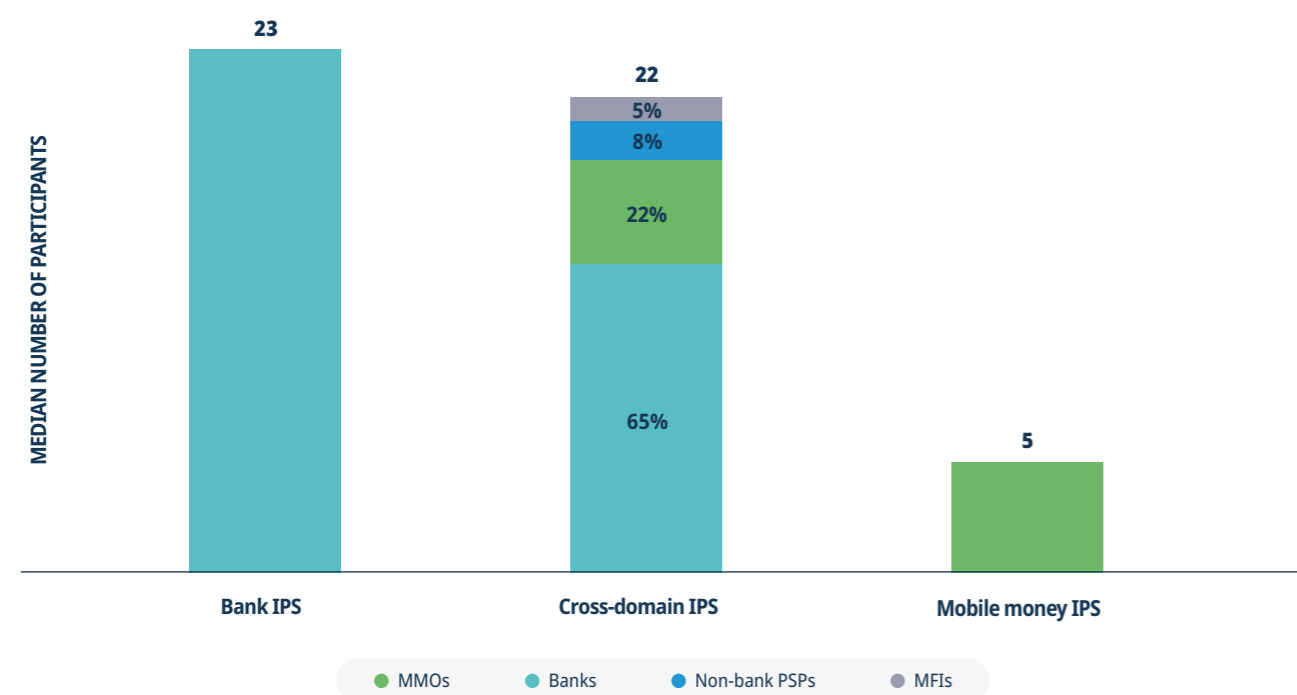
Banks' central role comes not just from their status as direct participants but also from the fact that commercial banks may hold shareholding rights or seats on an IPS board of directors, depending on the IPS ownership structure (as in Zambia's NFS; see Box 2.12). For example, Standard Bank Group and Ecobank are key commercial bank players across Africa and participate in five and six systems, respectively.²⁹

In contrast to the central status of commercial banks, MMOs face constraints in their access to these shared systems. Overall, they represent only a median of 22% of cross-domain participants and must comply with banking standards to participate. Airtel, MTN, Orange Mobile, and Vodacom have the largest presence in the region. Airtel participates in five domestic IPS while Orange Mobile and MTN each participate in three; Orange has a particularly strong presence in North and West Africa (Orange 2020).

As for MFIs, they currently participate directly in only a few IPS: GIMACPAY (CEMAC), NIP (Nigeria), Natswitch (Malawi), and Zambia's NFS. Though MFIs have a widespread presence in rural areas with many accessible touchpoints and are important financial institutions for low-income users, they often do not meet the participation criteria to integrate with a domestic IPS due to insufficient legal and supervisory frameworks (United Nations 2013).



FIGURE 2.10 | Median number of participants per IPS type (n=28)



²⁸ Information is not available for SYRAD (Djibouti) and EthSwitch (Ethiopia). NIP and e-Naira (Nigeria) were excluded for this calculation due to being outliers. The e-Naira system in Nigeria has 33 bank participants so far while NIP in Nigeria has 450 participants, including 225 commercial banks, 200 microfinance banks, 7 MMOs, and 18 non-bank PSPs.
²⁹ This information is available for 25 schemes.



Indirect participants

Indirect participants can fulfill two possible roles. First, they can be PSPs that access the IPS indirectly to provide payment services to end-users, these may include smaller PSPs, MMOs, fintechs, and MFIs in systems that only allow banks to be direct participants. Indirect participants typically require a sponsor PSP that is directly integrated, especially for settlement but also for clearing. For example, PesaLink in Kenya and GIP in Ghana allow PSPs, MMOs, fintechs, and savings and loans to indirectly access their respective bank IPS. In Nigeria, microfinance banks, fintechs, and super agents can indirectly access NIP.

The second role for indirect participants is that of a technical service provider offering key IPS services to direct participants. Technical service providers partner with direct participants to provide front- or back-end services. Fintechs, for example, provide direct participants with an opportunity to collaborate with providers of emerging technologies.

Current fintech examples in the IPS ecosystem include Famoco, which enables the Bank of Ghana to distribute salaries and pensions through their hybrid POS that includes biometric authentication of citizens. Moreover, the regional IPS in CEMAC, GIMACPAY, has recently partnered with Maviance, a digital financial service provider, to offer online e-commerce payments and agent banking services, among others (GIMAC-AFR n.d.)—these services have not yet been rolled out. In Rwanda, eKash supports the integration of third-party overlay service providers, such as Pivot Access and mVend (Bank of Rwanda 2021).³⁰ Other providers such as internet technology companies and marketing/advertising firms provide specialized services—for example, Malawi's NatSwitch has involved Mitra Systems for computer hardware support, Globe Internet Ltd. to manage networking and telecommunications, and BPC Banking Technologies Group for technical support on the switching infrastructure, according to stakeholder interviews conducted in 2023.

³⁰ mVend is a technology solutions provider of software and applications; Pivot Access builds and manages software platforms.



End users

End-users are the ultimate target clients of the IPS value chain (see Chapter 3 for discussion of their use of instant payments). The IPS, its respective components, and its actors enable end-users to participate in the digital economy.



Owners, Partnerships and Regulators

It is important to call out the role of ownership, governance, oversight, and intermediation in an IPS ecosystem, even though these do not fit neatly within the participant value chain.

The owner of a payment system is responsible for its success, maintains its liquidity, and absorbs the gains or losses attributed to performance. There are three different ownership structures among African IPS: central bank ownership, which applies to 11 systems; participant ownership, which applies to 12 systems, and joint ownership between participants and the regulator, which applies to seven systems.³¹

Governance structure determines the way an IPS is run and establishes the guidelines for participants to interact in a collaborative environment (World Bank 2021b). In line with the ownership structure, there are 12 IPS governed through private associations made up of the direct participants of the system.³² Public-private partnerships (PPP) govern 11 systems. The remaining eight systems follow a central-bank governance arrangement.³³ The appropriate governance model depends on various factors, such as market dynamics, competition angles, and digital payment market size. PPP approaches like in the PIX system in Brazil have been highly successful at achieving inclusive outcomes, as they enable collaboration between PSPs and regulators.

Separate from governance is IPS regulatory oversight. All domestic IPS and GIMACPAY in CEMAC are regulated and supervised by their respective central banks. The arrangement is slightly different for the other two regional systems: the SADC Payment System Oversight Committee oversees TCIB and the PAPSS Governing Council oversees PAPSS.

There are two emerging regional IPS intermediary types in Africa: technical service providers and payment aggregators.

Technical service providers offer a range of services to the IPS, including participant integration, system management, switch operation, and transaction or account aggregation. TerraPay, for example, provides services as a technology partner to GIMACPAY and TCIB. GIMACPAY also works with SONEMA, a global internet technology actor, to provide the technology to integrate participants; TCIB utilizes GluGlobal and Traderoot to provide integration services. PAPSS leverages StoneX's cloud-based solution to serve as the settlement messaging platform.

The second type of regional intermediary are payment aggregators. MFS Africa, for example, provides payment platform aggregation to GIMACPAY and PAPSS (GIMAC-AFR n.d.; Mwareya & Simango 2022; Association of African Central Banks 2021).

Payment service providers and financial institutions may resist joining regional IPS without an incentive to integrate with the system—this hurdle is elaborated on further in Chapter 4. Several initiatives, highlighted in Box 2.11, have been put in place to attract more participants and enhance the value proposition of the systems.

BOX 2.11 | Initiatives to grow the participant ecosystem



Regional initiatives are enhancing the value proposition or making it easier for participants to integrate with the system.

- **TCIB** has onboarded 13 additional participants since May 2022. BankservAfrica implemented initiatives to enhance TCIB's attractiveness among prospective participants by simplifying scheme rules and introducing provisional memberships as a transitional step to be considered a fully functional member (BankservAfrica 2023). AfricaNenda collaborated with TCIB in ecosystem building workshops as well to raise awareness.
- **WAEMU's** planned IPS will include an API integration layer to increase ease and lower costs for participants that are not ISO 20022 certified, according to a stakeholder interview conducted in 2022.

31 Regulator-owned: SYRAD (Djibouti), GIP and Ghana MMI, MarocPay (Morocco), MauCAS (Mauritius), eNaira (Nigeria), Somalia National Payment System, TIPS (Tanzania), TCIB, Tunisia mobile money.

Participant-owned: InstaPay (Egypt), Kenya mobile money, PesaLink (Kenya), Madagascar mobile money, NamPay (Namibia), Natswitch (Malawi), eKash (Rwanda), PayShap and RTC (South Africa), Taifa Moja (Tanzania), Uganda mobile money, and ZIPIT (Zimbabwe).

Ownership information was not available for EthSwitch (Ethiopia) or Virement Instantané (Morocco)

32 No information was available for EthSwitch (Ethiopia).

33 Private association model: Kenya mobile money, PesaLink (Kenya), Madagascar mobile money, MarocPay (Morocco), NamPay (Namibia), Natswitch (Malawi), eKash (Rwanda), PayShap and RTC (South Africa), Taifa Moja (Tanzania), Uganda mobile money, and ZIPIT (Zimbabwe).

PPP model: GIMACPAY (CEMAC) and PAPSS, InstaPay (Egypt), Gamswitch (The Gambia), NIP and Nigeria mobile money, SIMO (Mozambique), Meeza Digital (Egypt), TCIB, and Virement Instantané (Morocco), NFS Zambia.

Central-bank model: SYRAD (Djibouti), GIP and Ghana MMI, MauCAS (Mauritius), eNaira (Nigeria), Somalia National Payment System, TIPS (Tanzania), and Tunisia mobile money.

2.5 Standards and technical integration can facilitate trust

Several technical factors influence how much trust direct and indirect participants, as well as end users, have in an IPS and how easily the former can integrate with it. These factors include the messaging standards that specify the manner, format, and content of the payment messages sent between participants; the data security

standards, including end-user identity methods; and multi-stakeholder fraud management. Recourse in the event of fraud or scams is also critical for end users. Finally, to grow their portfolio of direct participants, IPS need streamlined approaches to integration using APIs or other technical methods.

2.5.1 IPS build trust with standards for messaging and security, but progress needed on recourse

Use of the ISO 20022 standard for messaging is on the rise. Messaging standards ensure that data transmitted between different systems, institutions, or countries can be accurately and efficiently understood and processed (World Bank 2021d). Of the 21 systems about which AfricaNenda could access transactional data, 10 domestic IPS as well as PAPSS and TCIB use of the ISO 20022 messaging standard.³⁴ Six IPS use the ISO 8583 standard.³⁵ Nigeria's NIP and e-Naira, and Tanzania's TIPS developed proprietary messaging standards. NIP and NFS Zambia (currently using ISO 8583) plan to migrate to ISO 20022 in the future (Stakeholder interviews 2023).

As it relates to data security and end-user identification, IPS may use proxy IDs to identify end users. Proxy IDs can be more secure than requiring an end-user to input their account number, because fraudsters could use financial account numbers to perform unauthorized withdrawals. Proxy IDs are also more convenient because they are typically simple to remember and use (World Bank 2021e). For this latter reason, proxy IDs drive inclusion. Of the 21 systems for which information was available, 16 offered proxy IDs.³⁶ Thirteen of these offer mobile phone numbers as proxy IDs.³⁷ QR codes are particularly

popular for systems that support merchant payments, such as Ghana MMI and GIP, GIMACPAY, Kenya mobile money, NIP and eNaira (Nigeria), Taifa Moja (Tanzania), TCIB, and Uganda mobile money. These systems also offer mobile phone number proxies, or the bank verification number in the case of the Nigerian systems.

Apart from mobile phone numbers and QR codes, there are three IPS that have developed IPS-specific aliases:

- **InstaPay (Egypt)** uses an instant payment address, which is a simplified address of the end-user's account number (name@InstaPay; InstaPay n.d.).
- **MauCAS (Mauritius)** allows for payment using a pseudonym rather than through an account number to facilitate ease of transfer. These proprietary IDs are centralized at the IPS level.
- **PayShap in South Africa** assigns individual end-users a ShapID based on a bank-registered mobile phone number; a ShapID for a business is based on its bank account details, e.g. [mobile number]@[bank name] (PayShap 2023).

34 Information was not available for SYRAD (Djibouti); Meeza Digital (Egypt); EthSwitch (Ethiopia); Kenya mobile money; Madagascar mobile money; MarocPay (Morocco); SIMO (Mozambique); Taifa Moja (Tanzania); Tunisia mobile money; and Uganda mobile money.

35 ISO 20022: InstaPay (Egypt); PesaLink (Kenya); Gamswitch (The Gambia); GIP and Ghana MMI; MauCAS (Mauritius); Virement Instantané (Morocco); NamPay (Namibia), eKash (Rwanda), PayShap (South Africa).

ISO 8583: GIMACPAY (CEMAC), Natswitch (Malawi), Nigeria mobile money, RTC South Africa, NFS Zambia, and ZIPIT (Zimbabwe).

36 Information was not available for: SYRAD (Djibouti); Meeza Digital (Egypt); EthSwitch (Ethiopia); Gamswitch (Gambia); SIMO (Mozambique); NamPay (Namibia), Tunisia mobile money.

37 GIP and Ghana MMI, Kenya mobile money, PesaLink (Kenya), Madagascar mobile money, MarocPay (Morocco), Nigeria mobile money, PAPSS, Taifa Moja and TIPS (Tanzania), TCIB, Uganda mobile money, NFS Zambia.

Though IPS have developed ways to enable end-users to transact more conveniently, they have work to do to ensure a balance between consumer and merchant protections within their systems. Appropriate recourse is a balance between enabling end-users to voice legitimate concerns and preventing fraudulent chargebacks (see [Annex E](#) for more information on the types of fraud encountered). IPS must have recourse mechanisms in place to address underlying transaction issues without affecting the original financial transfer.³⁸ At present, these mechanisms are nascent. Most IPS do not offer direct recourse for end-users but rather monitor dispute resolution between participants or offer mediation (Stakeholder interviews 2023). One exception is ZIPIT in Zimbabwe, which offers a dedicated chat for end-users to lodge complaints. Operated by Zimswitch, complaints are resolved within 48 hours at the system level. See [Annex D](#) for more information on recourse mechanisms.

2.5.2 About half of IPS rely on APIs for technical integration and access

Open APIs allow providers to access a system or to provide additional services to IPS operators. APIs are available for 15 IPS to date.³⁹ Participants can access Nigeria's NIP only through its open API structure, which enables participant integration, processing, and monitoring, as well as overlay services such as payee confirmation. For financial institutions that have not yet upgraded to ISO 20022, an API layer can provide integration with the system—this is the case with eKash (Rwanda). PesaLink (Kenya) is developing their switch to allow banks to integrate via APIs. The development of APIs for overlay services outside of Nigeria depends to some extent on the regulatory position with respect to open banking and open finance (discussed in Chapter 5).



38 If transaction consent was obtained fraudulently or under duress, the transaction can be withdrawn, provided it has not yet been processed or settled. From the end-user perspective, there may also be issues related to transaction errors, should it happen that consumers send money to the wrong number or mobile money merchant code in error and then find that the transaction cannot be simply reversed without following due process and/or obtaining the consent of the receiving party. Erroneous transactions that cannot easily be recalled negatively affect end-user trust in digital payments. However, if transactions are too easily recalled, merchants may not use the IPS of fear of fraudulent chargebacks. These occur when transactions are recalled by an end-user after leaving a place of business even though they did get the goods, or a service was performed.

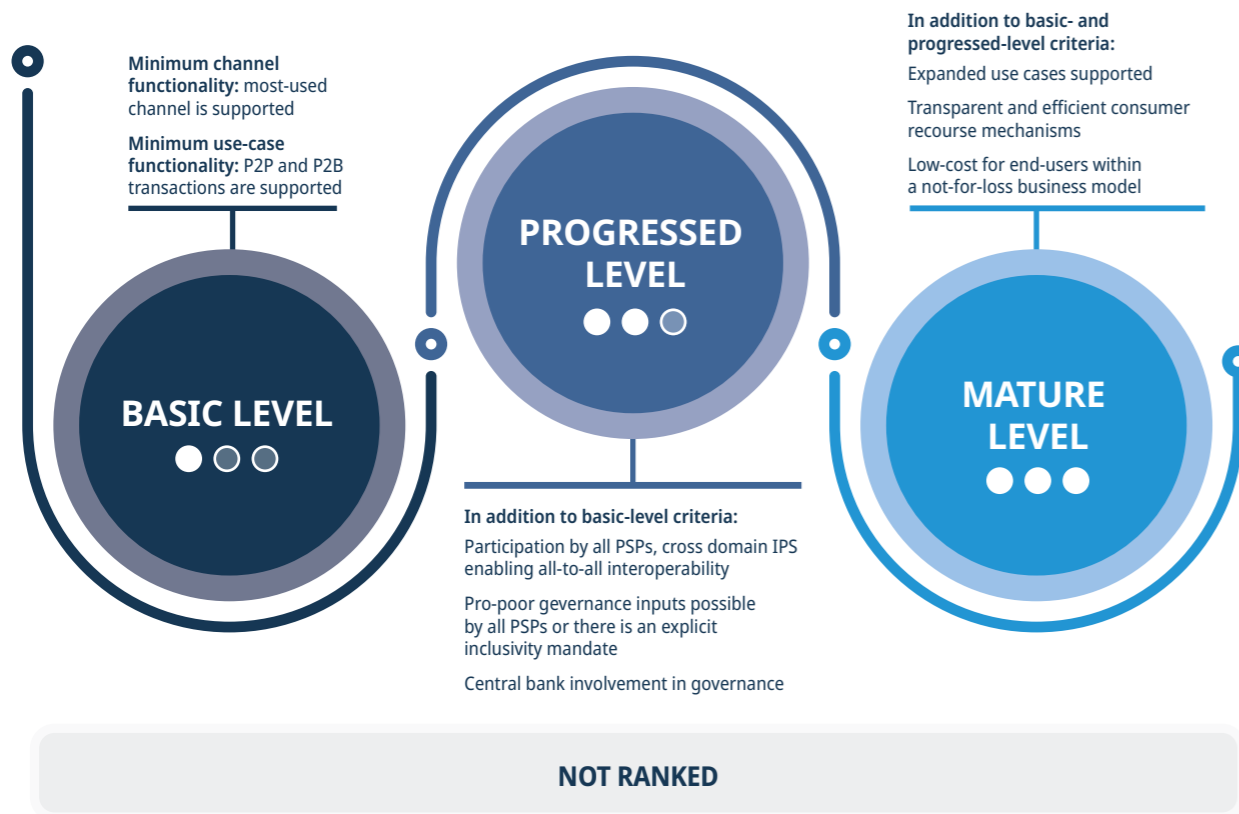
39 GIMACPAY and PAPSS, as well as InstaPay (Egypt), Gamswitch (The Gambia), GIP and Ghana MMI, PesaLink (Kenya), MauCAS (Mauritius), NIP and Nigeria mobile money, eKash (Rwanda), RTC (South Africa), TIPS (Tanzania), ZIPIT (Zimbabwe), and Virement Instantané (Morocco).

2.6 | Most IPS offer only a basic level of inclusivity

AfricaNenda uses the following spectrum to categorize how inclusive each IPS is in Africa. The level of inclusivity depends on the IPS governance structure, the depth and

breadth of channels it supports, its functions, and its use cases. The inclusivity spectrum framework classifies IPS as **basic**, **progressed**, or **matured** (Figure 2.11).

FIGURE 2.11 | IPS Inclusivity Spectrum



IPS ranked according to the **basic level** of inclusivity include two key criteria regarding basic functionality. These criteria are essential for the inclusion of all end-users in Africa. IPS are not ranked if they fail to meet the basic level of inclusivity, namely that they:



Enable the primary local channel: The IPS enables the channel or channels that are most used by the population within its geography. For example, it supports mobile money transactions via the IPS in markets where e-money is the preferred channel currently.



Enable P2P and P2B use cases at a minimum: The former provides speed and safety in addition to scale for personal P2P transactions. The latter provides scale for an efficient business model and to rival cash in merchant payments.

IPS that fit into the **progressed level** of inclusivity fulfill the basic level criteria and include an additional three criteria related to governance:



Allow all PSPs: Commercial banks, MMOs, fintechs and so on, are all allowed by the system. The IPS supports a true cross-domain typology, with scheme rules that allow for all-to-all interoperability from the transaction's origination to termination—this enables end-users to transact with any other user, regardless of where they have their account. Doing so increases the size of the overall payment network. These positive network effects can increase transaction volumes and thus the efficiencies of shared infrastructure, resulting in reduced costs.



Engage in pro-poor governance: The IPS has established provisions to allow all licensed PSPs to provide input into system decision-making and design. Alternatively, it has an explicit inclusivity mandate.



Include the central bank in governance: This ensures the elevation of inclusivity targets and champions the goal of integrating all PSPs into the system. Supervision and effective regulation are crucial, but as important is inclusive governance that prevents dominance by commercial interests.

IPS that achieve a **mature level** of inclusivity have fulfilled the basic and progressed level criteria, as well as three additional functionality and governance conditions:



Enable all use cases: End-users can access a full range of use cases, including P2P, P2B, G2P, P2G, B2B, B2P, B2G, and G2B, for a holistic digital payment ecosystem that enables the full circulation of liquidity, as occurs in the analog economy. Interlinking use cases enhance digital utility for end-users and prevent capital from stagnating. Instead, capital can more easily and efficiently flow between actors in the economy.



Provide recourse: The IPS sets standards for participants to ensure end-user recourse is in place, consistent with consumer protection, data privacy, and cybersecurity laws. The IPS effectively monitors the provision (by participants) of end-user recourse mechanisms, mitigating risks such as fraud. Ideally, the system also provides an additional layer of recourse for end-users should provider channels prove insufficient.

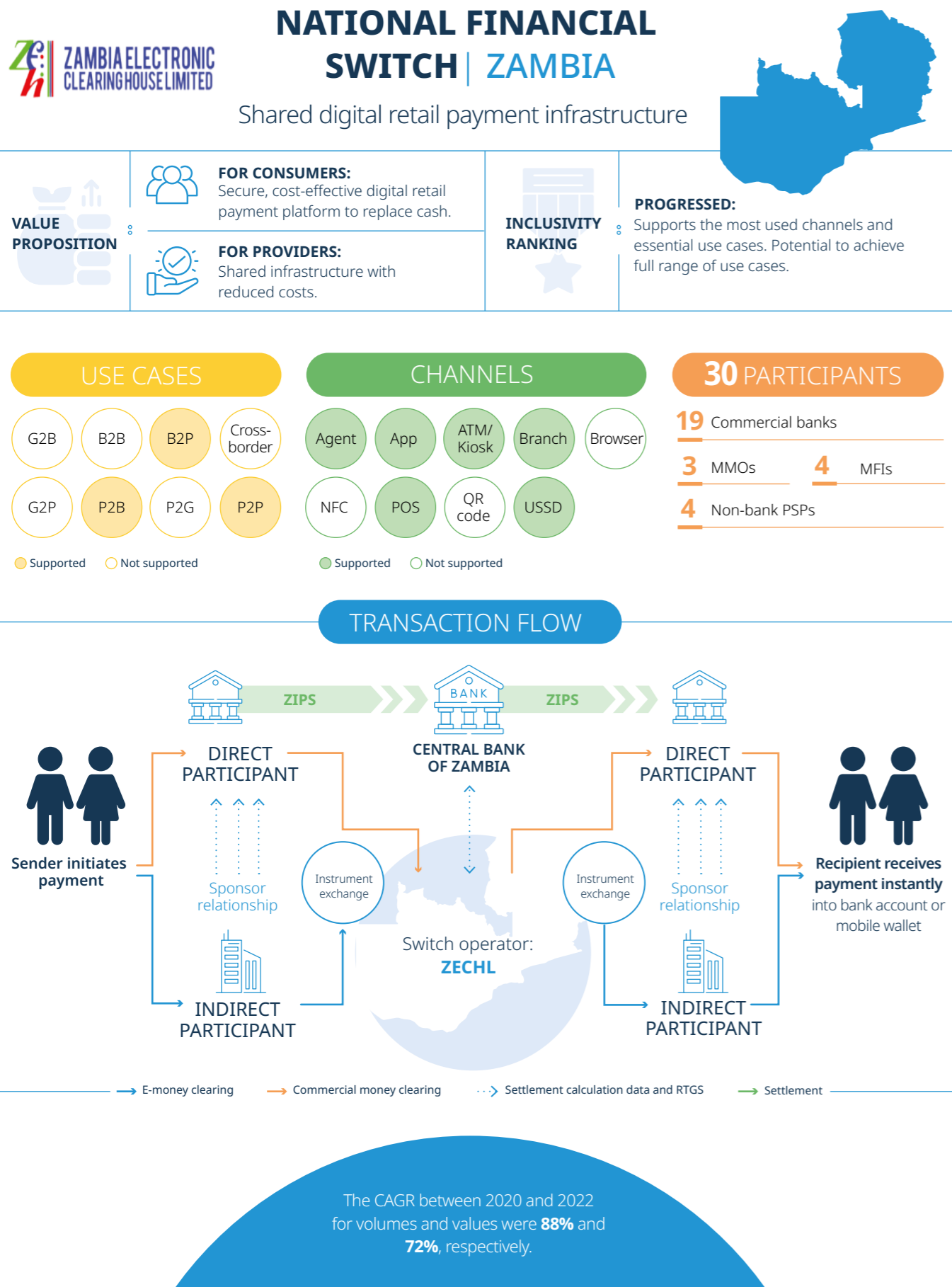


Serve end users at low cost: The cost for the end user of a digital payment transaction is as low as feasibly possible and delivered within a not-for-loss business model. Participants continuously monitor their pricing for non-compliance with any system-wide pricing conditions, such as caps or zero-fee requirements.

Box 2.12 on page 98 is a snapshot of the use cases, functionalities, and transaction flow for the IIPS in Zambia (NFS), one of the progressed IPS.



BOX 2.12 | NFS in Zambia as of June 2023



Based on the definitions of inclusivity within the AfricaNenda Inclusivity Spectrum, most IPS in Africa deliver only a basic level of inclusivity (Figure 2.12).⁴⁰

Twelve IPS do not fulfill the basic criteria of inclusivity. Of these, seven systems do not support the minimum use cases (P2P and P2B); another does not offer the preferred digital channel. The remaining four enable P2B but do not offer the preferred digital channel. For example, though SADC's TCIB and eKash are not currently ranked, they both plan to introduce P2B payments. When these plans are realized, they will improve their inclusivity.

Fifteen systems meet the basic level criteria, while five IPS fall within the progressed inclusivity category. These IIPS systems cover nine countries through three domestic IIPS in Ghana, Malawi, Zambia and one regional IIPS GIMACPAY enabling domestic functionalities in 6 countries: Cameroon, Central African Republic, Chad, Republic of Congo, Equatorial Guinea, Gabon. Africa has no mature IPS to date. The distribution between the different inclusivity levels will likely change in the coming years given the ongoing developments and integrations within the individual IPS.

⁴⁰ For more information on how the IPS scored against the different inclusivity criteria according to each inclusivity level, refer to Annex C. The fulfilment of ranking criteria is based on information available via online sources and stakeholder interviews. Access to more information may allow IPS inclusivity to be recategorized.

FIGURE 2.12 | Mapping of IPS across the inclusivity spectrum



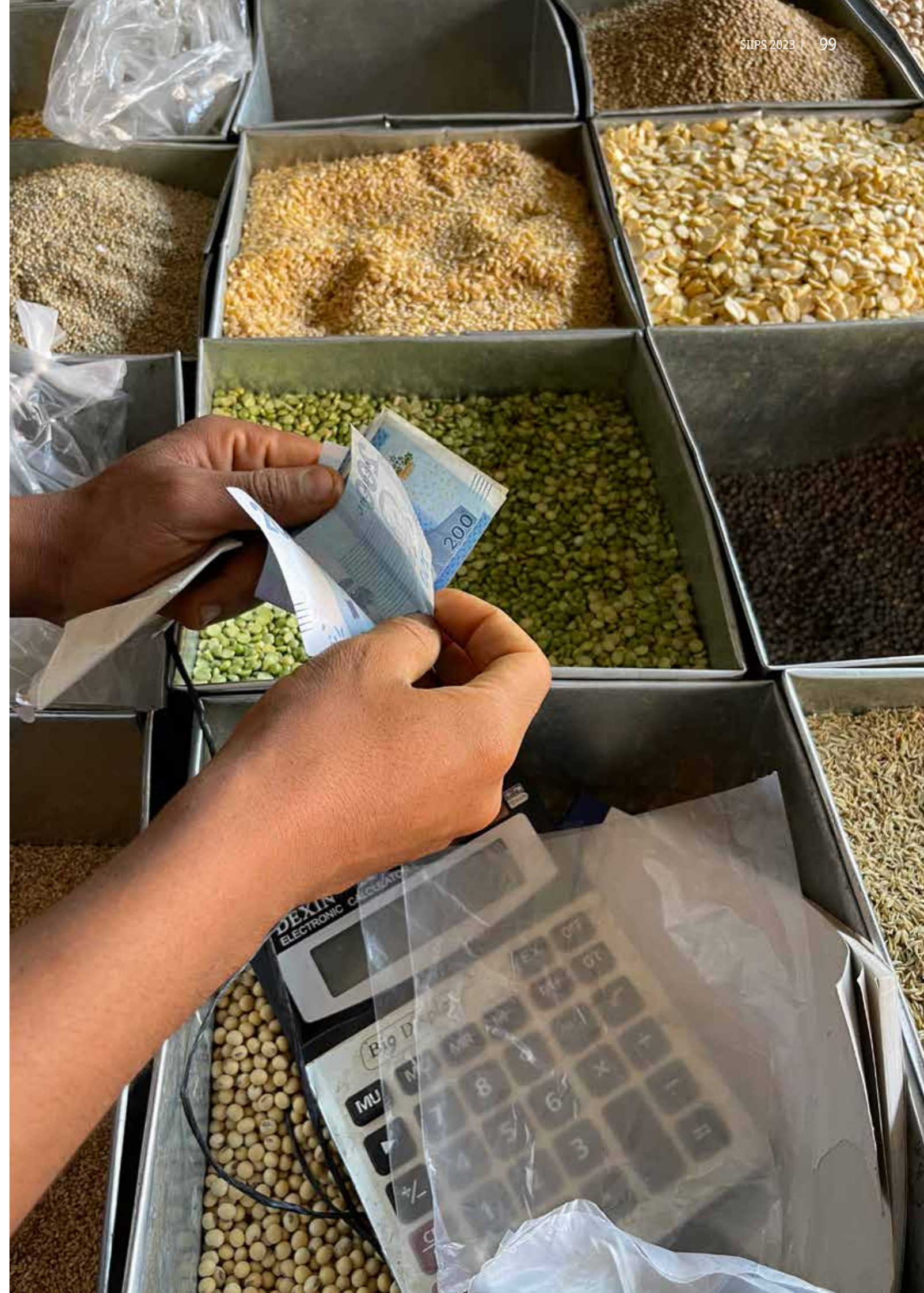
At the basic level, NIP in Nigeria is the only system that offers a broad range of use cases. Yet it does not allow equal input by all participants into the scheme. Should that change, the IPS would achieve a higher inclusivity ranking.

The five IPS classified as progressed are on their way to achieving a mature state of inclusivity. They include GIMACPAY (CEMAC), and GIP and Ghana MMI, Natswitch (Malawi), and NFS (Zambia). In the case of Ghana MMI and Ghana's GIP, though they are two separate systems, they are integrated, and so jointly function as a cross-domain system operating at the progressed level.

The IPS ecosystem in Ghana supports a broad range of use cases. However, it does not enable effective oversight of recourse mechanisms provided by participants. Effective consumer recourse mechanisms are the most complex element to implement—and thus progress to a mature ranking. Only ZIPIT in Zimbabwe offers a

separate end-user recourse channel. Systems can go further by including shared recourse standards in the scheme rules and monitor participant PSPs to gauge the extent to which they are complying with consumer protection and/or data privacy regulations. In addition, they can follow Zimbabwe's lead to include an additional recourse channel for end-users who have exhausted recourse with their respective financial institution.

Having laid out a detailed picture of the IPS landscape in Africa, in Chapter 3, we will turn to the issue of digital payments usage. Our consumer research for the 2023 SIIPS widens the aperture on IPS usage on the continent with a deep review of a new set of countries: Cameroon, Malawi, Morocco, Rwanda, and Senegal. Beginning with patterns of digital payments use for both individuals and micro, small, and medium enterprises (MSMEs), we go on to explore barriers to digital payment adoption and conclude with implications of the consumer research for IPS design.



EVOLVING DIGITAL PAYMENT CUSTOMER BEHAVIOR



Inclusive digital payments must have a clear value proposition to meet customer needs and to drive recurring usage. This chapter summarizes primary research insights from a diverse set of countries to understand payments usage and the drivers and barriers that individuals and micro, small, and medium enterprises (MSMEs) face. These perspectives can provide insights for IPS design.

AfricaNenda conducted the customer research in five countries: Cameroon, Malawi, Morocco, Rwanda, and Senegal.⁴¹ Researchers interviewed a sample of over a hundred individuals and MSMEs in each country to understand their experiences (see Box 3.1 and [Annex A](#) and [Annex E](#) for more details on methodology). This year's research complements that done in seven countries in the 2022 SIIPS report using a similar methodology.⁴²

While the sample is not nationally representative, it nonetheless helps to identify patterns, constraints, and drivers of use to unlock the value of digital payments. Our research focuses particularly on the "emerging market segment," lower-income people and MSMEs based in urban and peri-urban areas, who are core to informing inclusive IPS design. The sampling strategy was set up to ensure that approximately 75% of participants are current or former digital payment users, to provide sufficient insights into the early usage and habitual usage constraints that exist beyond access.⁴³

The chapter is structured as follows:

- 1 **The first section** explores the most frequent payment needs and opportunities for digitalization by examining digital payments usage per country and per user group.
- 2 **The second section** assesses the drivers and barriers to digital payment access, early usage and habitual usage.
- 3 **The third section** summarizes the core customer research findings.
- 4 **The fourth section** concludes with implications of the customer research insights for IPS design in Africa.

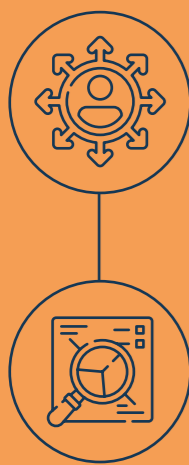
⁴¹ AfricaNenda works at a pan-Africa level. The countries each year have been chosen based on existing relationships with AfricaNenda and to reflect the different context of diverse economies and regions in Africa: East, West, Central, North and Southern Africa.

⁴² The 2022 countries surveyed were the Democratic Republic of Congo, Egypt, Ghana, Kenya, Nigeria, Tanzania, and Zambia.

⁴³ The actual proportion of digital payment users per sample country can be found in [Annex D](#). The average percentage of people that have made or received a digital payment across the five consumer research countries based on the World Bank Findex data is 42% (World Bank 2021c).

BOX 3.1 | Customer research methodology overview

AfricaNenda conducted the customer research in five countries: Cameroon, Malawi, Morocco, Rwanda, and Senegal. Researchers interviewed a sample of over 100 individuals and MSMEs in each country to understand their experience. (These findings complement similar research conducted for the 2022 SIIPS report in the Democratic Republic of Congo, Egypt, Ghana, Kenya, Nigeria, Tanzania, and Zambia.)



A mixed-method approach. The insights in this chapter are based on both quantitative and qualitative customer research, gathered between February and March 2023. The quantitative component provides insights into the early and habitual usage of digital payments across the continent as well as core barriers. The qualitative component combines in-depth interviews with a mystery shopping component to map the user journey of digital payments, considering costs, customer support, and recourse implications.

Study population profile: emerging market comprising low-income customers and micro and small businesses dwelling in urban and peri-urban locations. The quantitative sample involved 653 respondents and the qualitative sample involved 75 respondents for in-depth interviews and 25 mystery shopping exercises. To inform the inclusive design of instant payment systems, the study sample focuses on the “emerging market segment,” the core constituency for digital payments. Thus, researchers sampled only low-income earners and MSMEs in urban and peri-urban areas. Among sampled MSMEs, the study includes those that also conduct DFS agent activities. The sample focused on digital payment users: 79% of quantitative respondents and 90% of qualitative respondents made or received at least one digital payment within the prior month. The sampling strategy was set up to ensure that approximately 75%⁴⁴ of participants are current or former digital payment users, to provide sufficient insights into the early and habitual usage constraints that exist beyond access.

The customer research sample is not nationally representative, and any inferences made on a country-by-country basis are with respect to the sampled respondents, to help identify patterns, constraints and drivers in the usage of digital payments. The sample includes a range of respondents of different genders, ages, and income regularity.

See [Annexes A and E](#) for more details on methodology.



⁴⁴ The actual proportion of digital payment users per sample country can be found in [Annex D](#). The average percentage of people that have made or received a digital payment across the five consumer research countries based on the World Bank Findex data is 42% (World Bank 2021c).

3.1 | Current state of digital payments usage

3.1.1 The sample countries in 2023 on average show relatively low digital payment adoption, but a large share of “super” users

Researchers calculated the share of the whole sample using digital payments as well as the share of digital payment users who are “super users” (meaning, they use digital payments at least weekly).⁴⁵ They categorized countries as either nascent, emerging, or leading in digital payment adoption based on the share of the sample population that used digital payments in the prior year,

according to the Global Findex 2021 (World Bank 2021c). In countries that are nascent, between 0% and 30% of adults use digital payments. In emerging countries, between 31% and 65% of adults use digital payments. In leading countries, 66% or more of the population use digital payments. Most of the counties sampled in 2023 fall into the emerging category (Table 3.1).

TABLE 3.1 | Digital payment usage across the 2023 sampled countries

	Emerging Cluster				Nascent Cluster	
	Cameroon	Malawi	Rwanda	Senegal	Morocco	
Share of adults using digital payments						
Proportion of population using digital payments over the past year <i>[Global Findex 2021]</i>	50%	40%	39% <i>(2017 data)⁴⁶</i>	53%	30%	
Super users						
Proportion of the SIIPS sample using digital payments weekly <i>[including agent-assisted payments]</i>	Individuals	83%	57%	90%	94%	17%
	MSMEs	76%	77%	98%	94%	8%

Sources: World Bank 2021c; Author calculations

⁴⁵ Assisted transactions are defined as transactions that are cash along the first-mile—meaning, the customer brings cash to an agent or bank branch staff member and initiates the payment—and digital along the middle-mile from the sending institution to the receiving institution.

⁴⁶ Up-to-date information is missing for Rwanda as they did not participate in the Findex 2021 study.

TABLE 3.2 | Digital payment usage across the 2022 sampled countries

	Leading Cluster		Emerging Cluster			Nascent Cluster		
	Ghana	Kenya	Nigeria	Tanzania	Zambia	DRC	Egypt	
Share of adults using digital payments								
Proportion of population using digital payments over the past year <i>[Global Findex 2021]</i>	66%	78%	34%	50%	46%	22% <i>(2017 data)</i>	20%	
Super users								
Proportion of the SIIPS sample using digital payments weekly <i>[including agent-assisted payments]</i>	Individuals	86%	82%	83%	21%	53%	26%	14%
	MSMEs	90%	82%	75%	45%	64%	28%	24%

Sources: World Bank 2021c; Author calculations

There are several summary dynamics related to whether the country falls into the leading, emerging, or nascent category for digital payment adoption. **These category-specific challenges were less pronounced than in SIIPS 2022, as most 2023 countries fell into the emerging cluster (AfricaNenda, 2022a):**

- 

Leading category: None in 2023 (Kenya and Ghana from SIIPS 2022). A wide range of use cases has been digitalized and are frequently used by a growing portion of the population. A small sub-set of users in the countries sampled in 2023 are already using a range of use cases on a frequent basis (for example, Cameroon, Rwanda, and Senegal).
- 

Emerging category: Cameroon, Malawi, Rwanda, Senegal (Nigeria, Tanzania, and Zambia from SIIPS 2022). Certain users make or receive digital payments for some use cases. Cameroon, Rwanda, and Senegal have a small group of users who perform a variety of digital payments on a frequent basis. However, large portions of consumers have still not adopted digital payments. Respondents from Rwanda faced access barriers (lack of phone and internet), but limited early usage barriers. Cameroon and Malawi faced both access and early usage barriers (lack of internet, phone, and trust). The main barriers in Senegal were trust (early usage barrier) and the lack of a reliable network (habitual usage barrier).
- 

Nascent category: Morocco (the Democratic Republic of Congo and Egypt and from SIIPS 2022). The ecosystem of digital payment is immature, with low levels of adoption and infrequent use. Access and early usage barriers are typically high—either due to lack of physical access (i.e., agent points) or availability of digital payment instruments. In Morocco, the main constraint was limited network effects, followed by lack of trust and understanding of how to use the instruments.

Countries that fall into the emerging category based on digital payment adoption, both in the 2022 and the 2023 sample groups, have wide variations in their share of super users. In Tanzania, for example, half of the sample use digital payments, but only 21% of them are super users—meaning, those who use digital payments do so infrequently, perhaps by sending a remittance or

receiving funds on an irregular basis. In Cameroon and Senegal, in contrast, 94% and 83% of digital payment adopters are super users, respectively. Countries with a high share of super users in a place with relatively low overall digital payment adoption, such as Rwanda and Senegal, highlight opportunities to extend digital payment access to additional market segments.

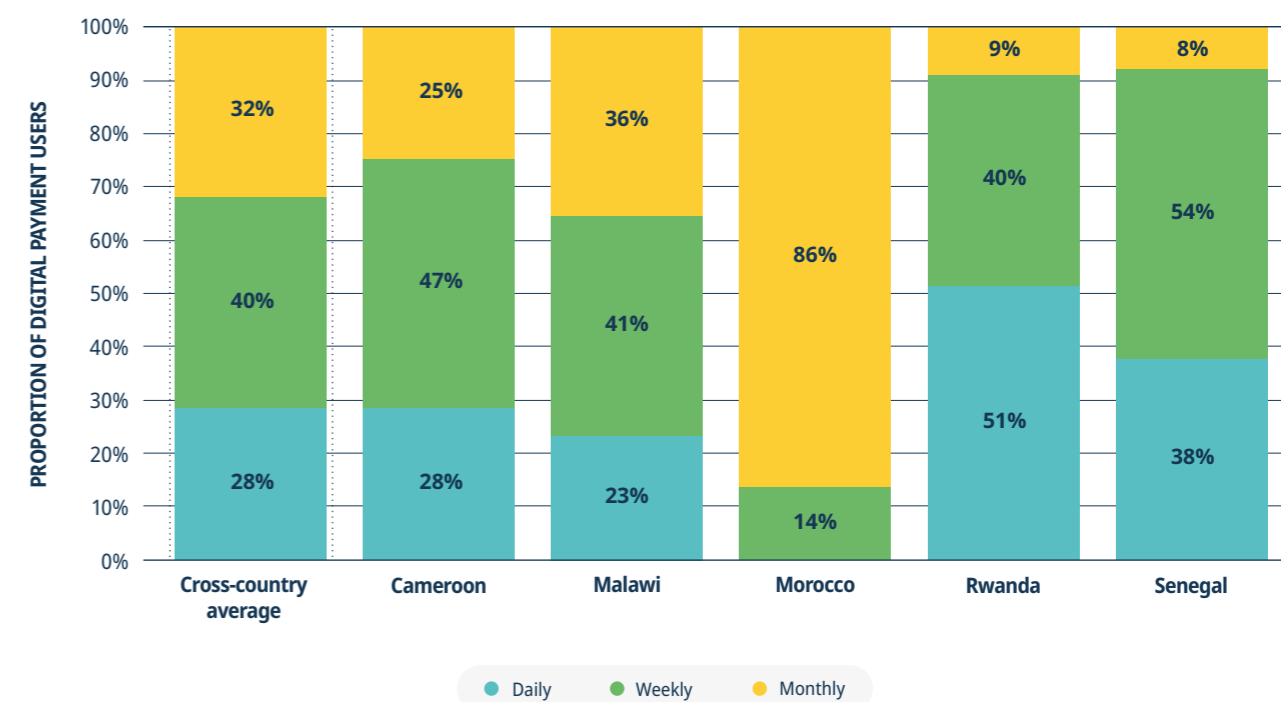


Frequency and volume of use: A CROSS-COUNTRY COMPARISON

On average, most respondents in the 2023 sample use digital payments daily or weekly; nearly 70% of surveyed digital payment users conduct a digital payment at least

once a week. These patterns of usage frequency vary by country (Figure 3.1). In Rwanda, digital payments are well established into the routines of digital payment users: 51% of surveyed users use digital payments daily. By contrast, most digital payment users in Morocco make just one payment per month. This suggests a limited engagement with digital payments and a continued reliance on cash.

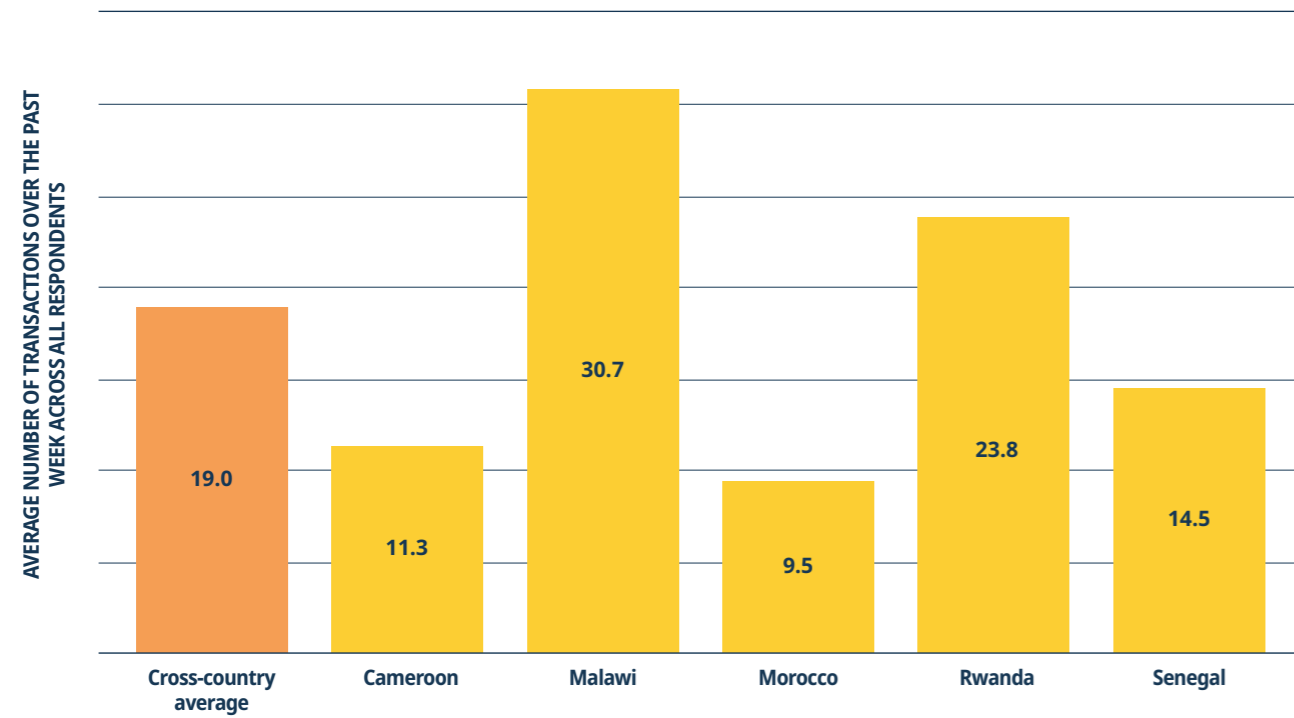
FIGURE 3.1 | Cross-country analysis—frequency of digital payment usage



Though digital payment penetration is about equal across countries, weekly transaction volumes vary significantly. In Malawi, for example, transaction volumes are three times higher than in Morocco (see Figure 3.2). Qualitative evidence suggests that customers in Malawi

tend to make lots of small purchases for their immediate needs, given very limited incomes (Cenfri 2015). Across all sample countries, between 30% and 40% of all transactions were digital, except in Morocco, where only 9% of the transaction volumes were digitalized.

FIGURE 3.2 | Average volume of weekly transactions



Frequency and volume of use: USER GROUPS

The data shows similar levels of digital payment usage between younger and older adults, and between adults with more or less frequent income streams. Larger differences exist between women and men users of digital payments (Figure 3.3). Surveyed men were 33% more likely than women to leverage

digital payments daily, for example. Women instead are more likely to utilize digital payments on a weekly basis.

Between individuals and MSMEs there are bigger differences, with individuals showing less digital adoption than MSMEs, especially small merchants: 17% of individual respondents, on average, use digital payments daily versus 41% of surveyed MSMEs (Figure 3.4). This is consistent with the findings from SIIPS 2022.

FIGURE 3.3 | Frequency of digital payment usage per individual user groups

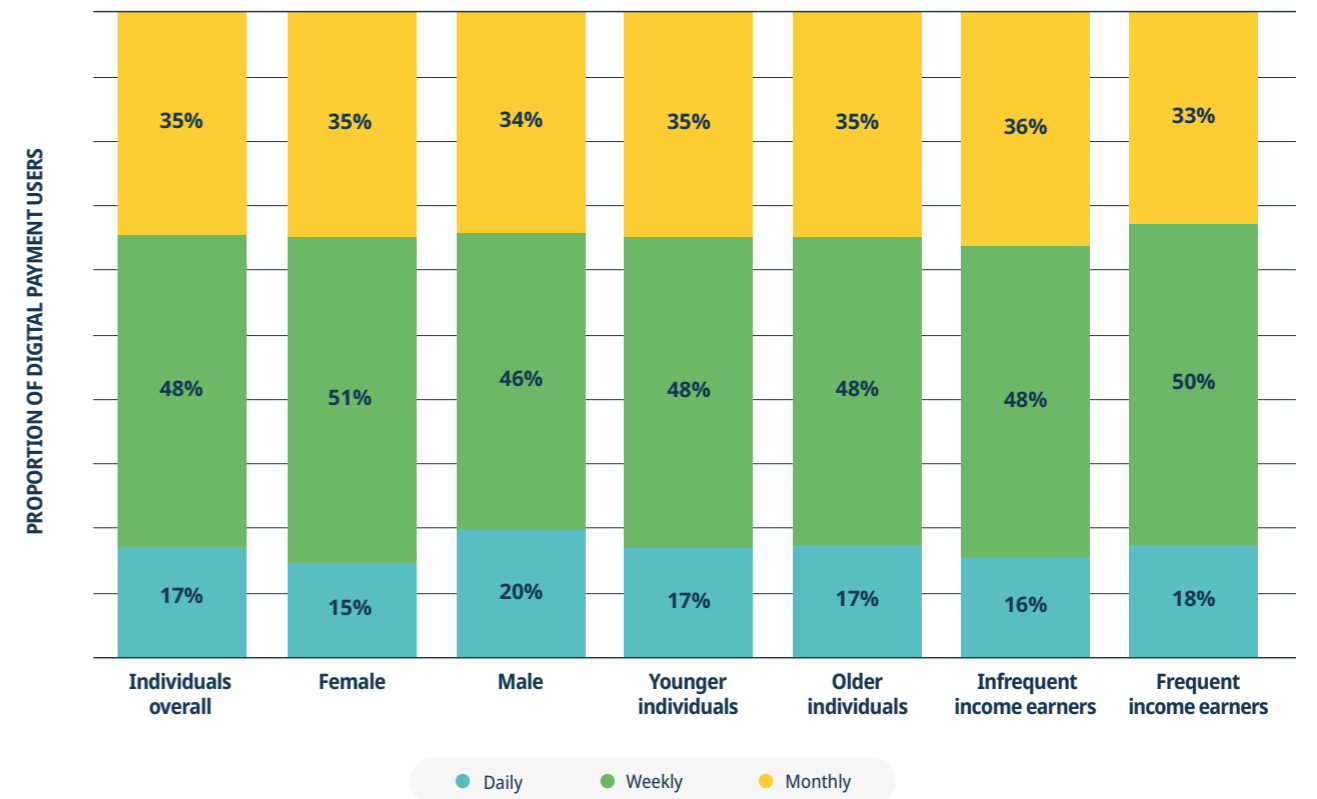
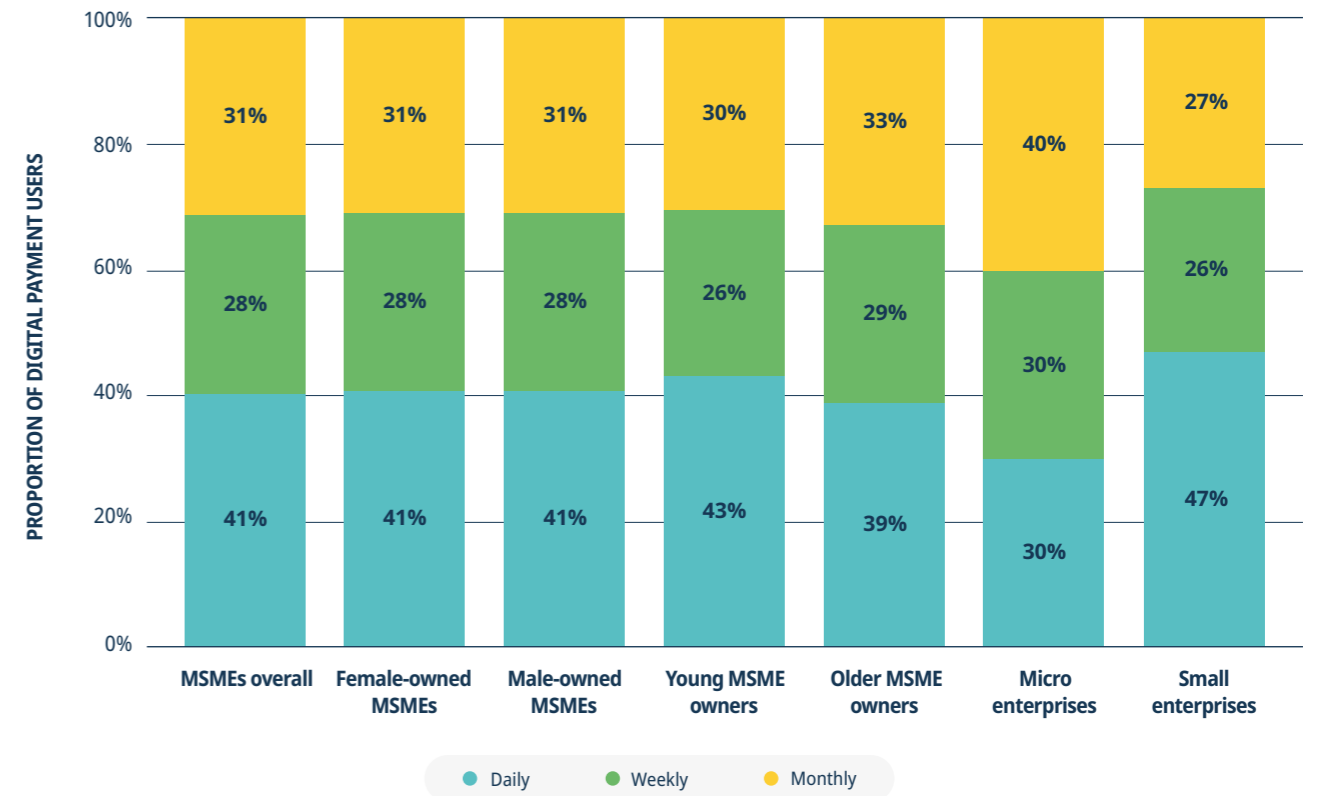


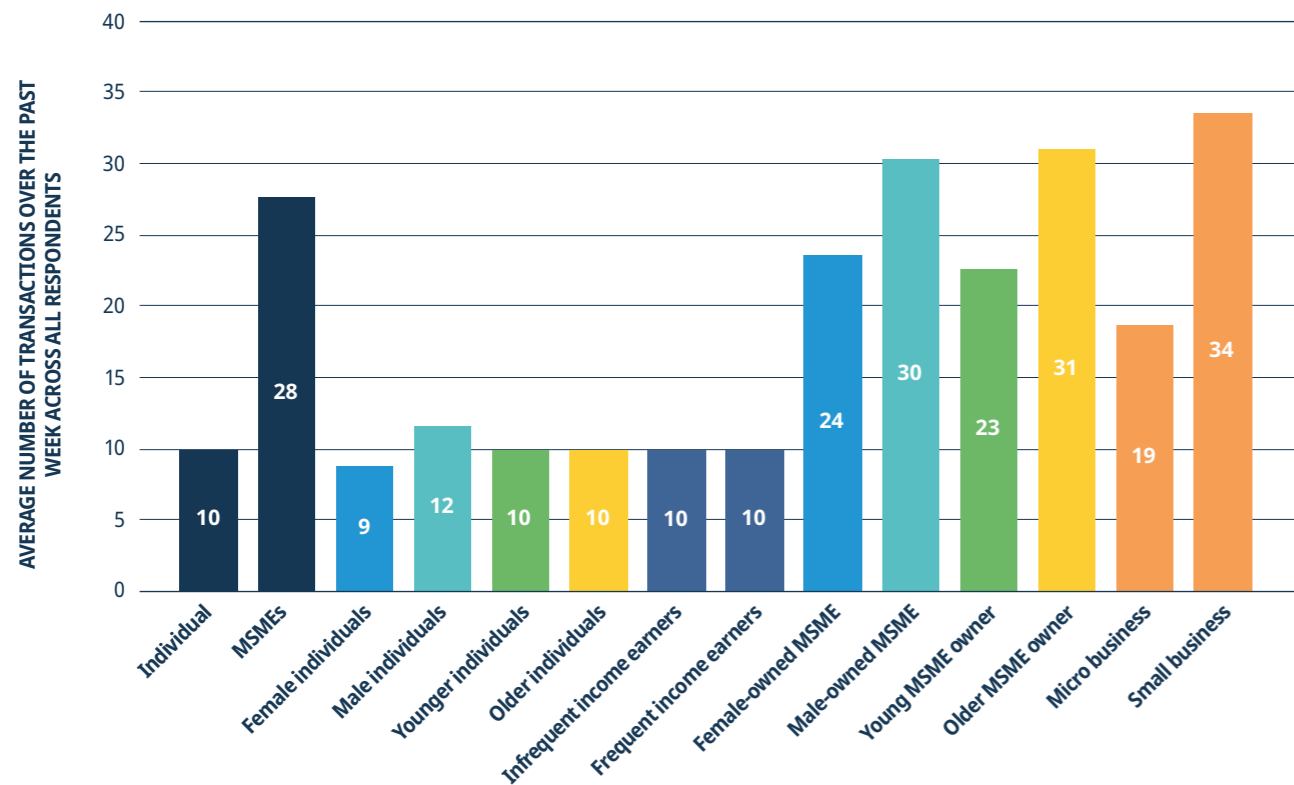
FIGURE 3.4 | Frequency of digital payment usage per MSME user groups



Transaction volumes vary considerably between user groups (see Figure 3.5). MSMEs conduct more transactions per week than individuals. There is a large gender gap in digital payment frequency among MSMEs, with surveyed male business owners reporting 30 transactions per week,

compared to 24 for female business owners. Among business owners, age is also correlated with transaction volume, with business owners aged younger than 30 reporting lower weekly transaction volumes (23) than older ones aged 30 and older (31).

FIGURE 3.5 | Average number of transactions per week for the different user groups



The averages displayed in Figure 3.5 obscure underlying differences between user groups within countries. Table 3.3 provides a more nuanced view of within-country differences by user group. Cameroon and Morocco have the most pronounced differences, particularly for gender and age, whereas Rwanda and Senegal have the least differences. Gender differences among MSMEs are most pronounced in Morocco, with an 18-percentage point gap between women-owned and men-owned MSMEs. The opposite was true in Cameroon and Malawi

where women-owned MSMEs outpace men-owned counterparts in digital payment use. Younger individual and MSME respondents are more likely to use digital payments in Cameroon and Morocco, whereas in Malawi and Rwanda, the opposite is true. Qualitative interviews reveal that the younger respondents who are active users of digital payments do so because they feel comfortable with technology. Older respondents adopting digital payments, in contrast, have more transactions overall and thus more opportunity to pay digitally.

TABLE 3.3 | User group differences on digital payments - country analysis

	ALL RESPONDENTS		INDIVIDUAL RESPONDENTS		MSME RESPONDENTS	
	MSME vs. individuals	Age	Gender	Frequency of income	Gender	Size of business
Cameroon	No significant variance	Younger use more	No significant variance	Frequent use more	Women use more	No significant variance
Malawi	MSMEs use more	Older use more	Men use more	No significant variance	Women use more	Larger use more
Morocco	Individuals use more	Younger use more	No significant variance	Frequent use more	Men use more	Larger use more
Rwanda	No significant variance	Older use more	Men use more	No significant variance		
Senegal	No significant variance		Women use more	No significant variance		Larger use more

Legend for color gradient: Gap in percentage points (pp) between two user groups in terms of proportion of digital payment users that use digital payments at least once a week



Note: The findings regarding age have been consolidated for MSME and individual respondents.

3.1.2 Apps, USSD and mobile money agents are the most-used payment channels

The researchers analyzed the use of digital channels versus cash and found that respondents used nine digital channels across the five sample countries: app, ATM, bank agent, mobile money agent, near field communication (NFC), QR codes, SIM toolkit, unstructured supplementary service data (USSD), web browser.

Apps are most prevalent among digital channels in Morocco and Senegal, reflecting comparatively high smartphone and internet penetration in these countries (GSMA 2022; ANRT 2017; Pew Research Center 2018; see Table 3.4). USSD dominates in Malawi and Rwanda (used by 35% of respondents in Malawi and 50% of

respondents in Rwanda). In Cameroon, mobile money agents are the primary channel for 19% of respondents, closely followed by USSD at 18%. Though other channels are more prevalent than USSD in three of the five sampled countries, USSD is the only channel that has reached 30% as a share of digital transactions in any country. This is a reflection of the share of people in these countries who own a mobile phone with basic functionality, as compared with smartphone adoption, which drives app usage. Morocco is particularly fragmented in its channel use, with the top three channels only accounting for a combined 24% of respondents' primary usage, compared to a range of 35%-56% for the top three in the other countries.

TABLE 3.4 | Most used digital channels—country analysis

Country	Direct cash usage [% of respondents for whom this is the primary channel]	Most used digital channel [% of respondents for whom this is the primary channel]	Second most used digital channel [% of respondents for whom this is the primary channel]	Third most used digital channel [% of respondents for whom this is the primary channel]
Cameroon	53%	Mobile money agent [19%]	USSD [18%]	SIM toolkit [8%]
Malawi	52%	USSD [35%]	SIM toolkit [6%]	Mobile money agent [4%]
Morocco	69%	App [11%]	ATM [7%]	Bank agent [6%]
Rwanda	42%	USSD [50%]	Mobile money agent [4%]	Web browser [2%]
Senegal	62%	App [29%]	Mobile money agent [4%]	USSD [2%]

Despite frequent and growing digital payment use, agents remain important due to the continued prevalence of cash. This is particularly true in Senegal, where 74% of respondents use both self-service digital channels and agents at least once a week. In Malawi, respondents use

agents for utility payments, and in Morocco, to receive pension payments. In Cameroon, agents play a critical role in facilitating digital transactions for women and the elderly, while in Rwanda, agents help those who lack access to digital devices.

3.1.3 Use cases

The research explored use cases for individuals and for MSMEs. For individuals, the most common digital payment use cases were receiving money, saving money, and purchasing mobile minutes (airtime). Yet the findings suggest that opportunities exist to increase the use of digital payments for other use cases, such as purchasing household goods and for salary payments. For MSMEs, the use of digital payments for airtime and transport for staff are common, while digital payments are less common for paying suppliers—an open opportunity.



How individuals use digital payments

Individual respondents report receiving and sending money, saving money, and

purchasing airtime using digital payments; these use cases have been more widely embraced than others (Table 3.5).⁴⁷

In contrast, most person-to-business (P2B) payments—for purchases such as household goods, services, and transport payments—and business-to-person transactions—such as payroll—continue to be made in cash. In Senegal, for example, 75% of respondents conducted at least one digital transaction for airtime over the past week but only 40% of respondents did the same for household goods.

Lower relative use of digital payments for these transactions is partly a function of the fact—highlighted in Chapter 2—that most IPS launch with P2P use cases and then roll out other use cases, such as P2B, B2P, etc., later. There are opportunities to further digitalize these payments to benefit both merchants and end users.

TABLE 3.5 | The most common payment use cases among individual respondents and their level of digitalization

Ranking of weekly use cases by prevalence among individual respondents [% of use case respondents that made or received a digital payment for the use case]					
	Cameroon	Malawi	Morocco	Rwanda	Senegal
1	Airtime [55%]	Airtime [54%]	Pay for household goods [53%]	Airtime [80%]	Send money [60%]
2	Send money [59%]	Pay for household goods [51%]	Airtime [38%]	Pay for household goods [74%]	Airtime [75%]
3	Save money [50%]	Utility payments [38%]	Pay for services [11%]	Transport 53%	Receive money [65%]
4	Receive money [59%]	Send money [51%]	Receive salary [67%]	Receive salary [70%]	Save money [85%]
5	Pay for household goods [40%]	Save money [44%]	Save money* [67%]	Save money [77%]	Pay for household goods [40%]

■ Use cases for which less than 40 percent of respondents conducted a digital transaction over the past week.
 ■ Use cases for which between 40 and 70 percent of respondents conducted a digital transaction over the past week.
 ■ Use cases for which above 70 percent of respondents conducted a digital transaction over the past week.

*Sample size <5 respondents

Other discrepancies shown in Table 3.5 suggest additional areas of opportunity for expanding digital payments. For instance, in Morocco, 53% of respondents conducted a digital transaction to buy household goods, but only 11% for payments for services, suggesting merchant payments are ripe for expansion compared to bill payments. Similarly, salary payments are well digitalized only in Rwanda, where 70% of respondents receive their salary payments digitally; salary payments are thus another area of opportunity for expanding payments digitization in many countries.



MSMEs

Table 3.6 shows the clear potential to further digitalize business-to-business (B2B) use cases for MSMEs. Payments to staff for airtime and transport are well digitalized, as are customer payments. In contrast, B2B payments to suppliers and utility payments to private sector companies remain largely cash based. Transactions related to loan or savings products are also still commonly conducted in cash by MSMEs across all markets in the sample.

⁴⁷ The research looked at the following use cases: save money, send money to family and friends, receive money from family and friends, receive salary, pay for government services, receive money from the government, utility payments, charity payments, pay for household goods, pay for a service, pay for a large household item, settle recurrent payments, loan repayments, airtime, pay for insurance premiums, and pay for medical services.

TABLE 3.6 | The most common frequent payment use cases among MSME respondents and their level of digitalization

Ranking of payment use cases based on the proportion of MSME respondents that had the payment need at least once a week [% of transactions that are done digitally]					
	Cameroon	Malawi	Morocco	Rwanda	Senegal
1	Receive customer payments [50%]	Receive customer payments [83%]	Receive customer payments [71%]	Receive customer payments [95%]	Receive customer payments [77%]
2	Supplier payments [39%]	Airtime payment for staff [81%]	Loan repayments [36%]	Airtime payment for staff [83%]	Supplier payments [41%]
3	Airtime payment for staff [100%] *	Supplier payments [52%]	Staff salaries [60%]	Loan repayments [47%]	Airtime payment for staff [50%]
4	Transport payment for staff [100%] *	Transport payment for staff [83%]	The other use cases mentioned are not as frequent ⁴⁸	Save income [64%]	Transport payment for staff [25%]
5	Save business income [36%]	Save income [35%]		Transport payment for staff [100%]	Utility payments [29%]

■ Use cases for which less than 40 percent of respondents conducted a digital transaction over the past week.
 ■ Use cases for which between 40 and 70 percent of respondents conducted a digital transaction over the past week.
 ■ Use cases for which above 70 percent of respondents conducted a digital transaction over the past week.

Note: The researchers assessed the following use cases: save business income, staff salaries, pay for government services, receive money from the government, utility payments, send staff money for transport, send staff money for airtime, supplier payments, receive customer payments, settle recurrent payments, and loan repayments.

* Sample size < 5 respondents

MSMEs in Rwanda and Malawi show the deepest early use of the primary digital payment uses cases for MSMEs, with more than 80% of MSMEs in these countries reporting digital transactions for three out


of the five payment types. In contrast, less than 50% of respondents conducted digital transactions for several common payment use cases in Cameroon, Morocco, and Senegal.

3.2 Significant barriers persist that limit digital payment access, early usage, and habitual usage


The data shows clear opportunities to increase the access to and ongoing use of digital payments in the sample countries. This begs the questions: What explains the relatively low early usage rates in the studied countries, and what options exist to promote the early use and progression to habitual use of digital payments? This section discusses the drivers and barriers that influence decisions surrounding the uptake of digital payment solutions and recurring usage.

3.2.1 Access is a prerequisite to digital payment usage


Access and usage of digital payments are distinct steps with associated drivers and barriers (See Figure 3.6).



Access: Before consumers can use a digital payment product, they must have a financial account. This requires physical access to agent and bank locations (for both mobile money and financial institution account opening) and any necessary account-related documentation. Language barriers can prevent access to the institutions, tools, and information needed to open an account.



Early usage: Once registered, the consumer must have a compelling reason to use a new digital payment method instead of cash. The decision to use a digital payment instrument depends on the perceived balance between the costs and benefits of use, which reflects behavioral biases, comfort, and preferences. Awareness, user capability, and trust are critical factors to drive once access constraints are removed.

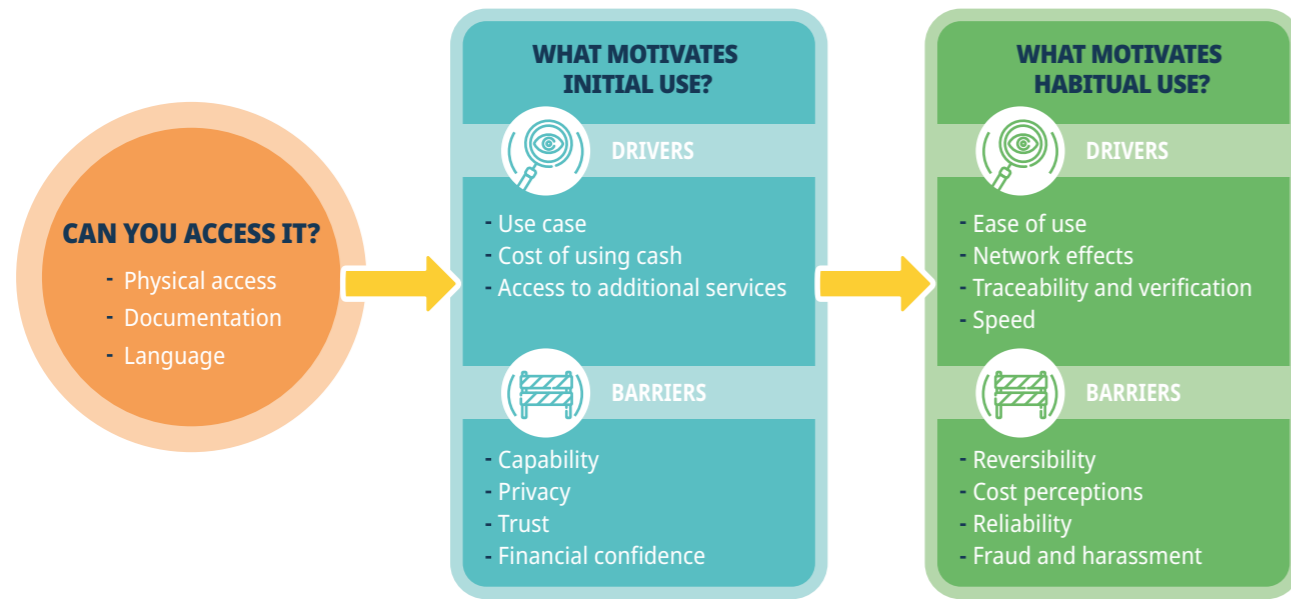


Habitual usage: Over time and through habituation, digital payments become embedded into daily life, as consumers move from ad hoc transactions to consistent and frequent use of digital payments for a variety of use cases. Among the range of factors that impact whether digital payments are habitually used, five stand out as most significant: ease of use, network effects, reliability, recourse, and speed.⁴⁹

⁴⁸ In Morocco, MSME respondents indicated that they only conduct transactions on a weekly basis for three use cases, consistent with the low volume of transactions for Morocco. The qualitative research suggests that this is because the surveyed MSMEs in Morocco generally do not conduct as many transactions as in other countries, including transactions with suppliers conducted on a less frequent basis. This is likely the case because Moroccan MSMEs have a higher monthly revenue than the MSMEs in the other four analysed countries which implies that they can afford to conduct less frequent, higher-value transactions.

⁴⁹ Network effect is defined as a phenomenon by which the utility of digital payment products and services for a user depends on the number of users using it: the more users using a product, the more value each user will get (Giuliani 2022).

FIGURE 3.6 | Barriers and drivers based on the access, early usage, and habitual usage framework

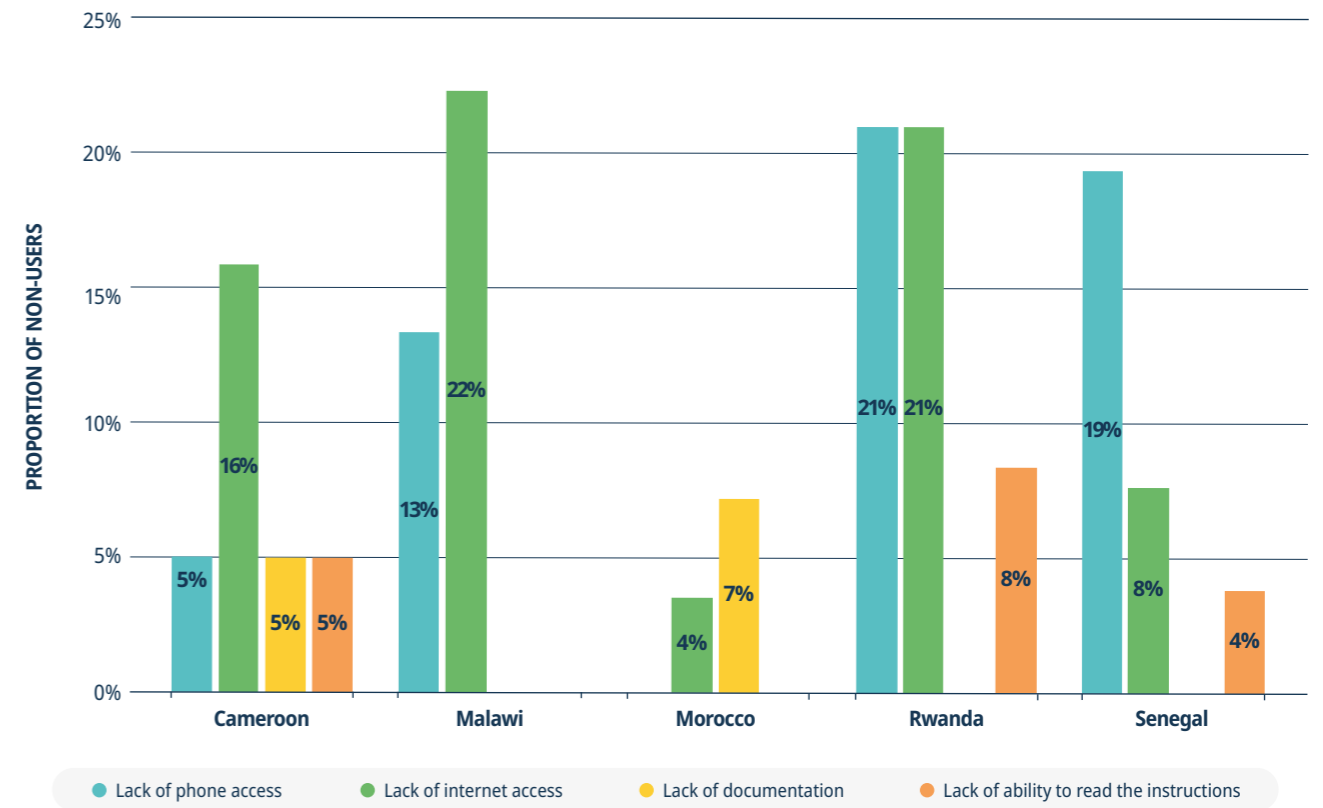


Access to smartphones and to the internet are a major digital payment constraint

Consumers face several constraints that limit their ability to access digital payment products. The foundational features of a digital financial service (DFS) ecosystem include network connectivity, ownership of mobile devices, possession of the necessary documentation, and access to agent or branch networks. As described below, AfricaNenda finds that access to phones and the internet are the primary barriers in the countries we surveyed; our research also draws attention to the critical role played by agents in promoting digital payments usage (Figure 3.7).

Lack of phone and internet access were cited as the primary access barriers in most of the countries surveyed. This finding underscores prior research indicating that moderate smartphone adoption rates (49%) and data/internet coverage (60%) among adults in Africa may limit end-users from using services that require a smartphone (GSMA 2022). Access to phones was most pronounced as a barrier for respondents in Rwanda and Senegal. While Senegal has relatively high phone penetration, a lack of smartphones limits individuals' ability to use apps and QR codes, both common in the Senegalese ecosystem.⁵⁰ Internet penetration is a leading barrier in Rwanda and Malawi, as well as in Cameroon. A lack of access to documentation was reported as a barrier only in Cameroon and Morocco. Language- or literacy-related barriers affected a small proportion of respondents in Cameroon, Rwanda, and Senegal.

FIGURE 3.7 | Proportion of non-users of digital payments naming the respective access barrier as their top reason



For both individuals and MSMEs, agents represent an important means to access digital payments. This is especially true in Cameroon, where agents were effective in raising awareness of digital payments, assisting with onboarding, enabling transactions, and resolving queries (see adoption and usage factors below). Consumers perceive agents as their link to service providers and as a key contact point when they are unsure how to conduct a digital transaction or resolve a transaction issue. This is notable, as some respondents expressed concerns about the accessibility of agents. In Malawi, for example, 39% of respondents reported access to agents as a challenge. Indeed, research by the International Monetary Fund found that there were 553 active mobile money agents available per 100,000 adults in Malawi in 2020, far fewer than in Senegal, which had 2,282 active mobile money agents per 100,000 adults as of 2021 (International Monetary Fund, 2022).

use drivers identified in our qualitative research included: meeting a specific payment need that is more suited to digital payment rather than cash, safety, and security.

Several other factors influence usage as well, including possessing the skills and capability to use digital payment instruments, privacy concerns, and trust in the digital transaction process (Figure 3.8).

“I PAY USING CASH BECAUSE I DON'T HAVE MEANS YET TO BUY TELEPHONE.”
 — Male, 18-29, Nonuser, Micro enterprise owner, Rwanda

⁵⁰ Smartphone adoption in percentage of total connections was reported to be 48% in 2018 (GSMA 2019).

Willingness to use digital payments requires trust

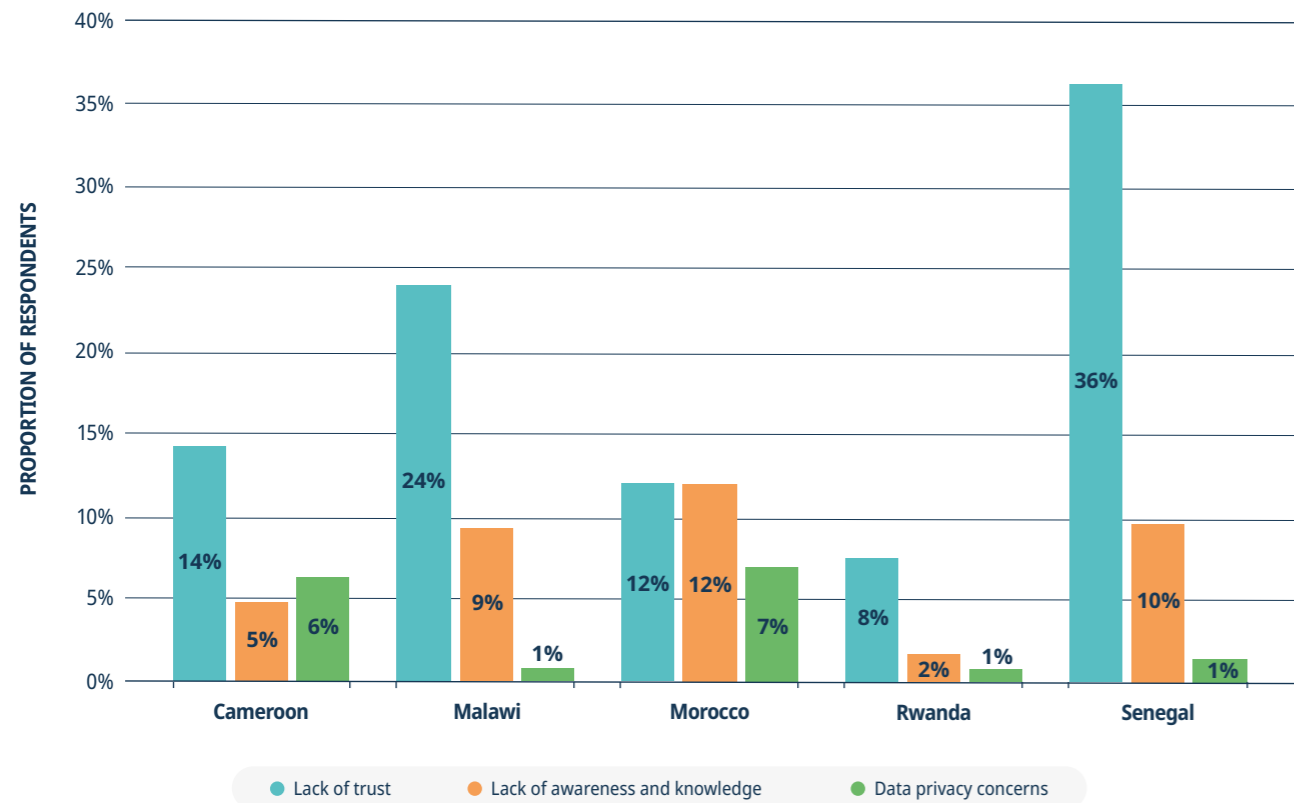
Willingness to use digital payments for the first time is influenced by a range of factors. Primary

“PEOPLE SHOULD NOT BE WALKING LONG DISTANCES TO FIND AGENTS.”
 — Male, 18-29, Non-user, Malawi

Lack of trust is the most significant usage barrier across all five countries. In addition, in Morocco and Senegal, which have the highest payment app usage, lack of awareness and knowledge is a significant barrier. In Malawi, 9% of respondents identified capacity challenges as a primary

barrier, possibly due to lower literacy levels among respondents. Data privacy is also perceived as a barrier across the sample countries, but except for Cameroon, it is not as significant as the others.

FIGURE 3.8 | Proportion of respondents that indicated the respective early usage barrier as their top-most barrier



The lack of trust stems from both prior negative experiences and respondents' lack of confidence in their own ability to manage digital payments. In Cameroon, widespread fraud has resulted in distrust among both non-users and users of digital payments. Low literacy levels affect exposure to digital payments, a foundational input to acceptance, leading non-users to distrust and avoid digital payments. Female and older respondents, in particular, fear that their poor understanding of digital payments will result in error or theft.

Other drivers of mistrust are more country specific. Where social networks play a strong cultural role, such as in Morocco, respondents trust a face-to-face interaction more than remote digital payments. Fraud experiences, especially in an environment where trust is paramount, diminishes digital payment usage (see Box 3.2).

“AT FIRST, I WAS AFRAID THAT I WOULD MAKE A MISTAKE WHEN USING IT.... THAT’S WHAT MADE ME STAY AWAY.”

— Female, 18–29, User, Morocco

BOX 3.2 | User experience: The impact of limited consumer redress on trust in Morocco

For Karima, who only uses cash to buy goods for her female clothing business, trust is paramount to how she conducts business: *“Most of my suppliers are women. [...] Sometimes they give me goods on credit, and I pay back when I have money. We know each other. We trust each other.”* Despite using social media platforms to sell her goods to customers, Karima does not accept digital payments, as she does not trust them. *“I feel more comfortable with cash because there are so many problems with credit cards.”* She used to have a bank account; however, she had a series of negative experiences where money was fraudulently deducted from her account. *“When I complained about these deductions, they did not do anything, they just told me they will check with head office. [...] I had opened this account to receive money from my customers and to save business money, but this did not work.”* The lack of redress for her grievances significantly impacted on her trust in digital financial services.

These barriers make clear that to spur early usage and habitual usage, digital payments must offer a clear value proposition that is superior to cash. For some, digital payments are more time and cost efficient and therefore more convenient than cash. For example, individual respondents acknowledged the benefit of digital long-distance P2P payments and recurring payments. MSMEs see the clear value of digital customer payments. In contrast, value-added services such as credit or finance planning tools were not viewed as compelling because they were not very developed or were otherwise nascent in their market. The exception was business respondents in Rwanda, who pointed to the benefit of partitioning savings and accessing loans as key early and habitual usage drivers.

The value proposition of digital payments is linked to the level of ecosystem digitalization, including the number of digital-ready endpoints. Consumers who have started using digital payments may find it challenging to maintain cashless habits if their social network and local businesses predominantly operate in cash.

Marketing activities by providers, such as marketing campaigns and rewards and incentive schemes, can help increase digital payments usage within an ecosystem and thereby unlock network effects. Examples in the field include point-based reward systems, where consumers receive fee reductions and/or gifts once they earn sufficient points, earned by making digital transactions. Digital salary payments can also drive early usage by reinforcing a digital ecosystem, supporting network effects. Government intervention can spur early usage as well. For instance, during the COVID-19 pandemic, the Rwandan government introduced fee waivers for digital

“WHEN I PAY FOR THINGS LIKE BANANAS OR FRUITS, I PAY IN CASH BECAUSE THE VENDORS DO NOT HAVE PHONES.”

— Male, 30–44, User, Rwanda

“I STARTED USING IT FREQUENTLY DURING THE COVID[-19] PANDEMIC. BEFORE THAT I USED TO USE CASH.”

— Male, 30–44 years, Rwanda

payments to incentivize the use of digital channels and contactless payments (Rwangombwa 2020). The fee waiver covered charges for push and pull services, money transfers, and merchant point-of-sale transactions. This resulted in a 4.5X increase in digital payment usage in Rwanda over a four-month period from January to April 2020.

Agents play a vital role in introducing digital payments to non-users and in promoting the habitual usage of digital payments by existing consumers. Respondents in Senegal reported that mobile money agents go from door-to-door to promote digital payments. In doing so, agents can market the benefits to potential users and guide individuals and MSMEs through the process of completing digital payments. In so doing, they aid in upskilling and thereby enhancing consumers' comfort with transactions.

Limited payment ecosystems, high transaction costs, and complex user interfaces create barriers to usage

The research assessed how end-users evolve from using digital payments occasionally to using them habitually for a diverse range of transaction. The data shows that as users become more comfortable with digital payments, their usage becomes more sophisticated, transitioning from occasional transactions such as receiving salaries or sending remittances, to more frequent transactions such as household purchases. Eventually, digital payments become habitual and an integral part of daily life.

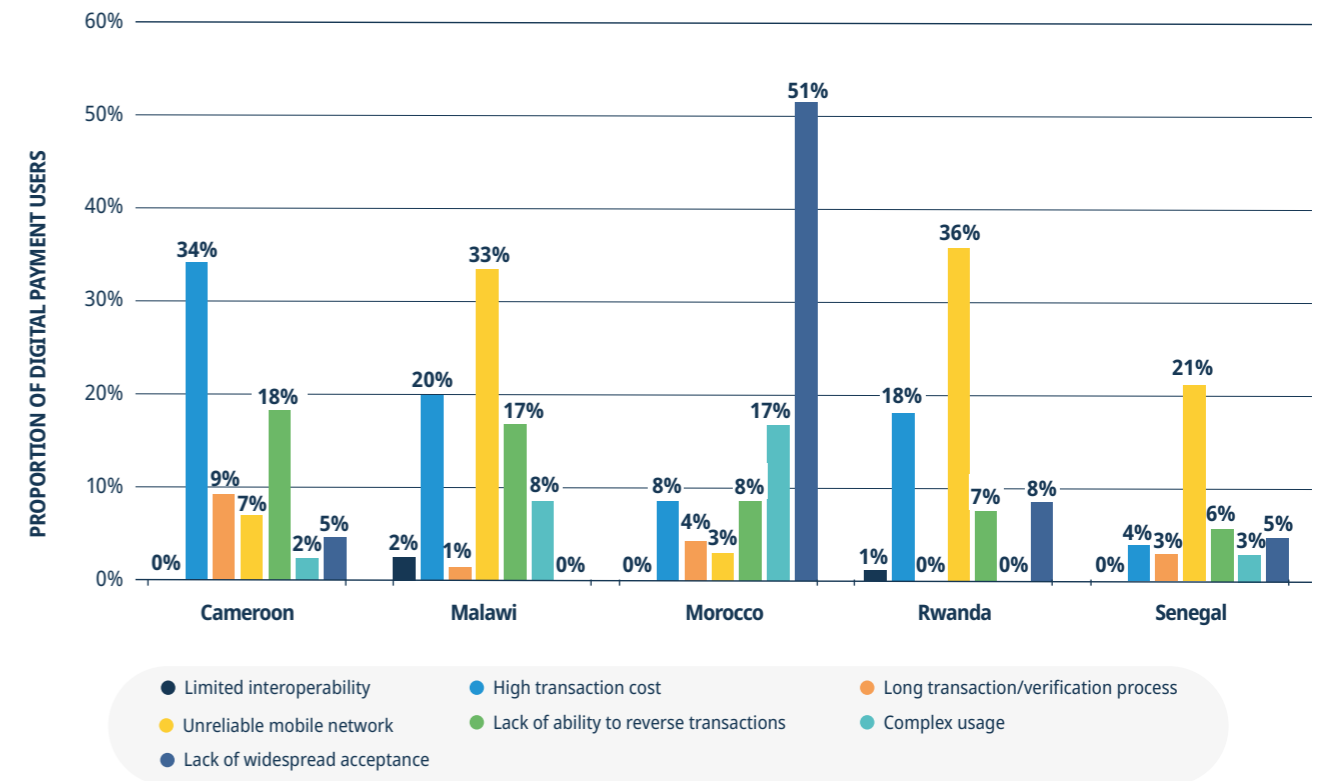
Barriers to habitual usage vary considerably between the different countries (Figure 3.9). In Morocco, where cash remains the most prevalent mode of payment, a lack of widespread acceptance of digital payments is a significant barrier. Infrastructure barriers can also create a barrier. For example, telecommunications infrastructure is fundamental for the processing of transactions, and unreliable mobile networks adversely affect the user experience in a variety of ways. Surveyed digital payment users in Malawi, Rwanda, and Senegal noted unreliable mobile networks as a challenge. In Malawi, the lack of reliable network coverage causes delays in initiating and processing transactions. In Cameroon and Senegal, network disruptions delay the receipt of confirmations of completed transactions.



High transaction costs and complex user interfaces also discourage habitual digital payment usage. Transaction costs are a critical barrier in Cameroon, Malawi, and Rwanda. For instance, some MSME respondents in Cameroon ask clients to cover transaction costs when paying through

digital channels, which discourages individual use. Complex, multi-step processes for certain transactions, such as the payment of utilities, are viewed as key usage barriers by respondents in Malawi. Similarly, in Morocco, certain bank apps are so difficult to use as to discourage it.

FIGURE 3.9 | Proportion of respondents naming each as their top-most barrier to habitual usage digital payments



As with initial usage of digital payments, convenience and time savings are the most compelling drivers of habitual use of digital payments. Respondents noted both the benefits from cost savings on transportation for long-distance transfers and from the convenience of conducting transactions remotely. Respondents also use digital payments to minimize cash-related risks, such as incorrect change, fake currencies, or theft, and value the traceability and visibility that comes with using digital payments (see Box 3.3 for a representation of the customer payment journey).

I USE [THIS APP] BECAUSE I DON'T HAVE TO WORRY ANYMORE ABOUT RECEIVING FAKE CASH [BILLS]."

— Male, 30–44, User, Senegal

I DISLIKE HOW SLOW THE NETWORK IS... A TRANSACTION CAN TAKE TOO LONG."

— Male, 18–29, User, Rwanda

BOX 3.3 | User experience: Transaction journey experiences highlight usage drivers and barriers

A popular app in Cameroon requires multiple steps for sending money to a contact (Figure 3.10). A similar multi-step process is required by a Rwandan app for making a supplier payment via USSD (Figure 3.11). **The transaction journeys are based on mystery shopping.**

FIGURE 3.10 | Transaction journey example for an app

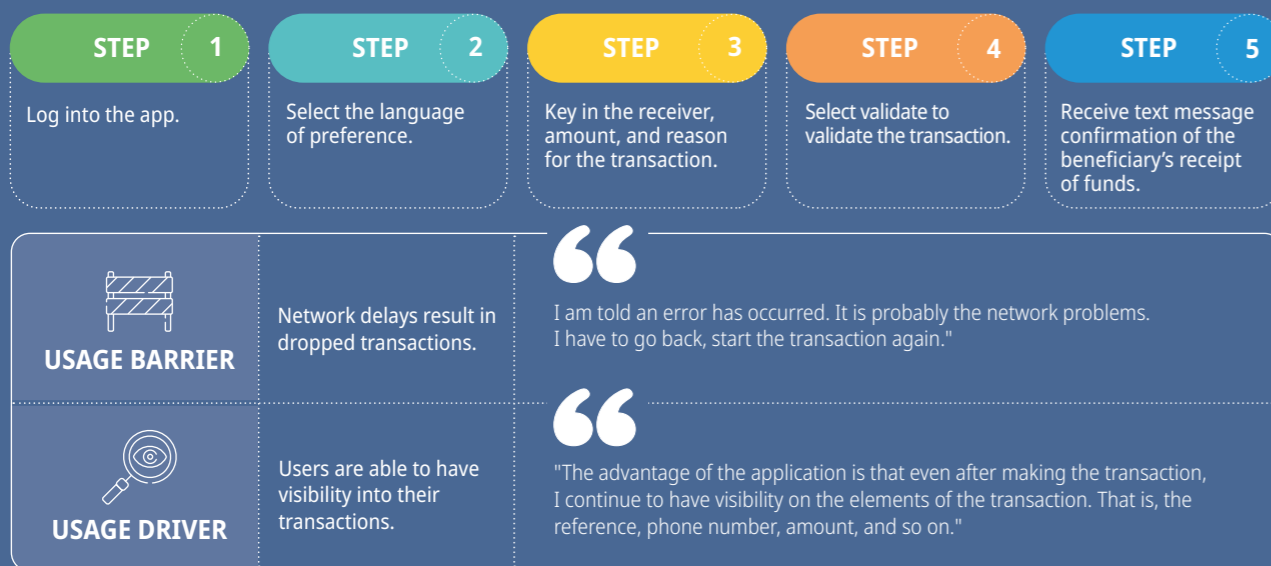
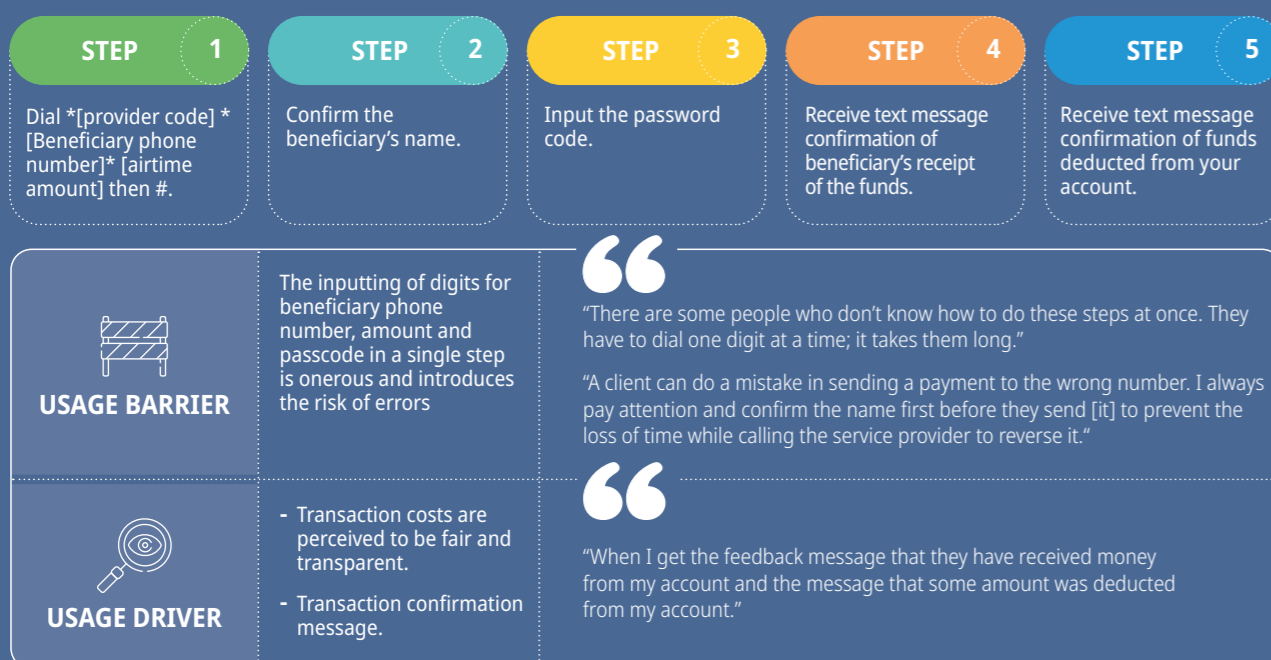


FIGURE 3.11 | Transaction journey example for USSD



3.2.2 The enablers and barriers to using digital payment vary for different groups

Different user groups experience distinct barriers that are often context-specific across gender, income level, and age.

Women face gender-specific barriers that vary within each country. In interviews, women highlighted limited financial independence, inadequate financial literacy, lack of confidence, and concerns about potential fraud and data privacy as barriers to habitual usage of digital payments. Socioeconomic, religious and cultural factors often underpin these constraints. While these multi-faceted barriers may not appear as attributes to a clear gender gap in the available digital payment usage data, they do suggest that women face more obstacles than men in using digital payments.

In Morocco, for example, a lack of independent income sources limited women's digital payment usage, as men are more likely to be responsible for household expenses. In Malawi and Rwanda, illiteracy was cited as a significant challenge for women's access to and usage of digital payment services. Illiteracy can compound challenges related to low self-confidence and limited exposure to digital payments, as noted by respondents in Cameroon, Malawi, and Senegal. As a result, women respondents in these countries are more likely than men to rely on agents to transact on their behalf. Women respondents from Cameroon and Senegal reported that women risk exposure to fraud and threats to data privacy, curbing their willingness to engage in digital payment transactions (Box 3.4).

Surveyed micro businesses and individuals with irregular income do not see the benefits of digital payments when compared to larger businesses and those with regular incomes. In the markets surveyed, respondents with unpredictable income often do not consider themselves potential digital payment users, perceiving that digital payments are only for salaried employees. Similarly, owners of micro enterprises surveyed may believe their business is too small to realize advantages from digital payments.

BOX 3.4 | User experience: Risks and challenges women face in using digital payments

Mary is a woman business owner in Malawi who is between 30 and 44 years old. Her primary source of income is from sales of phone accessories and agricultural produce. She is very concerned about fraud, particularly because she has a friend who was a victim of a scam. *“The customer then sent a message to her showing she had received the money and he left. When she confirmed her balance and found no money had been received, she knew she had been conned.”* She perceives women to be particularly vulnerable to fraud, due to illiteracy and limited exposure to technology. *“Women are always vulnerable to thieves and fraudsters. These people can easily steal from us...Most women did not go to school; therefore, they cannot easily make a transaction using digital platforms.”*

“**MY BUSINESS IS TOO SMALL TO USE THESE KINDS OF [DIGITAL] METHOD[S].”**

— Male, 30–44, MSME, Non-User, Malawi

The effect of age on digital payments varies across the countries studied. Younger respondents are more inclined to embrace digital payments due to the draw of innovation and the desire to engage in mobile transactions and e-commerce. In Morocco, one bank provider spurred digital payment adoption among younger consumers by offering free bank accounts for users under the age of 30. However, a lack of recurring income and payment opportunities—such as the need to pay household expenses—can prevent younger people from using digital payments.

On the other hand, while older individuals conduct more transactions and have larger incomes and more expense obligations, many struggle with digital literacy. Older respondents in Malawi and Rwanda reported that they sometimes forget their access passcodes and have difficulty navigating through the layered menus necessary to execute the USSD payment process.

 **Merchants are embracing digital payments to increase convenience and reduce exposure to payment risks**

Customer demand, agent outreach, and fraud prevention are among the top catalysts for businesses to adopt digital payments. MSMEs may initially explore digital payments at the prompting of customers,

eventually adopting them in the hopes of increasing payment convenience and ultimately sales. Pro-active agent outreach to onboard businesses and increase their awareness about the benefits of using digital payments play a critical role in driving acceptance as well. Finally, increasing security and reducing exposure to the risk of counterfeit cash motivate business owners to transition to digital payments as well.

Country-specific factors drive digital payment usage by merchants. In Morocco and Rwanda, businesses are incentivized by bonuses and rewards for digital payment use cases like airtime payments. In Senegal, businesses are motivated by the ability to receive payments for goods and services prior to delivery. Meanwhile, MSMEs in Malawi and Morocco emphasize traceability via transaction records as a key driver.

The barriers that impede businesses from using digital payments are similar to those of individual customers—ranging from network effects, insufficient availability of agents, fraud, and unreliable mobile networks.

BOX 3.5 | User experience: Core digital payment drivers for merchants



Uzamukunda, a woman and a tailor in Rwanda who is between 45 and 55 years old, is a frequent mobile money user. “[Mobile money] is the easiest method of payment, and it is fast. It is not costly, and it helps in management. When you keep money on mobile money...it is hard to spend it without a reasonable cause.” Moreover, using mobile money has enabled her to earn interest on her savings and enhance her business’ resiliency. “When I save money on the provider, after two weeks I receive interest according to which amount of money I have. And the provider can give you credit. When you get [an] unpredicted issue, they can give...a loan to be paid in a certain period of time.”



Agents see digital payments as a revenue opportunity for them, yet it comes with risks

MSMEs can earn additional revenue by becoming agents. Surveyed MSMEs who are also agents reported that they were recruited by mobile network operators (MNOs) or introduced to the agent business by their social circle. The main attraction for business owners to become agents is the additional source of revenue, which can diversify their businesses and enable them to increase their total income. Moreover, businesses experience liquidity benefits from having both cash and digital-based inflows and outflows.

The agent business is a cash-intensive business with challenges and risks. Cash flow challenges and competitive pressures can limit revenue. Agents face the same cash handling risks as other MSMEs, including the receipt of fake currency, theft, and robbery. Additionally, customers often expect agents to resolve transaction issues. To mitigate these risks, agents record transactions accurately for verification. A few ways they do this is by maintaining booklets of handwritten records of transactions or by taking screenshots of transactions. In Senegal, agents close their businesses early to minimize crime. Thus, while incorporating agent services within a business offers rewards, owner-agents must manage and mitigate risks effectively as further explored in Box 3.6.

“THE 10% DISCOUNT ON THE PROVIDER’S BILL ENCOURAGES ME TO USE [DIGITAL PAYMENTS].”

— Male, 30–44, Micro enterprise, Morocco

“I WAS INITIATED TO DIGITAL PAYMENTS BY MY CLIENTS. THEY GAVE ME THE DESIRE TO GET INVOLVED IN IT.”

— Male, 30–44, User, Micro enterprise, Cameroon

“IT’S A BUSINESS THAT HELPS ME MAKE SOME MONEY IN ADDITION TO MY SMALL BUSINESS IN COSMETICS AND PHONE ACCESSORIES.”

— Male, 30–44, Agent and micro enterprise, Senegal

“MOBILE MONEY IS A BUSINESS THAT REQUIRES MONEY. [...] WHEN YOU DON'T HAVE CAPITAL, YOU ARE WASTING YOUR TIME. [...] WHAT KILLS US THE MOST IS THE LACK OF CAPITAL.”

— Male, 18–29,
Agent and micro enterprise,
Limbe, Cameroon

BOX 3.6 | User experience: Challenges faced by agents in Malawi

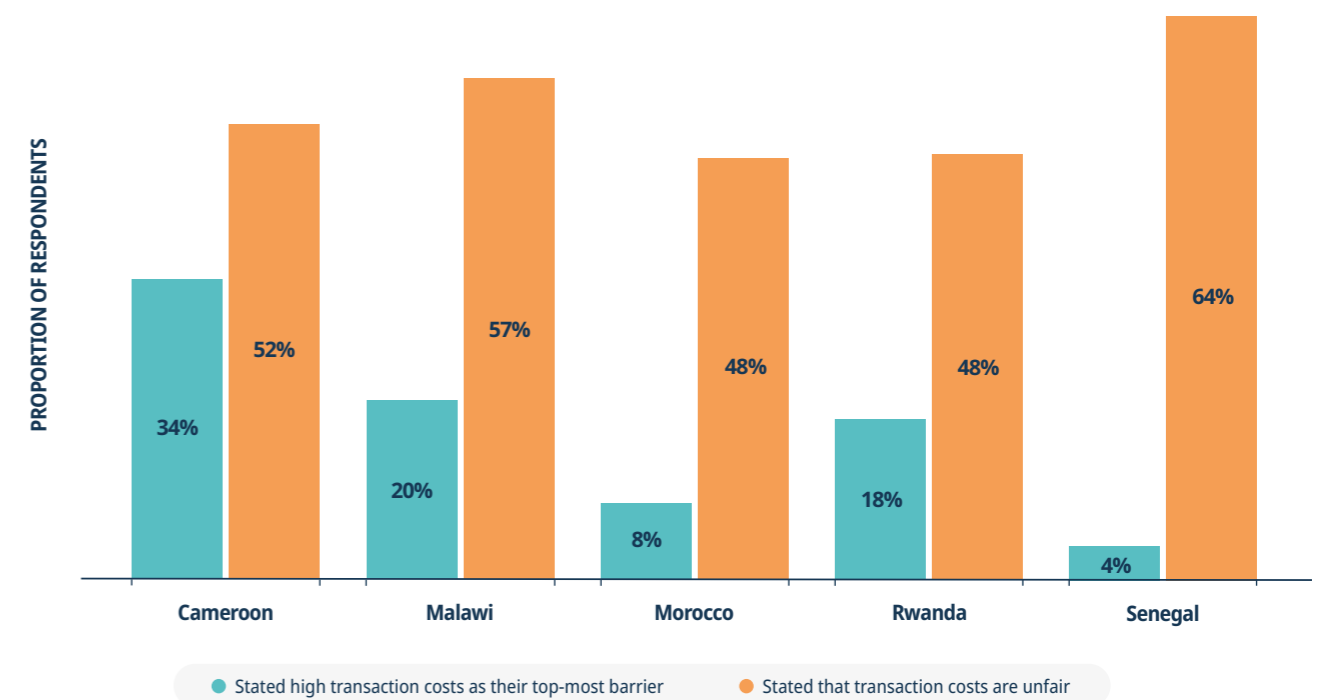
Samuel, who is between 30 and 44 years old, runs a grocery store and is a mobile money and bank agent. As a small agent enterprise, he facilitates service payments (e.g., bill payments) for customers. However, when service providers have outages or technical issues, customers bring complaints to him rather than to the provider. *“Sometimes you can pay DSTV for your customer, but you will see him coming back claiming that channels are not working. I am just an agent, but the entertainment company is to blame.”* Moreover, agents face additional risks, such as fraud and theft and especially perceive high-value transfers as risky. *“Fraudsters can also bring us fake banknotes, and they tend to bring more money like MK150,000 and thieves as well. [...] I also make sure that I close my business early to avoid thieves.”*

3.2.3 Perceived high transaction costs do not block surveyed users from transacting

While transaction costs are perceived as being high in all countries, those high costs do not always create a barrier to usage. Cash is considered free because users rarely consider implicit costs. As a result, users are sensitive to any digital payment usage charges. Risks associated with cash (i.e., theft and counterfeit currency) are harder for users to quantify and thus are discounted. Transparent and simple fee structures impact consumer perceptions of the relative cost of digital transactions or the implicit

costs of using digital payments (for example, subsequent withdrawal fees). Figure 3.12 shows the proportion of respondents that perceive transaction costs as unfair as well as the proportion of digital payment users that view transaction costs as their top usage barrier. The delta between the two categories, approximately 37 percentage points on average, shows that while respondents perceive transaction costs to be unfair, they do not avoid digital payments because of them.

FIGURE 3.12 | Transaction costs as a barrier to users



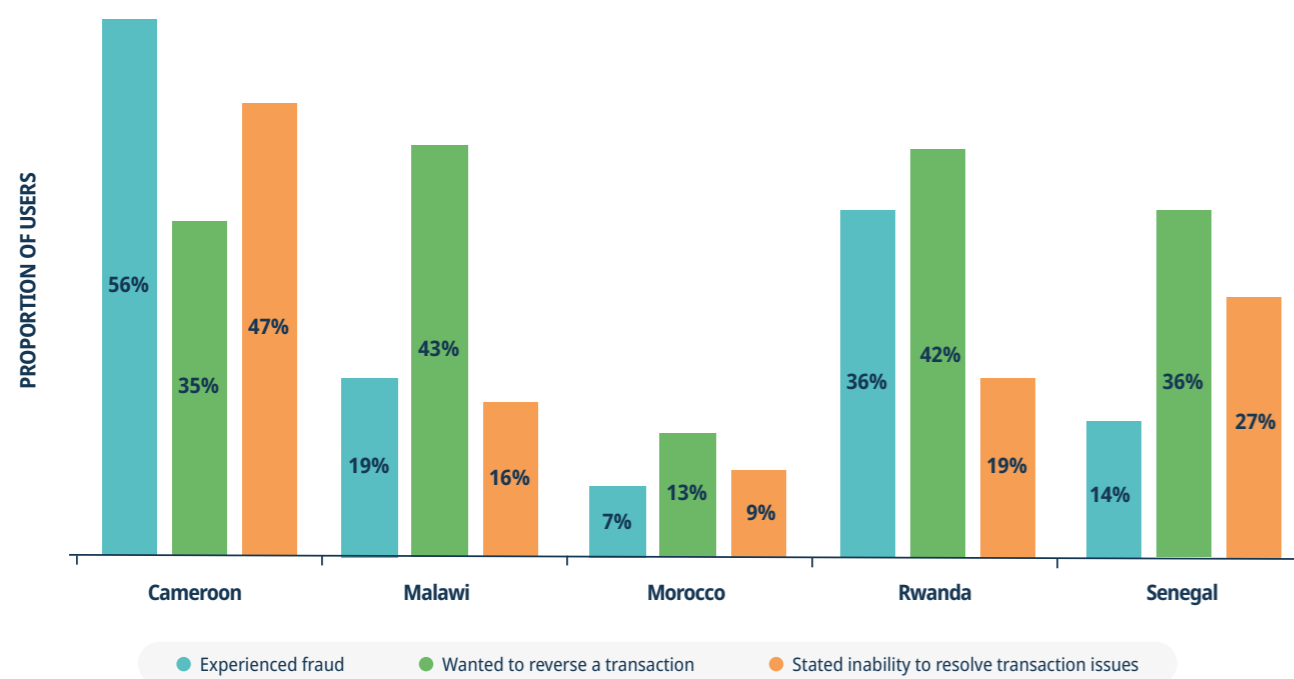
3.2.4 Fraud and the lack of recourse mechanisms is a significant barrier

Incidences of fraud primarily involve suspicious messages and calls attempting to obtain an individual's personal details to access their accounts. Among surveyed digital payment users, fraud appears to be most prevalent in Cameroon and Rwanda and the least prevalent in Morocco (Figure 3.13). For users in Cameroon and Rwanda, the most frequent fraud cases involve receiving calls attempting to access an individual's PIN or inform

consumers that they mistakenly sent money to their wallets. After those calls, consumers reported that their mobile money accounts were debited. In Morocco, respondents reported physical thefts at automated teller machines and the physical theft of wallets, which affect card users. Respondents in Morocco and Senegal, the two countries with the highest adoption levels of payment apps, reported the lowest level of fraud.



FIGURE 3.13 | Proportion of users who experienced particular barriers



The availability of recourse mechanisms influences the impact of fraud on payment use. Although fraud incidences are higher in some countries, the impact of fraud experiences is more severe in countries with weak recourse mechanisms. For example, 47% and 27% of respondents in Cameroon and Senegal, respectively, cited a lack of resolution for their transaction issues. As a result of this high level of fraud, digital payment users in Cameroon reported abandoning digital payments entirely or immediately cashing out funds following digital transactions (Box 3.7). In contrast, in Rwanda, less than 20% of respondents reported being unable to resolve transaction issues, and as a result, few mentioned any impact of fraud on their usage behavior.



BOX 3.7 | User experience: Discontinuing digital payment usage due to fraud experience

Charlotte, 30-44 years old, is a women MSME owner in Cameroon who discontinued her digital payment usage due to past incidences of fraud: *“I used to have mobile money however, I stopped using it. When I had my money in my mobile money wallet, scammers would call and ask to confirm your code. When you confirm [the] code, they withdraw all your money so that’s why I like when my money [is] in cash; because nobody can steal it from me.”* One of her experiences with fraud involved multi-channel contact attempts: *“Another instance was when they first sent me a message informing me that I have money inside my phone, then someone called me saying they made a mistake by sending me money. On checking, he instead dragged [withdrew] my money, I didn’t have money in my account.”*

Fraud, incomplete transactions, and errors motivate consumers to seek recourse. In Cameroon, fraud is the primary reason respondents required recourse. In Malawi and Rwanda, respondents required recourse primarily due to errors or losses from transaction time-outs or delayed transaction confirmation stemming from mobile network challenges. This finding aligns with unreliable mobile networks cited by respondents as the primary usage barrier in those countries. In Senegal, respondents sought to reverse transactions most often due to transaction errors.

The quality of recourse varies considerably between countries. In Morocco and Senegal, customer service is accessible through the payment service provider (PSP) apps or branches, and respondents cited rapid resolution of issues. In Malawi and Rwanda, agents are the primary access point for customers to resolve their issues, and the resolution of issues takes longer. In Cameroon, customer service appears to be the least accessible, with respondents noting that agents are either unable or unwilling to assist. Users must instead visit the MNO office in person to resolve their issues.

BOX 3.8 | User experience: The benefits of accessible customer service and recourse mechanisms in Senegal

Kine is a 30–44-year-old woman user of digital payments with a provider that has effective and rapid recourse mechanisms in place that allow users to rectify transaction errors: *“The customer service offers me a lot of satisfaction in case I have an issue. For instance, recently I made a mistake when making a money transfer. I called them and they responded quickly with my money being returned instantly.”* In-app messaging aids Kine in correcting typos or beneficiary information. *“It is possible that I could make a mistake using digital payments, but [the app] alerts me if the beneficiary has not withdrawn the money.”*

3.3 | Summary of consumer research findings

Despite differences across the countries the sample, there were some common conclusions from the digital payment user data. **They are:**



Countries face common usage drivers and pain points. While variances exist across countries, an overarching view shows that lack of trust is the most significant barrier to digital payment, followed by unreliable mobile networks, and high perceived transaction costs (Table 3.7).



Women face additional barriers compared with men although the severity is country specific. Limited financial independence, inadequate financial literacy, lack of confidence in their ability to use digital payments, and concerns about potential fraud and data privacy are the main barriers that fortify the gender gap in digital payment use. In most countries, women transacted less frequently than men, though the impact on adoption was limited. Respondents highlighted the important role of agents as core facilitators to women’s use of digital payments.

TABLE 3.7 | Summary of customer research findings

	Emerging					Nascent
	Cameroon	Malawi	Rwanda	Senegal	Morocco	
Landscape	Unique landscape characteristics	Regional differences in provider preferences	High transaction volumes	Government policy promoting digital payment usage	One player is dominating the payment app space	App-based DFS ecosystem
	IPS	No IPS	Cross-domain IPS	Cross-domain IPS	No IPS	Cross-domain IPS
Usage behavior	Proportion of population using digital payments over the past year <i>[Global Findex 2021]</i>	50%	40%	39% <i>(2017 data)</i>	53%	30%
	Proportion of digital payment users that use digital payments at least once a week <i>[including assisted transactions]</i>	80%	67%	93%	94%	14%
	Main payment providers used	MTN & Orange Money	Airtel Money, TNM, NBS Bank	MTN, Equity Bank Rwanda, Airtel Money, Bank of Kigali	Wave, Orange Money, Free Money	CIH Bank, Wafacash, Cash Plus
	Main payment channel used	Mobile money agents	USSD	USSD	App	App
	Largest user group differences based on at least weekly usage <i>[size of gap in percentage points]</i>	Older > younger MSME owner [17 pp]	Small enterprise > micro enterprise [32 pp]	Small > micro enterprise [9 pp]	Small > micro enterprise [9 pp]	Male-owned > female-owned MSME [18 pp]
	Most digitalized use case for individuals overall	Send or receive money	Pay for government services	Airtime	Save money	Receive salary
	Most digitalized use case for MSMEs overall	Recurrent payments	Transport money for staff/receive customer payments	Transport money for staff	Loan repayments	Receive customer payments

	Emerging					Nascent
	Cameroon	Malawi	Rwanda	Senegal	Morocco	
Drivers of usage behavior	Main barriers	<ul style="list-style-type: none"> • High level of fraud • Lack of trust • High transaction costs • Lack of Internet access 	<ul style="list-style-type: none"> • Lack of phone and Internet access • Unreliable mobile network • Lack of trust • High transaction costs 	<ul style="list-style-type: none"> • Lack of phone and Internet access • Unreliable mobile network • High transaction costs 	<ul style="list-style-type: none"> • Lack of phone access • Lack of trust • Unreliable mobile network 	<ul style="list-style-type: none"> • Lack of trust • Lack of understanding how to use it • Lack of widespread acceptance of digital payments • Complex usage
	Main drivers	<ul style="list-style-type: none"> • Family and Friends • Agent outreach • Network effects • Marketing promotions • Free transactions or lower transaction fees 	<ul style="list-style-type: none"> • Agent outreach • Long distance transactions • Employer influence • Marketing promotions • Minimize risks related to cash use 	<ul style="list-style-type: none"> • Government policy during the COVID-19 crisis • User rewards and incentives 	<ul style="list-style-type: none"> • Marketing promotions • Agent outreach • Minimize risks related to cash use 	<ul style="list-style-type: none"> • Free services • Training and sensitization • Employer influence • Helps with personal financial planning



3.4 | Consumer barriers can be partially considered in IPS design

The consumer research insights have important implications for IPS design or preconditions for success.



IPS versus PSP. End users interface directly with their payment service provider (PSP) for digital payment access and use. As a result, the end-user experience depends on the service provided by the PSP, not on the IPS. As such, if the PSP designs its service in a way that drives broad access and usage, even without an inclusive IPS, it will promote adoption—this is the case in Cameroon, Rwanda, and Senegal. Alternatively, the PSP can undermine inclusive IPS impact through inadequate service delivery.



Preconditions for success. Phone and internet access remain significant impediments to digital payment use, outside the control of the IPS and direct participants. National digital strategies are key to improving these areas.

IPS design implications:



Trust in provider and importance of recourse. Trust is critical for early and habitual use of digital payments. Scheme rules and operations have to build and retain consumer trust by enabling effective recourse mechanisms and consumer protection. These should scale with the dynamics of the market and can range from simplified rules to complex, centralized real-time analytics.



Consumer capability and awareness. Distribution, marketing, and targeted education initiatives are needed to onboard and empower consumers, especially women and the elderly, and to demystify risks of digitalization. Industry-wide initiatives could be adopted toward this goal in collaboration between IPS and participants.



Agent networks. Participant PSP agent networks are key to enabling access to those without devices and/or digital literacy and to promote awareness.



Language. Communication is needed in multiple languages to appropriately reach consumers to build capabilities and trust.



Network effects, or the extent to which digital payment instruments are widely accepted, is a key driver of use. The retail ecosystem must enable and accept a broad set of use cases to grow usage. Supplier payments from MSMEs is a particular gap.



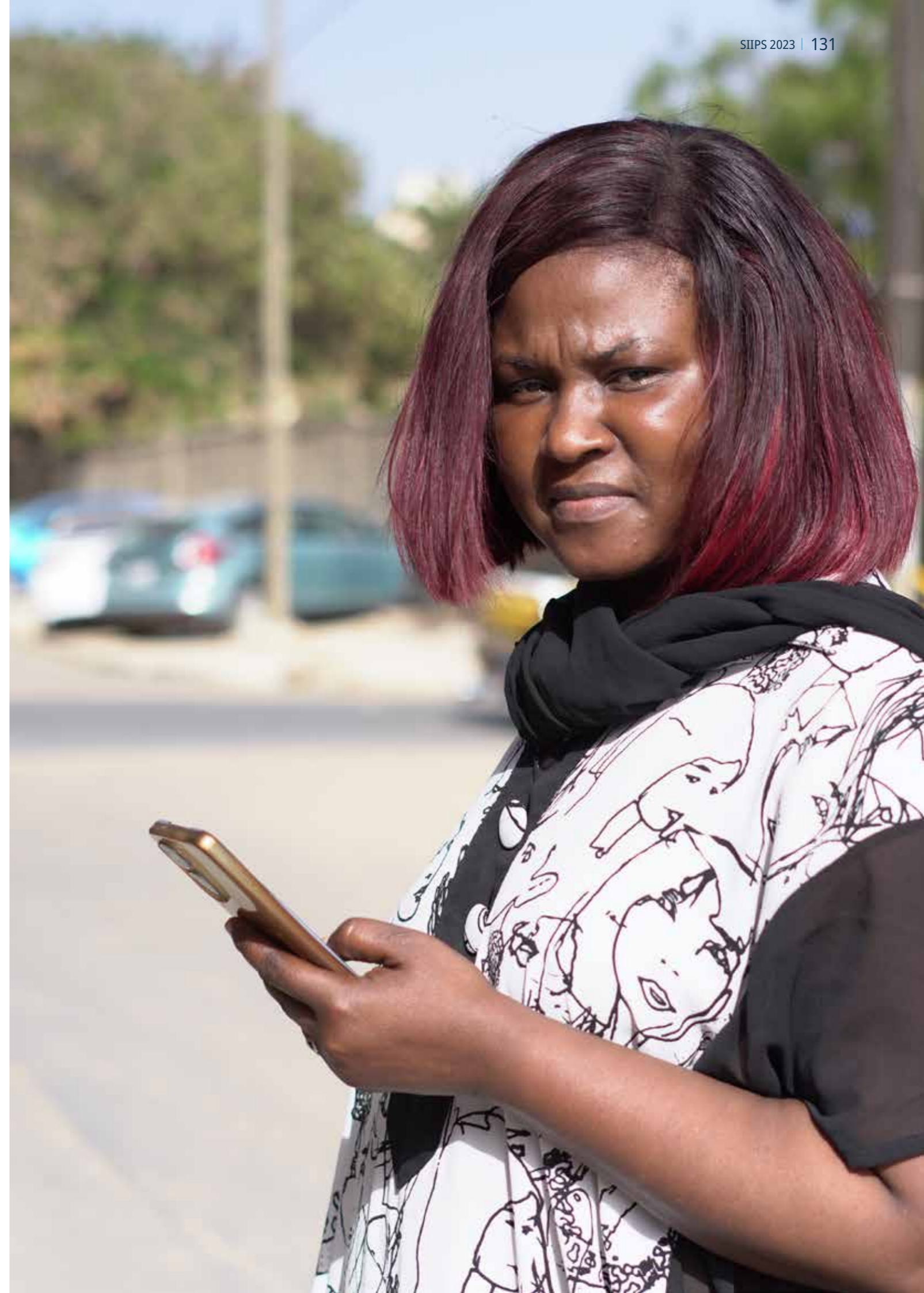
Reliability and ease of use are key drivers or barriers to use. Complex USSD menus, failed transactions, and apps that malfunction are particularly detrimental to use.



Prices are perceived as high across all countries. IPS and participating PSP that generate revenue through scale and volume rather than transaction costs are more likely to drive usage, given the untapped market of the financially excluded population.

- These suggested design principles were consistent with last year's consumer insights. Additional design elements to consider in countries with more significant degrees of usage include the need for value-added services to further deepen digital payments and limit cash-out transactions where usage becomes more mature.

With the combined insights from Chapter 2 on the landscape of IPS in Africa and the Chapter 3 overview of end-user adoption, Chapter 4 will examine the barriers and opportunities to scale, sustainability, and inclusivity for IPS in Africa.



BARRIERS TO AND OPPORTUNITIES FOR INCLUSIVITY IN INSTANT PAYMENT SYSTEMS



Chapters 2 and 3 have outlined the current state of the instant payment systems (IPS) market by highlighting the different IPS available, how widespread they are, the participants in their value chain, and the payment behavior of end users. The overall picture is one of growing availability of IPS across Africa and growing consumer and (less so, but still notable) merchant adoption of digital payments.

Yet the impact that an individual IPS has on inclusivity for instant payments will depend on whether payment service providers (PSPs) sign on to participate and whether end-users (individuals and merchants) adopt digital payments for most of their transactions. Neither is guaranteed.

This chapter discusses five hurdles that IPS must cross to be successful and achieve inclusivity. They are:

- 1 Achieving scale to drive usage
- 2 Developing a compelling value proposition to encourage PSP participation
- 3 Increasing digital financial inclusion for women
- 4 Expanding merchant and government payment use cases
- 5 Employing technology standards to facilitate IPS adoption and efficiency

This chapter provides an overview of these hurdles and the associated opportunities that IPS and their stakeholders could pursue to drive instant payment inclusivity.



4.1 The IPS business model requires scale to drive usage

The following barriers and opportunities, as relevant to IPS business models, are discussed in detail below.

Barriers:

For IPS:

- Lack of scale due to underutilization.
- Audience fragmentation due to competition with proprietary systems (closed loop) and overlap between regional systems.
- Limited scalability of the IPS due to proliferation of on-us transactions.
- Costly interoperability arrangements that are not fit-for-purpose.

For end-users:

- High interoperability fees.

Opportunities:

For IPS:

- Establish network effects by attracting additional participants and third parties.
- Build scale through additional use cases.
- Infrastructure-sharing to manage operational expenses.
- Lower transaction fees to drive uptake.
- Disaggregate data from on-us transactions to better understand implications on IPS business model.

For private-sector players:

- Embed enhanced value propositions and additional use cases into system design.
- Develop value-added services to improve the business model.

For public-sector players:

- Mandate interoperability in the absence of sufficient private-sector advancement.
- Evaluate the potential to consolidate infrastructure with regional partners.
- Integrate government disbursements (G2P) and collections (P2G) in the IPS.

For development partners:

- Undertake more research to inform optimal IPS design and business models.
- Provide early-stage funding throughout the IPS value chain investment needs, including for Proof of Concept, development, implementation, and scaling.

4.1.1 What are the barriers to scale for IPS?

A sustainable IPS business model needs to achieve a certain level of scale in the number of transactions it handles. Only with scale can an IPS offer sufficiently low transaction fees to end-users to drive usage. Expectations about scale (capacity) and transaction complexity are baked into IPS designs from the outset. When a live IPS is then underutilized, the operator must charge higher transaction fees to participants (i.e., financial service providers) to cover its operational costs. Those providers often pass on those costs to end-users in the form of fees. The IPS operator may also charge participants for setup costs—including for building the system, creating the governance and workflow, and onboarding the participants.⁵¹ Central governments, development banks, and donors often subsidize the setup costs to encourage adoption. Nonetheless, to break even and operate on a not-for-loss business model, most IPS operators must earn enough fees to cover operational expenses. That means that it needs to achieve scale. Yet there are a number of barriers IPS face to reaching scale. They include high prices relative to cash; and competition, including by private payment solutions and regional IPS; and a lack of payment data transparency in markets with dominant PSPs running on-us transactions with significant consolidation. Below, we examine each of these issues.



Perception of digital payment transactions as expensive

As seen in Chapter 2, instant digital payment volumes and values have risen in many countries in Africa. This suggests that IPS have the potential to scale sufficiently to drive costs down and encourage widespread and inclusive use. Some countries show faster progress toward that end than others. Ghana, Kenya, Madagascar, Nigeria, and Uganda process a significant number and value of transactions relative to their gross

national incomes. Yet, smaller nations such as Malawi (Natswitch), Zambia (ZECHL), and Zimbabwe (Zimswitch) have not yet reached similar volumes and values to these bigger economies, despite having launched more than three years ago.

As Chapter 3 highlighted, end-users in the five countries surveyed for this report perceive digital payment transactions as expensive, although a majority express that this does not hamper usage.⁵² Some IPS are taking steps to address the cost issue. PayShap in South Africa allows its participants to set the prices they charge to end-users. All PayShap participants opted to offer the service at a lower cost than the competing real-time clearing (RTC) system. Yet only one is competitive with cash at a price of \$0.05 (ZAR 1). Others charge up to \$2.40 (ZAR 45). This will impact the inclusivity of the overall system and negatively affect the business model in the long run as it struggles to reach sufficient scale.



In regions where proprietary systems are already established, IPS need a clear value proposition to achieve scale

In certain countries in Africa, proprietary systems preceded the entrance of IPS to serve the demand for digital payments. These proprietary systems—such as Mpesa in Kenya—have played a vital role in advancing digital payments. However, these proprietary system providers are servicing the same payment corridors that the three regional IPS in this study (GIMACPAY, PAPSS, and TCIB) are counting on for significant volume to subsidize lesser-used corridors (Stakeholder interview, 2023). The regional IPS will struggle to reach scale if they try to enter these markets as direct competitors, instead of as complementary providers with a unique and compelling offer.

⁵¹ The solid foundational work is often overlooked and accounts for many misaligned systems. It is a costly exercise but ensures a more fit-for-purpose outcome. The foundational work includes research diagnostics, understanding the market and development objectives, policy imperatives, setting the strategic objectives, building the governance and system framework, and, ultimately, system specifications, roles, and procurement. The governance framework needs to be designed upfront and not while the system is being built as it should be the driving force behind the IPS.

⁵² Users of digital payments are overrepresented in our sample of survey respondents. Therefore, while respondents indicated the expense of payments is not a barrier to use, current non-users or infrequent users of digital payments may be more inclined to choose cash over digital payments if fees are perceived as being too expensive.



Examples of proprietary solutions include:

- **MFS Africa**—This proprietary system is expanding its network of providers by offering an application programming interface (API). It self-reports connections to over 400 million mobile money wallets and 200 million bank accounts across 35 African countries (MFS Africa 2023). It currently partners with most major mobile money operators (MMOs) in Africa, and has integrated MoneyGram, Paypal, Western Union, WorldRemit, and Xoom for many corridors, including those that the three regional IPS are targeting.
- **TerraPay, Thunes, and Zeepay**—These growing payment network providers link PSPs with one another across borders. They developed in the absence of regional IPS, giving each a first-mover advantage in their respective geographies. They already have integrations with PSPs and have established themselves as trustworthy service providers. For IPS to grow, it will thus be important to identify a distinctive value proposition in markets served by TerraPay, Thunes, and Zeepay, rather than duplicating the service already available in the market.

Similarly, many private providers today are well-established in cross-border, person-to-business (P2B) merchant payment transactions. They enable these use cases through mobile money, and through local and international cards. These fintech providers offer critical services for the payments ecosystem. As newer entrants to the market, IPS operators will need to consider how their products and services interact with those already in wide usage in the market.

Examples of existing providers and services include:

- **Direct Pay Online (DPO)**—With operations in more than 20 African countries and connections to over 100,000 merchants, DPO Pay offers a payment gateway for businesses to accept credit and debit cards, mobile money transfers, and cross-border currencies in real-time, especially targeting e-commerce transactions (DPO 2023).
- **Cellulant**—With a focus on e-commerce merchant payments in 35 African countries, Cellulant collates payments through its Tingg platform, which allows end-users to pay through mobile money, local and international cards, or direct bank transfers.

- **Visa**—Established players like Visa are expanding strategically to take on parts of the value chain beyond their core network processing role. In December 2022 Visa announced its intention to invest \$1 billion in Africa by 2027 to drive digital retail payments. Since 2018, Visa had already invested considerable amounts in fintechs such as Nigerian payments processor Paystack (now Stripe), Flutterwave and Interswitch (Nigeria), JUMO in South Africa, and Bloom, a neobank in Sudan (TechSafari 2023).
- **Mastercard**—Mastercard has pledged potential investments of up to \$50 million in organizations within their Community Pass network. Community Pass is a digital platform present in five countries in Africa (Kenya, Mauritania, Mozambique, Tanzania, and Uganda). It aims to address infrastructure challenges in rural communities, such as unreliable connectivity, low smartphone ownership, and lack of credentials (Mastercard 2022).

Competition between regional systems presents another barrier to scale for individual IPS—although a less acute one than overlap with the private sector. There is an overlap in functionality between the planned COMESA system and TCIB. PAPSS also has continent-wide ambitions for some of the same use cases. PSPs will be faced with the choice of which systems to join and may select them on a per-transaction basis. This can translate into significant scale fragmentation. Depending on the interoperability fees charged, however, the competition could also lead to lower costs for end-users.



Payments processed “on-us” or within closed system involving multiple PSPs limit the market value of an IPS

Across Africa, there are also a significant number of transactions processed as “on-us” within the same provider system, which obscures the full picture of the market for digital payments. Instant payment transactions in Ghana, Kenya, Malawi, and Uganda are done mostly via mobile money through one or

two dominant providers. They include: MTN (Ghana), Safaricom (Kenya), Airtel and TNM (Malawi), and MTN and Airtel (Uganda). Other operators exist, but their market share is often significantly lower. As a result, end users often have one or two mobile money wallets by their preferred providers and conduct their transactions with that provider (Stakeholder interviews 2023).

Ghana offers a case in point: in 2022, only 2% of all mobile transactions were switched through the Ghana mobile money interoperability system. A comparable situation exists in Malawi, where the value of mobile money transactions increased by 42% between 2021 and 2022, yet the volume of mobile money transactions processed through Natswitch increased from 0.5% to 0.6%. This disconnect implies that the market position for the largest private providers is getting stronger.⁵³ One likely reason is that the mobile money operators (MMOs) charge lower fees compared to Natswitch (Reserve Bank of Malawi 2023). They affect the IPS because on-us transactions processed by a single provider limit the scale potential for an IPS, which can lead to sustained high costs in markets where on-us transactions dominate. IPS owners and operators must therefore be diligent in examining the business case for entering different countries. If the IPS determines that there is an open opportunity it can fill, it can explore ways to incentivize the dominant players within a country to join the IPS.

On-us transactions are not the only challenge to IPS scale. Some PSPs also integrate directly with one another following a standard set of rules. This is particularly the case in Kenya (for P2B transactions), Tanzania, and Uganda. In these multi-lateral arrangements, no third-party switch is required to facilitate interoperability. Only mobile-money IPS use this model; where it is in place, it is more difficult to transition to a cross-domain model. Nonetheless, these IPS achieve lower operational costs compared to a third-party interoperability model.

This approach gives a competitive advantage to entrenched providers, which limits opportunities for innovation and enhanced customer products, especially by neo-banks, MFIs, and fintechs. A multi-lateral IPS also typically requires pre-funding from the different

⁵³ The dominant market position by one or two providers was ultimately created through telecommunications business models and policy imperatives with unintended consequences in financial services. This has stifled competition and innovation in areas required to establish a digital ecosystem. Competition regulators, together with financial regulators and supervisors, should monitor these institutions, particularly where innovation is being limited by a regulatorily supported dominant market position.

institutions, which locks up capital. As activity on the IPS increases, the balances held by the PSPs can become a risk to the financial system if one or more members does not manage them properly.⁵⁴

IPS whose participants are connected via third-party interoperability arrangements bring the largest value in markets with a large customer base and multiple providers. The value proposition of a third-party interoperated IPS is much clearer for markets without dominant payment providers (often mobile money) and

with a large end-user base, such as Nigeria and South Africa. Interoperability in these markets increases choice for the end-users and deepens the payments ecosystem.

In smaller markets where one MMO dominates, in contrast, there is limited need for consumers and businesses to transact across providers. In the case of Rwanda, these factors might limit eKash's ability to scale. However, without any interoperability arrangement, there is a risk of further concentration of market share, which makes it harder for new PSPs to enter the market.

4.1.2 Incentives for PSPs, including advanced use cases, low costs, and easy integration, can drive scale

To reach scale and thus run a sustainable business model, IPS must attract the largest number of PSPs possible in a country or region. Operating at scale also promotes inclusivity by providing the opportunity for all PSPs, including new entrants and smaller players, to compete for customers. This can increase payment service quality, end-user interfaces, and recourse.

IPS can pursue scale in several ways:



Encourage PSP adoption

IPS operators can motivate PSPs to join their system by establishing open, adequate, transparent scheme rules, continuous stakeholder engagement, and central bank support. In markets that lack interoperability, the IPS value proposition to providers is grounded in the quality and pricing of the services provided by incumbents. In markets where the providers already established interoperability—for example through bilateral arrangements—the IPS business model depends on whether the provider decides to leverage it over established channels. Incumbents want to protect their market share and would rather route their transactions through bilateral mechanisms than on the switch.

There is an opportunity for regional IPS to pursue win-win collaborations with multiple incumbent proprietary systems already servicing key cross-border payment needs/corridors and enable banks and non-banks to be part of the IPS, creating greater choice for end-users. While these efforts require time and investment, they can create a fit-for-purpose IPS ecosystem that is available to and used by all PSPs in a region. A comprehensive stakeholder consultation process also allows IPS operators to adjust their value proposition to compete with profit-maximizing systems.



Support use cases beyond P2P

P2P transactions alone cannot sustain an IPS, as P2P involves frequent cash in and cash out transactions that remove liquidity from the system. Furthermore, even if most P2P payments were digitalized, it would still represent a limited share of the total payments value chain. Adding government-to-person (G2P), person-to-business (P2B), and business-to-business (B2B) payments is key to achieving low-cost transactions and inclusivity; as these payments are recurring, they are integral to driving lasting behavior change. (The imperatives for successful merchant and G2P payment integration are further

discussed in section 4.4). These types of payments are also highly valued by users. Finally, the value exchanged through these types of payments is more likely to remain in digital accounts and in the digital ecosystem without being cashed out. This keeps money in circulation within an IPS and across the digital economy. By offering a full suite of use cases, IPS can put themselves in the best position to compete with cash and create scale. PIX in Brazil, launched in 2020, is already used by over 700 financial institutions and is available to 120 million end-users. This rapid uptake was partly an outcome of offering all use cases (Sarkisyan 2023).



Offer low prices

IPS and participating PSPs are more likely to generate revenue through scale and volume rather than through higher transaction costs (which may inhibit use). PIX is cheap to use for merchants (0.22% on average per transaction) and free for end-users for P2P transactions. Offering lower-cost payment solutions is necessary to shift end-user preferences away from cash, which individuals and merchants often view as free to use because they cannot easily quantify its inherent costs (which in fact include risks of loss, theft, or related costs such as travel to cash-out points). In markets where proprietary or partially interoperable systems already exist, the IPS fees need to be on par with or below those charged by existing systems. PSP prices must also be competitive to drive inclusivity.



Seek subsidies, philanthropic funding and patient capital to support IPS during the start-up and scale phases

IPS design factors such as the type of system (bank, mobile money, cross-domain, or sovereign) and interoperability arrangements should be aligned with the size of the digitally active population, the number of PSPs in the market, and the underlying regulatory environment. A system should be self-sustainable and financed by its participants to ensure longevity.

Yet even well-designed and well-sized systems may need start-up capital to get up and running. Central banks and governments, as well as development partners, can be instrumental in subsidizing those start-up funds and reducing the cost burden placed on participating PSPs and potentially on end-users. These subsidies should encourage PSP participation.

Research and frameworks created early in the design process should be a key part of the investment process to ensure that the resulting IPS addresses the realities of its market. Proofs of concept and pilots allow the IPS to test its business model and value proposition and provide key lessons. The results from these experiments can highlight necessary changes or customization and convince stakeholders to implement the system.

Start-up capital may not go far enough to fully establish the IPS. The journey to scalability can be long and require additional investments. In Zambia, the Bank of Zambia recognized the need for the switch to be a public utility and assisted the banks with the setup and implementation costs (Stakeholder interviews 2023). Such public-private partnerships acknowledges that private system ownership has large investment requirements, and carries significant risk for owners, often requiring contingency funding. Jointly or partially owned IPS can function as public utilities.



Share infrastructure

The current capacity of many IPS exceeds the volumes of domestic transactions. Rather than building new independent systems in every instance, an alternative approach may be to leverage excess capacity in the existing switching infrastructure in regional or underutilized domestic systems. This approach, which helps to keep costs low, has been adopted by GIMACPAY and is envisioned by the WAEMU IPS—both regions are also monetary unions, which makes this cooperation easier.

⁵⁴ These nostro-vostro accounts are prefunded and it is essentially the MNO's own funds sitting in another MNO's e-money account. There would need to be a special dispensation, security, or liquid guarantee to cover the funds or overall exposure of the scheme participants to any one of the other participants. Operationally, cash management becomes intensive with each additional participant. It can quickly reach a point requiring automation, depositing increasing amounts on competitor platforms, or require the implementation of a dynamic collateral management platform across the scheme.

For the seven countries lacking live or planned domestic IPS, there is an opportunity to utilize shared infrastructure to enable instant payments via domestic or regional IPS available in neighboring countries.⁵⁵ This option is more complex in non-monetary zones. For example, TCIB is in discussions with some SADC member countries to potentially support domestic switching via the regional system (Stakeholder interviews 2023). Smaller countries that will not generate a substantial number of transactions by themselves can benefit from layering domestic services onto the existing regional capacity. Beyond sharing IPS capacity, operational costs can be reduced by leveraging open-source software, efficiently operated cloud services, and other shared services.



Fill knowledge gaps

Central banks and IPS owners/operators can better understand market dynamics by seeking more data and insights. Particularly in markets with existing dominant players, on-us transactions represent a significant share of the potential scale—yet they are hidden, making it difficult to develop complementary services. Sustainability in instant payments will require IPS to consider these dynamics when developing system design processes to ensure they have a unique value proposition and business case.

Thanks to the data shared by the Bank of Ghana and information available through the Reserve Bank of Malawi, the SIIPS 2023 report is able to showcase on-us transactions for both countries—a key milestone on our journey.

⁵⁵ Botswana, Cabo Verde, DRC, Eritrea, Libya, South Sudan, and the Seychelles.

4.2 IPS need a compelling value proposition to encourage PSP participation

The following barriers and opportunities, as relevant to the IPS proposition for PSPs, are discussed in detail below.

Barriers:

For IPS:

- Entrenched interests erode economics for PSPs.
- Lack of transparency of scheme rules, volumes, and values.
- High compliance burden, foreign exchange limitations, and operational challenges.

For end-users:

- Lack of all-to-all interoperability.

Opportunities:

For IPS:

- Embrace participant-led processes.
- Make scheme rules and data more visible to improve PSP trust and buy-in, and to assist with compliance.
- Endorse payment digitalization agenda and implement regulatory updates.
- Allow new entrants to live-test products in a risk-controlled environment.

For private-sector players:

- Encourage participation in the consultation processes to articulate operational challenges.

For public-sector players:

- Convene all relevant players and ensure equal access for all PSPs.
- Embrace reforms to mitigate policy and regulatory barriers (especially around CDD and licensing) and foreign exchange challenges.
- Mandate greater transparency in scheme rules and detailed, disaggregate reporting of data related to volumes and values.
- Enable concept testing through regulation around innovation frameworks.

For development partners:

- Evaluate IPS design effectiveness and value proposition in the market context.



4.2.1 What are the barriers to a compelling value proposition?

As mentioned in the previous section, the sustainability of an IPS business model requires a core group of participants and end-users to adopt the system at sufficient scale. The IPS value proposition hinges on the notion of interoperability as essential for enabling end-user choice and inclusivity as it applies to channels and recipients—just as cash enables universal choice. PSPs in Africa do not universally embrace the concept of interoperability, however. Dominant PSPs with a large market share, as well as those invested heavily in proprietary infrastructure and direct bilateral integration with value chain players, may not benefit from sharing common payment rails. For established PSPs, joining an IPS can require duplicate investment beyond their existing bilateral integrations and commercial arrangements. Even in markets that have mandated interoperability, PSPs may continue to clear transactions through existing bilateral arrangements rather than through a domestic or regional switch (Stakeholder interviews 2023).

A lack of transparency surrounding scheme rules and IPS volumes and values exacerbates this prevailing sense of competition between IPS and the PSPs. Only one IPS (Rwanda's eKash) has made their scheme rules openly accessible (National Bank of Rwanda 2020). The lack of access to scheme rules deters new and established PSPs and limits their buy-in. Confusion about rules, risk mitigation measures, fee structures, and governance modalities can fuel perceptions of unfairness and a lack of balance in power between different PSPs (Stakeholder interviews 2023). Some aspects of the scheme should remain proprietary to mitigate risks—for example, the technical specifications and fraud/risk rules. Where possible, however, IPS should pursue transparency to drive higher engagement by PSPs. This includes transparency about transaction volumes and average values. Few central banks and IPS operators publish and publicize this data, which can limit participation by new entrants to a country or to a scheme. PSPs must prioritize integrations and are likely to place those with more transparency higher on their list.

In addition, PSPs face many regulatory requirements from which IPS participation does not shield them (regulatory barriers are further discussed in Chapter 5). While IPS can help address certain regulatory requirements, such as interoperability or the existence of inclusive digital rails, many countries and regions still have constrained digital payment markets.

Some of the more pressing issues include the lack of:

- 1 **Risk-proportional licenses for different PSPs.** Non-traditional PSPs such as fintechs are disincentivized to innovate when they are subject to the same licensing requirements as deposit-taking banks. Risk-proportional licensing can lower the compliance burden for non-deposit-taking PSPs (appropriately, as they are not holding deposits and thus should not be subject to the same capital requirements as banks), making it economically feasible for them to participate in the market.
- 2 **Risk-proportional customer due diligence regulation and guidance.** Again, when non-bank PSPs are subject to bank regulations, the know-your-customer (KYC) requirements are unnecessarily burdensome given the PSPs' lower fiduciary responsibility relative to banks. Tiered KYC rules facilitate wider participation in digital payment markets.
- 3 **Modern and adaptable cybersecurity and data protection principles and guidance.**
- 4 **Competition rules/regulations around channel access,** such as the quasi monopoly by MMOs of USSD, digital connectivity access (telecom market liberalization), and the provision of DFS, among others.
- 5 **Policy and regulatory harmonization and common payment system directives.**

These challenges are major cost drivers for PSPs. IPS that are not actively working with regulators to address these issues may not offer a sufficient value proposition.

4.2.2 Opportunities for improving the value proposition for PSPs

IPS can take steps to improve their value proposition in several ways:



Increase transparency

Publishing scheme rules and increasing IPS data visibility can improve PSP trust and buy-in. Similar to licensing requirements that are publicly available to PSPs, more accessible scheme rules improve transparency and can increase trust among prospective PSP participants.

Operators and central banks can publish the scheme rules on their websites, as in the case of eKash in Rwanda or the UK's Faster Payment System. Ideally the scheme rules would include dedicated sections on the IPS performance (e.g., service levels). Nigeria (for NIP) and South Africa (for RTC) already have dashboards in the public domain with IPS performance data. Making this data available raises awareness of the IPS and creates visibility of the system for stakeholders, development partners, and investors. Africa needs more countries to take this step using common measurement standards. This will lead to better insights, and richer data analytics, which will, in turn, improve the common knowledge of IIPS. With more, and more accurate, information, ecosystem stakeholders will be better equipped to argue for inclusive access to financial services for the poor.



Increase PSP input

IPS should provide an avenue for PSPs to provide feedback on design principles, rules, and risk mitigation measures. This feedback could inform IPS design in a way that encourages PSP participation. It can also strengthen communication between central banks, operators, and industry stakeholders.

The experience of setting up the IPS in Malawi, Rwanda, and Zambia demonstrates the value of engaging in intensive and ongoing stakeholder consultations and participant-led design principles to meet PSP needs. With stakeholder input, the IPS volume and value projections can be based on solid foundational research, including demand- and supply-side

diagnostics and context-specific metrics and factors. In the case of the Bank of Rwanda and RSwitch, the IPS convened industry stakeholders regularly during the design phase. This gave PSPs clarity on the intentions for the system and its potential benefits for participants. It also gave PSPs the opportunity to raise competition concerns. In Malawi, the approach was similar—after initial reluctance from commercial banks on the subject of allowing access by non-banks to the system, Natswitch hired independent experts to demonstrate the value of interoperability via evidence-based projections and global examples (Stakeholder interview 2023). Engaging in collaboration on design established a strong foundation for participant engagement.



Engage policymakers on interoperability

Policy is a powerful tool for IPS buy-in by the industry, as it guides all payments stakeholders toward a common and mandatory goal. Endurance and consistency in policy guidance, including a strong focus on public-private partnerships, can be core to the future success of an IPS. As a case in point, Rwanda's National Payment System Strategy 2018-2024 strongly endorsed a transition to a cashless society and laid out a gradual approach, including an implementation plan and performance indicators to track progress (National Bank of Rwanda 2018).



Seek regulator endorsement

The central objective of many of the IPS highlighted in this report—such as the regional GIMACPAY system as well as Egypt's InstaPay, and PayShap in South Africa—is to increase the inclusivity of digital payments. Where central banks

either manage or oversee IPS, there is an established link between regulatory changes, interoperable payment rails, and the central banks' inclusion mission. Public authorities can take steps to overcome structural barriers in their jurisdictions, such as commercial misalignment between private sector players and mission misalignment between the public and private stakeholders.⁵⁶ Though PSPs have likely voiced concern about many regulatory barriers, a joint IPS project that is industry-led and regulator-endorsed can provide a mutually beneficial mechanism to enact regulatory and supervisory change.



Foster innovation

In their role as innovation facilitators, regulators have several tools at their disposal to encourage market development in digital retail payments. These include setting up innovation hubs, which are often central contact points to provide support, and guidance to either regulated or unregulated FSPs to help them navigate the legal and regulatory environment, without involving the testing of products or services. There are regulatory sandboxes, which allow financial providers to innovate and test new products in the market prior to achieving full regulatory approval or licensing but can be expensive and logistically complex to manage. Regulators can use letters of no objection, limited licenses, and provisional licenses. IPS implementors can establish approaches that allow new entrants to test products in a live environment without significant risks to the market. This could be enabled through risk-proportional licenses. The data insights that IPS transactions produce can be used to create robust identity proxies or aliases, customize consumer and business products, and foster open banking and open finance.



Share services

IPS can provide foundational solutions—such as IPS-issued USSD codes or apps—that foster innovation by giving PSPs a plug-and-play solution to distribute their products. PSPs then compete on quality of the user experience rather than channel dominance. Such shared services have the advantage of creating brand recognition among end-users. PIX, for example, is a branded IPS with services separate from those branded offerings delivered by its participating banks and other PSPs.



Enhance scheme rules

Comprehensive scheme rules can provide an additional layer of trust to digital payments and create a more level playing field for IPS participants. The following drivers merit more detailed incorporation into scheme rules:

- **Centralized insights into consumer protection and cybersecurity threats**—Using transaction pattern data, IPS can supplement PSPs' existing transaction monitoring systems. Having access to this kind of data would be especially relevant for mobile money providers and MFIs, who might lack the capital and capacity to implement advanced fraud monitoring tools. Delivering these insights requires

an analytics center that can make use of supotech—or technologies designed to support supervisory agency activities. IPS can also strengthen end-user recourse processes through additional oversight of dispute resolutions.

- **Managing regulatory risk**—PSPs that face higher compliance costs as a result of greylisting—meaning they are being subjected to greater scrutiny by regulators due to deficiencies—could benefit from additional risk management and mitigation measures, provided by the IPS to its members, that may improve PSP standing with international value chain partners such as correspondent banks. Adhering to risk-based principles with guidance by the authorities can assist PSPs to upgrade their systems in line with FATF recommendations (Stakeholder interviews 2023).
- **Creating a forum for technical assistance to central banks, financial intelligence centers/units, and PSPs**—IPS can serve as a central resource across its market for a range of technical capabilities, for example, by strengthening PSP risk assessment models and implementing concepts such as simplified due diligence. This is feasible only if all licensed PSPs are IPS participants. Having a central source of methodology and knowledge at the IPS can help PSPs conduct risk-based assessments of their product, channels, and clients (Stakeholder interviews 2023).



⁵⁶ In South Africa, there was a growing digital divide between those that adopt digital services and those that withdrew all their money at an automated teller machine. RTC was geared to large transactions and wealth management clients due to the pricing and as a way of not cannibalizing existing product and revenue lines. Predictably, commercial strategies rendered RTC largely underutilized. The National Treasury, which is the financial inclusion policymaker, had initiated discussions across the industry years ago and formulated the concept of IPS for the mass market using proxy identifiers. The concept languished for years until it was revisited, given persuasion from the central bank and other regulators and supervisors due to the numerous private attempts to establish a viable e-money ecosystem that had ended and given a change in strategic thinking on retail revenue lines.

4.3 IPS must increase digital financial inclusion for women

The following barriers and opportunities, as relevant to digital payment inclusion for women, are discussed in detail below.

Barriers:

For IPS:

- A persistent gender gap exists in digital payment usage for most use cases; this is exacerbated by gaps in phone, internet and legal identity documentation access.
- Gender-specific designs are not yet being embraced as a standard in IPS development.

For end-users:

- Women's digital payments needs are not adequately met.

Opportunities:

For IPS:

- Work with direct and indirect participants and regulators to support gender-specific needs in payment system design; support access and usage incentives for women.
- Analyze gender-disaggregated data to identify product and service design opportunities for women.
- Establish effective recourse mechanisms to counter fraud and increase trust.
- Integrate G2P use cases.

For private-sector players:

- Leverage agent networks, including female agents, to onboard, build trust, and familiarize women with digital payments.
- Adopt eKYC processes for improved access.
- Improve go-to-market activities and features for women, taking into account lower smartphone ownership and appropriate proxy IDs.
- Improve recourse mechanisms for female clients.
- Collect and analyze more gender-disaggregated transaction data.
- Leverage technology to improve security of personal information and physical safety for women.
- Develop gender-inclusive strategies to reach more women.

For public-sector players:

- Remove regulatory access barriers by reforming documentation requirements for KYC and explicitly allowing eKYC.

Opportunities:

For public-sector players:

- Strengthen requirements and oversight of recourse mechanisms.
- Create gender-disaggregated data reporting requirements.
- Commission nationally representative surveys, including adopting a deliberate gender lens to inform appropriate gender strategies.
- Develop subsidy programs around increased smartphone roll-out and adoption.

For development partners:

- Research and publicize gender disparities and needs to inform public and private sector products and services.
- Assist public and private sector with technical assistance around gender intentional and transformative strategies.
- Support public- and private-sector strategies around increased smartphone roll-out and adoption.

4.3.1 Can IPS address barriers to women's financial inclusion?

The gender gap in digital payments remains significant. In some countries in Africa, it has widened in recent years. Global Findex data highlights that women in Sub-Saharan Africa (SSA) are still less likely than men to own and use either a financial institution account or a mobile money account. Specifically, the gender gap in bank accounts nearly doubled from 7% in 2011 to 12% in 2021 (49% of women have a financial institution account versus 61% of men). The gap is smaller for mobile money accounts: 30% of women own one compared with 36% of men. Individual countries see different dynamics as it relates to the widening or the narrowing of their account ownership gender gap. For example, in Côte d'Ivoire and Mozambique, significantly fewer women than men opened new accounts since 2017, increasing the gender gap to 27% and 22%—from 11% and 18%, respectively



(World Bank 2021c). While account ownership in Ghana and Senegal is relatively high, women are 10% and 15% less likely than men to have an account, respectively (GSMA 2023a). Across the sampled countries in this report, digital payments usage is also subject to a gender gap. Indeed, women conduct fewer digital transactions than men (15 transactions for women per week compared with 22 transactions for men).⁵⁷

Several challenges will need to be overcome to narrow gender gaps in account access and digital payments, including the lack of financial literacy and independence for women, constraining social norms, and systemic lack of access to social infrastructure such as telecommunications networks, phones, government-issued IDs, and the like.

⁵⁷ This finding is corroborated by GSMA in Ghana, Kenya, and Senegal (GSMA 2023a).

Regarding financial literacy, women are less likely to be financially literate and, in some cases, have limited financial independence. This lack of experience and exposure make them fearful about fraud and data privacy. As discussed in Chapter 3, female respondents from Cameroon and Senegal reported higher exposure to fraud and data privacy risks, which made the interviewees hesitate to use digital payments. In Morocco, women cite a lack of independent income sources as a reason for lower digital payment usage.

PSPs may fail to limit these barriers or even exacerbate them. For example, embedded gender bias among PSPs (including fintechs), regulators, agent networks, and other stakeholders, mean that women may not be offered appropriate products or considered when developing market outreach. These biases carry over into the algorithms used in the financial sector to run credit risk analyses, to name one example, as well as to dictate product offerings, or prioritize delivery channels (Singh and Ledgerwood 2023). PSPs that want to address these systemic issues and develop women-centric outreach or product offerings may also be stymied in that effort by a pervasive information gap—gender-disaggregated data remains largely unavailable at the system level.

4.3.2 Opportunities for IPS to promote gender-inclusive digital payments

While many of the key barriers to women's use of instant digital payments lie outside the purview of an IPS, there are actions IPS and other market stakeholders can take to mitigate some of them. They include the following:



Establish effective recourse mechanisms to counter disruptions and fraud

IPS should be pro-active in monitoring and enforcing recourse mechanisms across digital channels and providers. Though PSPs usually function as the first-line contact for end-users seeking recourse, IPS can provide an additional recourse channel between the PSP and the central banks or consumer protection agencies. More information on recourse can be found in [Annex D](#) and more information on fraud can be found in [Annex E](#).

In addition to the barriers over which IPS have some degree of control, there are other systemic barriers outside of their control. Specifically, women often lack access to mobile phones, mobile networks, and the internet. Even in Kenya, a country with the highest mobile money adoption in SSA, only 88% of women own a mobile phone—as compared to 93% of men (GSMA 2023a). SSA has among the widest gender gaps in mobile internet use in the world, resulting in more than 190 million women lacking access to mobile internet services (a 37% gender gap; Kwankwa 2023). Female respondents across our sample in Rwanda and Malawi also cited low levels of literacy as a significant challenge to access and use of digital payments. Lower self-confidence and low digital exposure levels influenced respondents in Cameroon, Malawi, and Senegal. Even those women who want to open accounts face challenges if they lack the identity documentation needed to do so. In Nigeria, 17% of female respondents versus 11% of male respondents cited a lack of documentation as a barrier to opening a mobile money account (GSMA 2023a). Finally, social norms play a role: in six countries in Africa, women are legally prohibited from opening a bank account without their husbands' consent (World Bank 2023a).⁵⁸

In the event of service disruptions that create the need for recourse, IPS can set rigorous standards for cyber resilience and business continuity to ensure rapid recovery of services after disruptive events. Operational risk management policies established by the IPS should also include transparency clauses mandating that participants share data related to operational incidents with the participant group. Within the system design, participant PSPs can be required to perform security screenings to ensure dispute resolution timelines and comparable standards for all payments in an IPS. Centralized transaction limits and other rules-based flags are potential measures to cap the exposure of end-users to fraud (BIS 2016). IPS may also require upgrades to the infrastructure for USSD to allow end-users, and particularly women who frequently use USSD, to transact safely in high velocity settings (e.g., a market).



Reconsider regulations with differential gender impacts

Removing the country-specific challenges related to identity document access and tiered accounts could enable inclusive instant payment systems, especially for women. Central banks could evaluate regulations to understand their differential gender impacts and re-define those that limit women's financial autonomy. In addition, domestic and regional strategies that take a gender lens to payment system design, and that support ecosystem incentives for increasing access and use of digital payments by women, can serve as powerful levers to address constraints. Of 20 countries in SSA with national financial inclusion strategies, 19 include a focus on financial inclusion for women (World Bank 2023c). Many lack specifics, including what data should be gender disaggregated and how regulators should monitor and evaluate gender inclusivity.

Multi-lateral organizations can also influence policies that exist across multiple countries. In 2020, the Group of Seven (G7) launched its Partnership for Women's Digital Financial Inclusion in Africa, bringing together five institutions to focus on building gender-inclusive, sustainable, and responsible digital financial systems (G7 2022).⁵⁹ The mainstreaming of gender across all of the Alliance for Financial Inclusion (AFI) working groups has the potential to embed gender awareness into policy (AFI 2020). To date, AFI has recognized 32 member institutions for their progress in promoting gender inclusive finance, including through policy changes. Of these, 17 are African central banks.⁶⁰ IPS designers, supervisors, and regulators can apply the learnings from these institutions in their respective jurisdictions.



Leverage gender-disaggregated data to inform products and services

Gender-disaggregated data is crucial to supporting women's financial inclusion and empowerment. Gender disaggregated data surfaces the different realities lived by women, allowing providers to better meet women's needs. For example, complicated USSD menus, dropped transactions, and apps that malfunction have had disproportionate impact on digital payments sent by women. Targeted, gender disaggregated data collection within and outside an IPS can inform investments for gender-centric product design and upgrades to service quality.

Some countries already require gender disaggregated reporting. In Egypt, a circular from 2018 mandates banks to report gender-disaggregated data on MSMEs owned or governed by women. This data feeds into the Financial Inclusion Datahub established by the central bank, which collects data from financial institutions using the national ID (World Bank 2023c). Insights from this data are fed back to the market.

IPS, especially those that run on ISO 20022 or proprietary messaging systems with enhanced data fields, can guide participants to capture sex-disaggregated data in real-time while applying data privacy and data protection principles. Alternatively, an IPS in collaboration with a central bank could mandate in its scheme rules that participants report gender-disaggregated data on a monthly or quarterly basis. This latter approach may be more feasible in places or systems that face technical barriers to data collection and reporting.

⁵⁹ "The African Development Bank's Africa Digital Financial Inclusion Facility is working to catalyze gender-intentional development of infrastructure, policies, regulations, and product innovation. The World Bank's Identification for Development Initiative is working to help countries build inclusive and trusted ID and civil registration ecosystems that increase access to—and the quality of—services and economic opportunities, promote the realization of rights, and empower people with more control over their personal data. The United Nations Capital Development Fund's Africa Policy Accelerator is accelerating inclusive policies for digital financial services. The Abdul Latif Jameel Poverty Action Lab is funding and generating policy-relevant evidence on the effects of digital identification and e-payment systems. The Oxford Blavatnik School of Government's Digital Pathways Initiative assessed countries' ecosystems for digital development." (G7 2022)

⁶⁰ Central banks of Angola, Burundi, Egypt, Eswatini, Ghana, Lesotho, Liberia, Malawi, Morocco, Mozambique, Nigeria, Rwanda, São Tomé e Príncipe, Tanzania, Uganda, Zambia, Zimbabwe.



Embrace gender-sensitive agent networks

As discussed in Chapter 3, PSP agent networks play a key role in building awareness about digital payments and helping end-users build the knowledge and self-confidence they need to navigate new systems. PSPs can increase end-user access to agents by allowing a more widespread tier of agents to perform basic services without submitting to extensive due diligence requirements. Women feel safer with women agents; given that, IPS stakeholders should encourage women to sign on as agents within communities—including in rural communities. This should increase instant payment usage by women, and thereby increase scale in the IPS. (Stakeholder interview 2023).



Seek synergies between financial inclusion barriers and other access gaps

Pairing digital account access and digital identity initiatives has proven to be a successful strategy for driving digital payments uptake. In Pakistan, the number of women who signed up for IDs nearly doubled after the government linked its identity system to a social payment scheme (Hendricks 2019). The BCEAO is developing a database with a unique financial account identification proxy for end-users, who must sign up and verify their payee information through their PSP interface to transact. The PSP verifies the payment address in the recipient institution via the central service and then the IPS pushes the payment using ISO 20022 after successful verification.



4.4 | IPS must expand merchant and government payment use cases

The following barriers and opportunities, as relevant to merchant and government payment use cases, are discussed in detail below.

Barriers:

For IPS:

- Limited circulation of digital value limits the ability of IPS to scale and reduce costs.
- User adoption of merchant payments has lagged and merchants continue to operate informally.
- G2P contracts have been awarded selectively or not digitalized.

For end-users:

- The argument for convenience is less persuasive due to lack of full use-case integration.

Opportunities:

For IPS:

- Encourage affordable and reliable P2B payments for merchants and end-users through scheme rules on pricing and transparency, and incorporate value chain B2B payments and end-user incentives.
- Open up G2P distribution.

For private-sector players:

- Facilitate the distribution of G2P payments, especially in rural areas.
- Cater to various P2B acceptance technologies supported by both smartphones and feature phones.
- Develop and adopt adequate pricing strategies for merchants and end-users to drive adoption of P2B payments.
- Adjust P2B strategies in line with longer-term vision of full interoperability and consumer choice.
- Run targeted awareness campaigns around G2P and P2B payments to drive adoption.
- Develop B2B and other use cases to drive digitalization of the full value chain.

For public-sector players:

- Pursue G2P integration with IPS rather than with individual providers.
- Digitalize payments to and from businesses and within the public sector for full value chain digitalization.
- Run awareness campaigns around G2P and merchant payments digitalization with the private sector.
- Develop pricing strategies with the private sector and IPS to drive G2P and P2B digital payment uptake.

For development partners:

- Research the G2P-IPS integration nexus in Africa, its challenges, and best practices, to better inform the ecosystem on inclusivity opportunities.
- Conduct technical assistance around adequate roll-out of digital G2P payments.

4.4.1 What are the barriers to merchant and government payment use cases?

An inclusive IPS removes friction and increases convenience for end-users by enabling digital value to circulate within an economy without conversion to cash. The IPS economy operates not just on P2P payments, but on all types of payments—including P2B, B2B, and G2P. Yet, as Chapter 2 pointed out, most IPS prioritize the P2P use case as a starting point. P2P payments alone are not enough to sustainably scale an IPS, however. Furthermore, focusing on P2P payments without adding other payment types in a timely way creates ecosystem blockages, because end users must cash out their money if they want to spend it with merchants or use it to pay bills. This happens even in countries with expanding access to financial services. For example, in Malawi, which is successfully expanding penetration of mobile money, a large share of transactions in 2022 were cash in/cash out, airtime top-ups, and P2P transfers (Reserve Bank of Malawi 2022). This limits an IPS' ability to scale and thereby bring costs down. It also prevents the development of network effects and the incorporation of non-payment providers into the IPS ecosystem (e.g., governments). In sum, scale and convenience dictate that IPS offer a wide range of use cases, particularly merchant and government payments. Yet they face challenges achieving that end.



Competition and costs impede early use and scale of P2B payments

Despite the dominance of P2P payments as a share of transactions, merchant payments are on the rise. According to research conducted for this report, 20 IPS already support P2B merchant payments. The uptake and use of P2B payments lags far behind P2P, however, even though merchant payments represent a significantly larger addressable market. As shown by the consumer research from Rwanda (the most digitalized of the five focus countries), 56% of transactions for airtime are digital, compared to only 34% of transactions for household goods and 33% of transport payments.⁶¹

A lack of trust is one reason P2B adoption lags P2P. End-user individuals and merchants are concerned about payment transactions failing because of network quality issues. These can come about from electricity outages or poor network connections. Digital platforms also make it easier for fraudsters to operate. Each of these issues introduces trust concerns that may drive end-users and merchants to opt to use cash.

Certain channels raise more concerns than others. The security and scalability that underpins USSD and SMS channels were not designed for financial services. A substantial increase in transactions on these 2G network-enabled channels can potentially overload them and cause transactions to fail.

Merchants may have more of an incentive to overcome their trust issues if IPS represented the sole solution for digital P2B payments—but in many cases, they do not. As highlighted earlier in this chapter, well-capitalized global card associations like Mastercard and Visa are increasingly investing in front-end solutions such as virtual cards in Africa.⁶² If individual end-users adopt these payment methods, merchants will be drawn to do the same. International providers of closed-loop solutions, as well as dominant domestic or regional PSPs, may have brand advantages that help them penetrate the market and offer low prices.

IPS must offer a compelling value proposition that these other market players do not have in order to complement their offerings. For example, IPS may promise interoperability and spare merchants the cost and effort of joining multiple systems and investing in duplicate hardware or complicated operational workarounds. Failure to land on a compelling IPS value proposition may result in continued market fragmentation and, as a result, non-inclusivity in digital P2B payments.

Some additional issues that prevent the further uptake of merchant payments include:

- Transaction fees for P2B payments can range from 0.5% to up to 10% per transaction. Even in geographies that have a transaction maximum to prevent excessive charges, the expense can decimate the margin for an MSME. In Nigeria, for example, the cap is \$2.15 (NGN1,000). Compared to the perceived low cost/no cost of cash, these charges are substantial.

- In addition to fees, there can be small per transaction taxes on mobile money or digital transactions, which can quickly erode the profits for a business. Subscription and start-up costs for point-of-sale devices also increase the cost burden of P2B digital payments for merchants. Less visible costs such as cash-in or cash-out fees due to a lack of upstream digital payment acceptance, among others, add to the expense of digital payments.
- Merchant payments go hand-in-hand with B2B payments. As demand grows for these payment types, it could create momentum for broader payment digitalization which could keep the costs of developing B2B digital payment solutions down.



Government payments remain underutilized for IPS

G2P payments, which are often recurring, and which reach marginalized population segments, can be an important driver of scale for IPS. For some beneficiaries, they can be the only digital source of funds. According to the Global Findex 2021, 37% of banked adults in developing economies opened their first account to receive a government or private sector wage payment (World Bank 2021c). This finding highlights the significance of digital payments in expanding financial inclusion.

Only six IPS currently integrate G2P payments, however (Ghana GIP and MMI, Madagascar mobile money, MarocPay, NIP in Nigeria, and Uganda mobile money). Though the G2Px Initiative at the World Bank is supporting the modernization of G2P programs in Africa, most are not yet digitalized and instead rely on cash-based distribution. Where they are digitalized, they are often disbursed exclusively through one or two providers, limiting the distribution network, and requiring beneficiaries to cash out. Digitalization of government payments should be a priority of IPS as part of offering a holistic set of payment use cases to support the broader economy.

⁶¹ Despite the drive for digital-only transport payments in Rwanda, most people still pay moto and bus drivers in cash (Stakeholder interview 2023).

⁶² TNM Mpamba, a Malawian mobile money provider, launched a digital Mastercard debit card called Khadi Mbambande in 2021 to increase financial inclusion among the underserved population in the country. The solution links with a customer's TNM Mpamba mobile money wallet and can be used by customers to make in-store digital payments, withdraw money, and make online purchases without needing a bank account (Chingaipe 2021; Mastercard 2021b). Early evidence shows significant take-up of Khadi Mbambande, which is now expected to bring more than 9 million new people into the payment system, approximately half of the Malawian population (Chingaipe 2021).

4.4.2 Transparency and integrations can help grow merchant and government payments

Despite the challenges that IPS face around merchant and government payments, there are nonetheless some levers they can pull to improve their position and drive scale. They include attractive pricing and transparency, integration with digital ID registers to facilitate secure payment processes, and provider competition in G2P payment distribution. **For example:**



Drive higher merchant payment uptake through transparency and pricing

IPS can support P2B uptake by documenting pricing caps and transparency requirements in the scheme rules. Low transaction costs, especially when compared to closed-loop systems, are particularly important for IPS to entice a wider merchant network and more providers. In fact, data from Kenya and Rwanda shows increased merchant adoption of digital payments during the COVID-19 pandemic, when temporary fee reductions were in place.

Outreach and incentives cannot stop with the merchants, however. The Reserve Bank of Malawi noted the need for stronger efforts to motivate individuals to use mobile money to pay for goods and services (Reserve Bank of Malawi 2022).

P2B enablement can propel IPS to sustainability, but enhancing the digital payment ecosystem also requires B2B payment digitization—initially for lower-value transactions—so that value can flow digitally through the entire ecosystem. IPS can leverage the existing mobile money or cash-in cash-out agent network to encourage merchant and individual end-users to execute a transaction digitally wherever possible, as these agents often play a role in transitioning users from one form of payment to another. Especially within cross-domain IPS that have interoperability, moving to digital P2B and B2B payments lessens the risks and operational costs of cashing out digital funds for both agents and merchants.



Integrate with digital identity registers

The COVID-19 pandemic rapidly accelerated the government transition to digital disbursement of social grants. IPS and PSP can leverage this momentum. Research shows that G2P payments were more efficiently distributed in countries that had existing centralized and digitalized identity schemes. Globally, countries that were able to use digital databases and trusted data sharing to identify grant beneficiaries reached 51% of their population, on average, while those without only reached 16%, on average (World Bank 2022d). IPS that enable G2P payments and link to centralized beneficiary registers (with appropriate consumer and data protection principles) can unlock scale and inclusivity.⁶³



Expand providers for more efficient G2P distribution

IPS can encourage choice in the distribution of G2P payments. Including a larger provider base can lead to higher rates of digitalization and broader use cases.

That is what happened when the South African Social Security Agency, responsible for social grants, transitioned payments from a sole-provider model to an open model and invited all market PSPs to sign-up to distribute funds. TymeBank in South Africa, a digital-only bank, leveraged the opportunity to invest in onboarding end-users at social grant offices, in some cases facilitating that user's switch from the incumbent.⁶⁴ TymeBank signed up over 1.2 million grant recipients in six months (Roest and Maponya 2023). Having a larger pool of PSPs to choose from led to a higher rate of G2P payment digitalization for South Africans, and beneficiaries were able to perform a wider range of digital transactions without needing to cash out.

IPS are the ideal platform for social payment providers to have a single integration but still enable provider choice for end users. This is the next step in the evolution of G2P programs (CGAP 2018). The IPS must be able to process bulk transfers and have a technological approach that allows government ministries to integrate directly or indirectly. Natswitch in Malawi is planning such an integration layer for the coming year to facilitate digital G2P payments and drive scale through an e-payment gateway (Stakeholder interview 2023).

⁶³ Additional research is needed on the G2P-IPS integration nexus in Africa, its challenges, and best practices, to better inform inclusivity opportunities.

⁶⁴ TymeBank did not use an IPS to facilitate the payment processing.



4.5 Technology standards can facilitate IPS adoption and efficiency

The following barriers and opportunities, as relevant to technology standards, are discussed in detail below.

Barriers:

For IPS:

- ISO 8385 is outdated but ISO 20022 remains expensive.
- QR codes are not yet standardized.
- Data sharing restrictions limit innovation.

For end-users:

- Disjointed payments experience is inconvenient.

Opportunities:

For IPS:

- Adopt API integration layers to enable integration with ISO 20022.
- Introduce standardized QR codes.
- Inform country strategies on digitalization and open banking.

For private-sector players:

- Proactively develop APIs to enhance collaboration with value chain actors.
- Provide input into domestic or regional strategies on open banking and open finance.
- Develop and implement forward-looking strategies around data sharing between institutions.

For public-sector players:

- Develop an adequate domestic or regional approach to open banking and open finance.
- Develop a domestic or regional mandatory QR code standard.
- Revise regulation and guidance around data sharing where needed to drive innovation.
- Safely share data with the private sector and across public sector departments.

For development partners:

- Support private sector transition to ISO 20022 where required.
- Provide technical assistance to adopt adequate QR code standards.
- Elevate global examples of data sharing to advance development outcomes.

4.5.1 Barriers to standard development and adoption in the digital payments space

Standards can encourage direct and indirect participants to sign on to an IPS, confident that the systems or integrations they promote will enable interoperability and compatibility between different payment systems and devices and have long-term relevance across the market. Yet the process by which a standard becomes accepted and widely used can be indirect and convoluted. Even when standards are widely adopted by one part of the market, they may be shunned by another. Furthermore, the incentives to adopt a market standard vary—dominant market players may instead want to promote their approach as the de facto market standard. These dynamics create barriers to standard adoption. **For example:**



Misalignment on ISO 20022 and ISO 8583 adoption creates complexity and expense

Consider the ongoing fragmentation in the payments market between ISO 8385 and ISO 20022, the most common standards among IPS. ISO 20022 is an especially powerful standard as it provides a common language and syntax for financial transactions and for international payment systems. Large banks have already migrated to ISO 20022 to align with international counterparts and international systems, such as SWIFT. ISO 20022 is the most supported standard among IPS for which AfricaNenda has scheme information. Non-bank participant PSPs have not adopted ISO 20022 as widely, however, possibly due to costs, especially for smaller PSPs (World Bank 2021h).

ISO 8583 was designed, in contrast, for a pre-internet era and does not easily support the use of modern communication technologies. Many banks have nonetheless implemented the standard to accommodate card processing. ISO 8583 is also relatively inflexible: it has a fixed message format and limited support for

customization. This can make it difficult to add enhanced data fields and adapt to new payment types and business requirements, such as instant payments or open banking. The existence of multiple standards and their limitations, IPS setup and design makes compliance more complex and, as a result, more costly.



Markets lack standardized QR codes

QR codes streamline transactions by allowing people to scan a barcode to pay, which can speed up transactions in face-to-face settings like shops. It can also accelerate service delivery. While several countries have issued guidelines around the standardization of QR codes, most IPS markets still lack standards. Without a standard in place, customers may be unable to scan a QR code with their preferred app, resulting in confusion and a lack of trust in digital payments. A lack of standard QR codes additionally puts pressure on merchants to either register and manage multiple QR codes, or to restrict acceptance to a single provider. Further, a lack of standardization decreases the incentives for PSPs to introduce dynamic QR codes, which pre-populate both the recipient's name and the transaction value, adding convenience.



The largest PSP controls a concentration of data

Data bestows market power, especially for customer segmentation and targeting. Key market players, such as large banks and dominant mobile money providers, can wield their extensive client data for competitive advantage. This increases the entry-costs for start-up innovators and fintechs limiting competition and consumer options.

4.5.2 A mix of standards and workarounds will promote interoperability

IPS can take some of the following approaches to lower the barriers to interoperability:



API transaction layers

Several systems have, or are building, API translation layers that enable participants with legacy systems to integrate with IPS that run on ISO 20022. For example, eKash (Rwanda) has an API integration layer while Natswitch (Malawi) and WAEMU are planning one (National Bank of Rwanda 2020, stakeholder interviews 2023). API layers introduce some costs to the system, but with the tradeoff that they enable implementation for otherwise excluded participants, such as savings and loan associations and microfinance institutions (MFIs). These types of provisions acknowledge the cost burdens certain standards impose on participants.



Standardized QR codes

Standardization of QR codes, a low-cost and simple technology, is widely accepted as a promising means to increase convenience and unlock scale in P2B payments. Early implementations are largely using static QR code protocols.⁶⁵ Most use a shared QR code model implemented with EMVCo standards.⁶⁶ Several countries have released domestic QR code standards. The Ghana Interbank Payment and Settlement System, for example, was the first to launch and implement a domestic QR code standard, the Universal QR Code, in partnership with Hightech Payment Systems. Merchants can receive payments via a static or dynamic QR code. The Central Bank of Nigeria has also developed a domestic QR code standard, the Nigeria Quick Response Code. In 2022, the Bank of

Tanzania issued its domestic TANQR code standard based on the EMVCo QR Code Specification for Payment Systems. The Central Bank of Kenya launched the Kenya Quick Response Code Standard (KE-QR Code Standard) in May 2023.

QR code standards ensure that merchants can process QR code payments from any provider, either in-store or online. In the absence of a national standard, the IPS can create a system standard for its participants. This can facilitate the use of P2B merchant payments by any end-user with inexpensive hardware. Depending on merchant needs, the options range from a printed QR code on a piece of paper to a more comprehensive acceptance system using dynamic QR codes for merchants with multiple cash registers. The ability of QR codes to scale from the smallest to the most complex merchants make them an attractive option for expanding the digital payments ecosystem.

Governments and regulators also have a role to play in promoting standards. Country strategies on Open Banking and Open Finance (broadening responsible access to financial data to promote innovation and competition), for example, can propel technology standards forward. Open finance has been introduced in the UK, the European Union (EU), and Australia, among other countries. Nigeria and South Africa have taken steps toward open banking through regulatory standardization of API access. Rwanda is also considering open banking based on the European Union's Payment Service Directive 2, which requires informed customer consent for payment initiation and any use of personal data. The Rwanda Payment Systems Strategy 2018–2024 introduces APIs in the financial sector and also supports the implementation of technical standards by 2024.

Open Finance is interesting for access to KYC data, as it allows end-users to give consent to a financial institution to access KYC information that has already been verified by another financial institution. This makes onboarding faster, more convenient, and more affordable for end-users and institutions (Cenfri 2022). Standards around data sharing can enable the development of robust proxy identities or aliases for end-users. These would be PSP-agnostic and used throughout an IPS. They could be created using transaction flows analysis in the absence of official documentation. This, in turn, can increase financial inclusion, particularly for those end-users who lack official documentation. However, open finance needs to be built on robust data protection policies to ensure consumer protection. Here, too, lies an opportunity to align national and regional data protection across the continent.

In Chapter 5, we zoom in on the issue of cross-border retail payment policy and regulatory harmonization, a critical exercise in the development of inclusive IPS.

⁶⁵ Static QR codes contain a fixed or static set of data that, once generated, cannot be overwritten. QR code payment systems usually start out with static QR codes, especially in emerging markets and for small merchants, as these are cheaper. Merchants can print the QR code sticker and end-users with feature phones can manually key in the number printed next to the merchant's QR code sticker. Dynamic QR codes, in contrast, can be customized, and their data changed for each scan (e.g., the transaction amount and transaction cryptogram). Such QR codes can be scanned at a point-of-sale terminal or smartphone to initiate push payments. Dynamic QR is more secure, and cryptographic techniques and time stamps can be applied for verification (World Bank 2021g).

⁶⁶ EMVCo is a global standard for payment card transactions that was jointly developed by Europay, Mastercard, and Visa. The EMV standard was created in the 1990s to provide a more secure method for processing credit and debit card payments, and it has since become the dominant standard for card-based payments worldwide. EMVCo has also developed a specification for QR code payments for mobile.



A SPOTLIGHT ON CROSS-BORDER RETAIL PAYMENT POLICY AND REGULATORY HARMONIZATION



Chapter 4 discussed four main barriers to sustainability and inclusivity that IPS face in the current market. In this chapter, AfricaNenda aims to shine a spotlight on a concrete issue in which many of these barriers come into play. Namely, cross-border payments and the regulatory context in which they operate.

Payment regulations and policies are meant to safeguard financial system stability and integrity and provide clarity to the market. As noted throughout this report so far, regulation and regulators play a key role in IPS formation, operation, and governance, forming the foundation on which payment systems can thrive. Regulations can also inadvertently introduce friction and misalignment, however if the countries into or out of which cross-border payments pass operate under different regulations. Should this friction cause end-users to avoid leveraging digital channels for cross-border payments, it can have a negative impact on trade and remittances, and by extension on the scale potential of regional IPS.

This chapter delves into actions that may break down cross-border regulatory barriers and enable remittances (P2P transfers), MSME trade payments (B2B), and cross-border merchant payments (P2B). These are the core of cross-border retail payments. The chapter outlines the current state of cross-border payments, the challenges that exist with them, and the opportunities and approaches to regulatory harmonization that could increase digital retail payments. Exemplars from African and international regions and their respective regulatory bodies are also included.

5.1 Why is regulatory harmonization important?

There are several current issues in cross-border retail payments that are impeding progress. For IPS to help address these issues, stakeholders must understand the regulatory obstacles that directly affect IPS participants (i.e., payment service providers) today and take steps

to harmonize them. Regulatory harmonization is a key policy tool governments and regulators can deploy to empower providers to serve more markets on the continent, which is central to the G20 roadmap for enhancing cross-border payments (FSB 2022).

5.1.1 Cross-border retail payment challenges

Wholesale payments run on well-developed payments rails, including international wire transfers. That's not true of retail cross-border payments in most African corridors. As a result, retail cross-border payments are expensive, inaccessible to many users, and are largely informal. We explore each of those issues in greater detail below:



Formal remittances corridors remain expensive

SSA is the most expensive region in the world for sending remittances, which are personal transfers by migrants living abroad; they have an average cost of 7.8% (World Bank 2022a). Remittances are a direct lifeline for many households on the continent. In addition to supporting families and communities, these flows are a way for many people in the diaspora to maintain community connections while contributing to development back home.

For some countries, formal remittances account for a large proportion of GDP—for example, in 2021, remittances to The Gambia and South Sudan were equivalent to 28% and 25% of GDP, respectively (World Bank 2021f). These P2P transfers support day-to-day household expenses, education, health care, investment, real estate, insurance, and life events in households and communities across the continent (Gupta and Pallito 2009; Hassan and others 2017). Expensive intra-Africa remittances are particularly damaging to household finances, as more migrants stay

within Africa than leave for other parts of the world: as of 2020, 21 million Africans immigrants were living on the continent, while fewer than 20 million were living abroad (IOM 2022).



Retail B2B and P2B payment options across borders remain inaccessible even though regional trade is on the rise

Few cross-border payment systems enable B2B and P2B payment options. Cash is still the preferred channel. For example, 80% and 75% of cross-border traders sampled in the COMESA region use cash when purchasing and selling goods, respectively (AfricaNenda 2022a). Roughly 80% of retail cross-border traders operating between Eswatini, Mozambique, South Africa, and Zimbabwe pay their suppliers in cash (FinMark Trust 2021c).

Regional trade links nonetheless are steadily gaining strength. In 2016, intraregional trade in SSA represented 20% of total exports versus 4% in the 1990s (IMF 2018b). Intra-regional trade is expected to continue to increase, aided by the Africa Continental Free Trade Area (AfCTA) agreement. Digital trade is poised to play a pivotal role in achieving the AfCFTA's goals, as it is one of the catalysts to increase intra-African trade from its present level of 18% to an estimated 50% by 2030 (United Nations 2020). IIPS will play a key role in providing the necessary digital rails for intra-Africa digital trade enablement.



Most migrants and businesses opt for informal methods for sending money inside of Africa

MSMEs and migrants often opt to send money informally to meet their cross-border payment needs. Informal channels include social networks (i.e., friends or family), the use of public transport providers to carry money, or hawala systems (GSMA 2018a).⁶⁷ Informal remittance

payments are difficult to accurately account for given a lack of data and monitoring. Between South Africa and other SADC countries, 70% of cross-border remittances are conducted through informal channels. Likewise, 81% of remittances in and out of the Democratic Republic of Congo are estimated to be informal (FinMark Trust 2018). Informal cross-border payments can be less secure for payers and payees, can circumvent tax regimes, and can contribute to money laundering or terrorist financing.

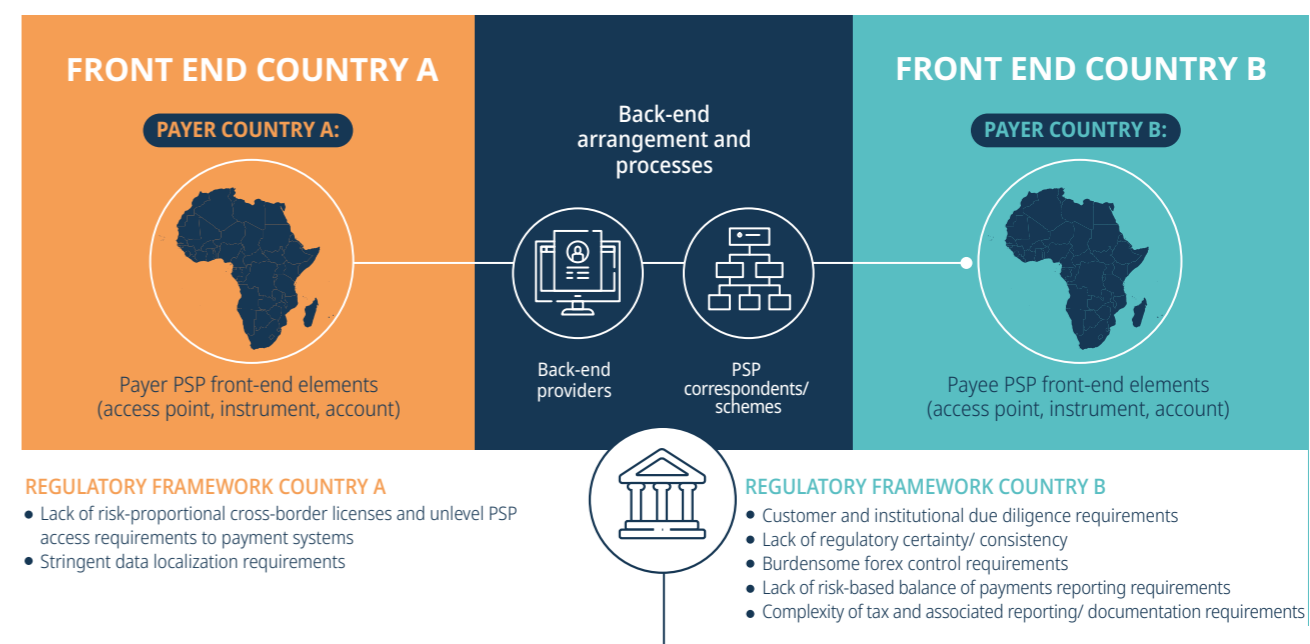
5.1.2 Regulatory barriers to cross-border financial flows

Fit-for-purpose regulation has significant potential to lower the barriers of high cost, inaccessibility, and informality. Stakeholder interviews highlighted the significance of legal and regulatory regimes and requirements among provider operational costs. Compliance costs include licensing requirements, customer and institutional due diligence, and foreign exchange restrictions.

The complexity of cross-border payments is not limited to the jurisdictions involved in sending and receiving

funds. Various channels and entities are involved, such as currency instruments, exchanges, correspondents, payment processors/operators/platforms, and settlement agents. Players operating in multiple jurisdictions must abide by all the requirements promoted by each country, creating uncertainty about which laws, regulations, and practices apply or take precedence, especially when laws between jurisdictions contradict one another. Regulatory barriers occur throughout the cross-border retail payments value chain (Figure 5.1).

FIGURE 5.1 | Regulatory barriers along the cross-border retail payments value chain



Sources: World Bank 2022e; Cenfri 2018a

⁶⁷ Hawala is an informal way of transferring money, without physical movement, through a network of dealers known as hawaladars. Hawala's distinctiveness lies in the trust-based relationship between hawaladars, often based on family village, or ethnic connections (Corporate Finance Institute 2022).

Disparities in regulations and processes across jurisdictions can lead to increased costs, reduced market access, and/or slowed transaction speeds for providers (Table 5.1).

TABLE 5.1 | Barriers to cross-border retail payments for PSPs

Regulatory barriers for PSPs	Impact on PSP		
	Increases cost	Reduces market access	Slows speed of transaction
a. Lack of risk-proportional cross-border licenses and level playing field in payment system access	High	Medium	Low
b. Conflicting or misaligned CDD requirements	High	Medium	Low
c. Burdensome foreign exchange control requirements	High	Medium	Low
d. Stringent data localization requirements (cloud data storage prohibited)	Medium	Medium	High
e. Lack of simplified and proportionate balance of payments reporting requirements	High	Medium	Low
f. Differing tax regimes and associated reporting/documentation requirements	Medium	Medium	Low
g. Lack of regulatory certainty/consistency	High	Medium	Low

Sources: Cenfri 2018; Stakeholder interviews 2023



The regulatory barriers summarized in Table 5.1 create the following challenges:

Lack of risk-proportional cross-border licenses and level playing field in payment system access

The licenses given to PSPs, regardless of whether they are deposit-taking banks, or non-deposit-taking fintechs, are often not tiered according to the risk the institution poses to the financial system. A lack of proportional licensing results in onerous requirements for institutions involved in cross-border payments. While stringent prudential requirements are appropriate for large banks and deposit mobilization institutions that have multiple revenue streams and high complexity, PSPs with simpler

products and no involvement in customer deposits do not pose the same risk to the financial system and thus should not be subject to the same requirements.

A blanket approach to licensing can cement the dominance of banking institutions in the cross-border payments space and limit competition because non-bank PSPs cannot afford to bear the prohibitive costs of compliance. Supervisors often cite a lack of resources and skills on their part as the reason for blanket requirements, but using a restrictive licensing approach discounts the importance of competition and risk-based supervision.⁶⁸ Domestic regulators in different countries also have varying approaches and standards around requirements for PSP access to payment systems (World Bank 2021a). This results in an uneven playing field for non-bank and bank PSPs.



Misaligned customer due diligence (CDD) requirements

Different countries on the continent use varied approaches to customer due diligence (CDD) and institutional due diligence. In African markets, the know your customer (KYC) regulations and guidelines are challenging to navigate from one country to another and do not yet comprehensively follow the Financial Action Task Force (FATF)'s recommended risk-based approach. Electronic KYC (eKYC) guidelines are even less aligned. In SSA and North Africa, only 55% and 50% of sampled countries, respectively, had provisions for eKYC in regulation (CCAF 2021, CCAF 2022). Within the countries that do have provisions, there are different guidelines on what to comply with, how much compliance is necessary, and what constitutes effective risk mitigation.⁶⁹ As a result, PSPs default to collecting an array of documentation to avoid fines or reduce the risk of losing correspondent banking relationships. Proof of address, source of income, import and trade licenses for B2B transactions, and business licenses for MSMEs, among others, are exclusionary requirements for many prospective customers.

Not only do cumbersome CDD requirements lead to higher operational costs and limit access to end-users, but in the absence of a risk-based approach, PSPs are effectively focusing on compliance rather than on monitoring money-laundering or terrorist-financing risk. Whereas compliance risk refers to risk of failing to comply with regulations and legislation (with non-compliance leading to fines or other disciplinary measures), money laundering, terrorist financing, and proliferation financing risk relates to the extent to which a product, client, institution, or sector can be exploited for illicit activities.⁷⁰

Many countries are on the FATF grey list because they do not effectively measure and understand AML/CFT/CPF risks at a country level. Grey listing

can lead to the termination of correspondent banking relationships and has other, economy-wide consequences due to a decrease in foreign capital. This can exacerbate operational issues for PSPs. Ten out of the 23 countries under increased monitoring on the 2023 grey list are in Africa: Burkina Faso (since 2021), the Democratic Republic of Congo (2022), Mali (2021), Mozambique (2022), Nigeria (2023), Senegal (2021), South Africa (2023), South Sudan (2021), Tanzania (2022), and Uganda (2020). Most of these countries substantially rely on remittances (FATF-GAFI 2023a).



Burdensome foreign exchange control requirements

Foreign exchange control requirements are disproportionately onerous for some PSPs. The enforcement of foreign exchange controls, especially for non-deposit-taking institutions, means cross-border payments need prior review by regulators or government authorization before execution, depending on factors such as the destination country or the send amount. For instance, money in WAEMU cannot be sent outside the region without going through a local bank and providing supporting documentation (Cenfri 2018b). Many transactions must be conducted through bank branches and/or authorized foreign exchange dealers. Some jurisdictions have adopted tight foreign exchange rate management regimes, which can have expensive consequences for formal cross-border PSPs. For example, Nigeria's tight exchange rate controls, sparked by a plunge in oil prices and foreign exchange revenue, led to large parallel foreign exchange markets and significant impacts on the formal cross-border payment industry (World Bank 2017a).

⁶⁸ In the Intergovernmental Authority on Development region, the regulatory framework for non-bank PSPs imposes similar obligations as they do for bank institutions—this is the case for Djibouti and Uganda (UNCDF 2022a). The example highlights the case where domestic regulatory regimes do not have a distinguished licensing system for non-bank and bank PSPs respectively.

⁶⁹ In the SADC region, the requirements around timing and verification of a customer's identity differ across countries—e.g., in Angola, AML laws permit PSPs to complete the verification of a customer's identity as soon as reasonable after the establishment of the relationship, whereas Botswana, the Democratic Republic of Congo, and Lesotho do not allow for this approach (FinMark Trust, 2014).

⁷⁰ While non-compliance can lead to fines or other disciplinary measures, money laundering or terrorist financing risk can lead to serious threats to the financial system and end-users. These two risks are different and should be understood separately. An institution can have low compliance risk because it follows all the regulatory requirements (onboarded users have proof of address documents and identity documents) yet their AML/CFT/CPF risk can be high if rules-based risk management approach makes it easy for criminals to circumvent the system.



Stringent data localization requirements and prohibited cloud data storage

Stringent data localization requirements affect PSPs' ability to operate in different jurisdictions. In addition to higher costs due to duplicative data servers, a poorly installed local data server can introduce data security risks for a jurisdiction compared to cloud computing or shared data centers, which often have more rigorous risk containment capabilities (Yayboke and others 2021; Kugler 2021). Cloud storage instead of physical data storage in servers within a country's borders can still ensure data privacy and sovereignty for customers and nations, respectively. For example, South African PSPs must comply with a stringent set of requirements to use offshoring and cloud computing services (South African Reserve Bank 2020).



Lack of simplified and proportionate balance of payments reporting requirements

The balance of payments (BoP) is a vital source of information for a country—it specifies information on

important economic indicators, including remittances, to allow for comparison across countries (UNCDF 2022c). The process of submitting BoP reports to central banks can be burdensome for payment providers, however, due to the lack of standardization of remittance codes associated with transactions. Therefore, manual consolidation of different remittance codes is needed for the different supervisors, including reason for transfer.

An overly detailed BoP list can lead to data inaccuracies, as the reasons for sending a transfer can be overwhelming and not mutually exclusive. As a result, some PSPs choose default/blanket codes, such as “family support,” that are imprecise or incorrect and thus distort BoP data accuracy (IMF 2022a). In addition, the reporting requirements vary across jurisdictions, which makes process automation challenging. Some partner institutions require detailed BoP declarations, and some receiving remittance cash-out payments will not approve a transaction until the BoP is reported and formal trade documents (e.g., bills of lading, invoices) are provided. This disproportionately affects smaller PSPs who do not have the capacity or funds to streamline the process through automation. Requirements, such as for invoices that are tied to BoP declarations, can discourage end-users from conducting formal transactions.



Differing tax regimes and associated reporting/documentation requirements

Cross-border PSPs must abide by the varied tax systems of multiple jurisdictions, including submission of numerous documents, all of which raises the cost of providing cross-border payments services.⁷¹ As an additional barrier, tax authorities in different jurisdictions are increasingly seeking to pre-emptively tax trans-national digital transactions and proceeds, including remittance receipts for family support, which are considered taxable income for recipients. In some countries, cross-border transactions to a mobile money wallet result in additional tax costs to the recipient. These taxes reinforce the appeal of cash, as they do not apply to over-the-counter cross-border transactions. For example, in Uganda, a 1% levy imposed on all mobile money withdrawal transactions, including remittances, in 2018 was quickly cut to 0.5% following public pushback and a 24% drop in transaction values (UNCDF 2021a).

The 1.75% e-levy imposed on all electronic transactions, including remittances, in Ghana was reduced to 1.5% and then 1% in January 2023 (Ghana Revenue Authority 2023). Cameroon introduced a 0.2% mobile money tax in 2022 while Zimbabweans have paid since 2018 the highest money transfer tax (2%) in Africa.⁷²

The US Foreign Account Tax Compliance Act requires foreign financial institutions to report all accounts owned by US citizens and other covered individuals (i.e., green card holders, permanent residents) directly to the United States Internal Revenue Service (IRS). The PSPs must register with the IRS, irrespective of whether they receive payments directly from US sources. Subject to certain limits and circumstances, PSPs may be required to report KYC/CDD, private customer data, detailed balances, and transaction information (SARS 2023). These taxes and their associated compliance requirements can severely undermine PSPs' ability to reach scale, as remittance senders and receivers alike are driven to the informal market to avoid transaction-based taxes. (World Bank 2017b).

⁷¹ The East African Business Council highlighted how the harmonization of EAC domestic taxes are key issues for PSPs (East African Business Council 2021).

⁷² The Intermediate Money Transfer Tax is a direct tax chargeable on whenever a financial institution mediates the transfer of money except through check. It includes US Dollar nostro accounts as well as the transfer of money from mobile money transfer agents to recipients and thereby will be incurred by all cross-border IPS that terminate in a bank account or mobile money wallet (KPMG 2022).



Lack of regulatory certainty/consistency

The absence of clear and consistent regulations and guidance leads to varying interpretations by PSPs, banks, and correspondents, causing confusion about compliance requirements and standards. This can happen when regulators pass new regulation without providing corresponding guidance on how to handle the changes. In Ghana, for example, the AML Act of 2020 was aligned with global standards, but the regulatory guidance is based on a previous defunct law. In South Africa, an obsolete AML/CFT law and regulation has become conflated with foreign exchange regulation in practice by the regulator and supervised institutions alike. In Nigeria, frequent regulatory changes cause immense operational challenges.

Waiting times for licenses, especially for non-bank PSPs, can be prohibitive in many countries: up to seven years, according to stakeholders (Stakeholder interviews 2023). Thus, even when systems are ready to be implemented, licensing issues can get in the way.

A governance mismatch can develop furthermore when regulation cannot keep up with innovation. This happens, for example, when services do not neatly fit within the existing regulatory framework. The involvement of multiple regulators (e.g., the payments and telecommunications regulator) in licensing can further delay onboarding, lead to operational delays, drive up costs, and restrict significant portions of the cross-border payments market (Stakeholder interviews 2023).

In addition to regulatory issues that are the focus of this chapter, operational barriers, highlighted in Box 5.1, place further constraints on the potential of cross-border payments to scale.

BOX 5.1 | Operational barriers for cross-border payments include inconsistent messaging standards, stringent requirements set by correspondent banks, expensive liquidity management, and costly and opaque foreign exchange pricing



Inconsistent messaging standards—PSPs can incur significant costs when integrating and translating messages across entities and countries with disparate standards, such as translating from ISO 20022 to ISO 8385 or proprietary standards (BIS 2022b). Upgrading to ISO 20022 is complex and costly. Differing mandated messaging standard frameworks between jurisdictions can complicate interoperability, particularly between countries with nascent financial sectors and those with significant investment in legacy infrastructure, found to varying degrees across EAC and SADC. Countries with significant fintech programs—including Kenya, Mauritius, Nigeria, and South Africa—must contend with gaps between innovative, proprietary messaging and interoperable, cross-border, ISO-based messaging. Format validation is performed at distinct stages down the chain between senders and recipients. Even one missing colon could cause the transfer to fail. The complexities between different standards require integrating layers that add new potential points of failure and can be both operationally challenging and costly.



Stringent requirements from correspondent banks—Correspondent banks bridge funds between cross-border and domestic payments. However, they are increasingly difficult to access, especially for African PSPs. Since the global financial crisis in 2008, more global banks have selectively withdrawn from correspondent banking. Reasons include changes in the regulatory and enforcement landscape, economic and trade sanctions, AML/CFT/CPF concerns, and increasing compliance costs (IMF 2017). The scarcity of correspondent bank relationships has led the banks to leverage their market power by unilaterally dictating the terms of relationships with PSPs and enforcing stringent requirements in terms of reporting, capital, and processes. For instance, a correspondent bank may require that transactions be settled in the US dollar; this adds a layer of extra-territorial US regulatory requirements, such as monitoring of trades and accounts for compliance with US Foreign Corrupt Practices Act and Office of Foreign Assets Controls, regardless of the country of origin and receipt. This increases a PSP's operational costs amid a reduction in the availability of foreign exchange arrangements.



Expensive liquidity management—Liquidity management imposes disproportionate costs on PSPs due to partnership costs and challenges with cash flow guarantees. Furthermore, there is competition for liquidity between domestic payment systems and cross-border systems. The liquidity costs arise because of the number of correspondent accounts requiring pre-funding to facilitate instant payments. This results in unproductive liquidity, which is often the largest asset on the balance sheet of a new PSP (Stakeholder interviews 2023). This unproductive use of capital makes PSPs engaged in cross border retail payments less competitive compared to other PSPs. In addition, the preference for cash by many end-users makes managing liquidity costly for PSPs. An effective cash float system that allows agents and other access points to manage liquidity effectively relies on partnerships with cash-heavy businesses or a concentration of access points closer to bank ATMs or branches.



Costly and opaque foreign exchange pricing—Currency exchange rates are a significant contributor to high remittance prices. Cross-border retail payments, especially remittances, are a major source of hard currencies for African economies. There is limited demand, and thus trade, between illiquid African currencies, partly due to the fixed exchange rates and foreign exchange controls that negatively impact the demand (BIS 2019). The actual foreign exchange spread is often much higher than the wholesale rate (official rate) given the lack of a foreign exchange market where currencies can be traded at competitive rates. The result is a dual exchange of currencies that are converted into and then out of hard currencies such as the US dollar. Partner institutions, who take on-the-spot currency risk, inflate the spread to improve average profitability, especially where foreign exchange is at the core of their business model. Foreign exchange pricing practices also lack transparency, which prevents the partner as well as the end-user from understanding the mark-ups on the foreign exchange spread.



5.2 Which regulation should be harmonized?

Regulatory harmonization could generate significant gains for the entire cross-border payment value chain in Africa. Aligning pertinent laws and reducing regulatory grey areas through harmonization (see Box 5.2) would benefit all participants in the payments ecosystem by promoting competition, reducing costs, and increasing transaction speed. Creating compatible PSP licensing regimes and reporting requirements would enhance the value proposition for both smaller, innovative PSPs and established PSPs to operate across borders.⁷³ Greater competition among

PSPs can result in cheaper, faster, and more accessible cross-border payment options for end-users.

Harmonization of several key pieces of regulation and legislation will benefit cross-border payments. Figure 5.2 outlines the key regulatory and legislative frameworks that are core to the barriers for PSPs. As each country has a different legal structure, the focus areas in Figure 5.2 can fall under different regulations or legislation.⁷⁴

BOX 5.2 | Definition of harmonization

Regulatory harmonization is defined as the alignment of disparate regulatory processes and services or mutual recognition of policies and regulatory frameworks and standards (adapted from UNCDF 2022).

Harmonization is based on the three principles: cooperation, trust, and co-recognition. Cooperation ensures regulators work together to promote the development of good practices or use of a common denominator in payment regulations and policies (OECD 2020). With trust, regulators believe their peers will act consistently with their expectations. Regulators reach a state of co-recognition when the respective jurisdictions acknowledge one another's regulatory regimes, and align domestic regulation, guidance, processes, licensing, and reporting requirements based on their mutual undertakings and consistent with their common goals.

⁷³ For example, 67% of cross-border bank PSPs in Eastern Africa cited that their presence in different jurisdictions has allowed them to gain the scale necessary to introduce financial products that would not have been feasible in a single country (World Bank 2011).

⁷⁴ For example, in the Intergovernmental Authority on Development region, Djibouti has no stand-alone consumer protection legislation. Instead, Law No. 28/AN/08/6ème relates to protection, repression, and fraud. In addition, different aspects of consumer protection are found in other laws depending on the subject matter. In contrast, there are specific financial consumer protection guidelines in Uganda and South Sudan (UNCDF 2022a).



FIGURE 5.2 Areas of regulation to harmonize



Central banks are key players in cross-border payment harmonization initiatives, as they hold the power to drive regional coordination through regulatory reforms. PSP licensing and supervision, monetary policy (which affects the foreign exchange regime), and payment system data standards and format typically reside in their mandates, and they also commonly have some degree of control over KYC/CDD and AML/CFT/CPF frameworks, and financial consumer protection regulations (UNCDF 2021b). Other relevant domestic government entities include ministries of trade and industry and information and communications technology/digital technologies. Dedicated agencies or specific laws govern data privacy, data sharing, data protection, as well as trade laws.

As shown in Figure 5.2, there are eight key areas of regulation that would benefit from harmonization across jurisdictions to improve access to and usage of cross-border retail payments. **These regulatory areas fall into three categories—access to market, ease of conducting payments, and PSP operations—as follows:**

Access to markets



PSP licensing and supervision regimes—

These could encourage risk-proportionate licenses that can be met with substantially similar requirements to serve lower-income end-users. This includes alignment in license requirements for PSPs to engage in the transfer of cross-border payments, and a prudential and supervisory risk-based approach adopted for varying entity types. Across Union du Maghreb Arabe (UMA) countries, for example, divergent approaches to the regulation of e-money across the region (CCAF 2021b), have resulted in stringent requirements for smaller, non-bank payment providers. Harmonization would lead to increased innovation in cross-border payments products as more PSPs would be able to offer cross-border payments services and not be restricted by onerous licensing requirements.



Foreign exchange regimes—Harmonization across regimes could simplify the reporting process for PSPs and give them access to foreign exchange at competitive rates. Complex regimes with inefficient or manual upfront processes, including asking for release of payments by authorities, can negate any time advantage of IPS over fast and robust informal offerings, and operational costs spiral with each additional layer of compliance and third-party due diligence imposed by different parties in the value chain (Stakeholder interview, 2023). These regimes can also dictate the type of provider that is allowed to deal in foreign currency, thereby leading to distorted markets where foreign exchange rates are overly expensive for value chain partners.

In addition, over the longer-term, authorities must scale down the use of hard currencies like the US dollar for cross-border settlements, lower the cost and administrative burden that comes with correspondent banking due diligence, and reduce additional and burdensome exchange margins on PSPs.⁷⁵ The administrative, investigative, and reporting burden that US and EU revenue authorities place upon PSPs, even those with no US or EU citizens among their customer base, is onerous and costly. Finally, monetary policy needs to address the current system of floating exchange rates at every correspondent bank per currency pairing for PSPs, which leads to mounting expenses.



Foreign trade laws—These define how negotiated trade positions apply to existing laws and regulations. Trade agreements and associated foreign trade law could create a single standard for the mutual acceptance of e-money for cross-border application. Harmonization of high-level payments frameworks, acceptance principles and

standards within regional and continental trade agreements or multilateral treaties could help simplify transaction BoP codes, due diligence, and documentary requirements that PSPs abide by to facilitate cross-border payments more effectively.

Ease of conducting payments



AML/CFT/CPF laws—Implementing evidence-based and risk-proportionate approaches can reduce the compliance burden on lower-income end-users and the PSPs that serve them. A risk-based approach, aligned with regional risks, will increase regional risk management effectiveness, addressing the onerous AML/CFT/CPF cross-border compliance requirements that exist today. Harmonization would lead to fit-for-purpose AML/CFT/CPF requirements regardless of jurisdiction or corridor, retaining enhanced due diligence for higher-risk products and/or end-users, while reducing overcompliance for lower-risk constituents.



Aligned KYC/CDD frameworks, especially around eKYC—

For end-users and institutions, this could limit the burden of gathering and confirming identity documents during onboarding and re-certification processes. For instance, COMESA Business Council (CBC), in their model policy framework on digital retail payments, recognized that across member states, proportionate risk-based approaches for KYC/CDD were incoherent or completely absent (Comesa Business Council 2021). Different frameworks must align requirements related to documentation and proof of identity used for KYC, permissions for the use of customer data via eKYC, ongoing monitoring required for CDD, and institutional due diligence standards between PSPs. PSPs are more willing to interoperate when CDD processes can be trusted across institutions and the KYC document burden decreases. Harmonization would lead to appropriate KYC requirements for end-users and risk-based CDD processes for PSPs, in line with national or regional risk assessments.

⁷⁵ When it comes to the tradability of currencies, central banks often have rules that prevent people from taking notes from other countries and holding foreign currency accounts. This directly affects how monetary policy is carried out. Central banks need to manage their foreign reserves well, especially when it comes to buying important things like fuel. This is why they often require dollars from neighboring countries.



PSP operations



Common or compatible payment system standards—Standardization around messaging and security, to name two examples, are important elements to harmonize across borders so PSPs do not have to engage in the costly exercise of adapting to different standards in various jurisdictions. Harmonization would lead to reduced operational costs for PSPs due to simpler integration across payment systems and value-chain partners in cross-border payments. SWIFT is still relevant almost 50 years since its inception due to a shared messaging standard and secure communication protocol aligned with its members' needs, as well as a continuous drive for modernization and relevance. EMV operates along similar lines. An African standard for payments can be the foundation for more effective cross-border payments.



Consumer protection laws—By harmonizing them, regulators can simplify reporting and operational requirements for PSPs at the regional level and ensure customer disputes are handled appropriately. Complaint and dispute resolution processes, as well as disclosure and transparency, should be prioritized for alignment. Harmonization would give end users and PSPs assurance that transactions have equal protection regardless of origin.



Data-related regulations—Aligning provisions related to data localization requirements and the use of data required for cross-border payments can reduce operational costs and complexities for PSPs. Existing regulations create complicated and burdensome compliance requirements, especially where domestic server deployments are required. For example, all licensed banks in Rwanda are required to maintain their primary data within the country's borders. Similarly,

Ugandan e-money issuers must keep primary data centers for payment systems within Uganda's borders (Kugler 2021).

In harmonizing regional or continent-wide standards, clear provisions can be made to ensure that cloud-based data storage protects the principles of national data sovereignty and personal data rights. Security risks can be thoroughly assessed and mitigated without applying overly stringent local data storage requirements. Harmonization would lead to common approaches to modern data storage solutions that can enable innovative business models in cross-border payments without forcing PSPs to build redundant infrastructure.

The African Union, regional economic communities (RECs), as well as monetary zones such as WAMZ, and monetary unions such as CEMAC and WAEMU, together with their respective partners, have been working to harmonize payment-related laws and regulations, with the aim of creating a more seamless and efficient payment environment within their respective regions. Box 5.3 provides an overview of the ten combined RECs, monetary unions, and zones. These regional institutions are central to the harmonization of cross-border retail payment regulation and policy. Table G.1 in [Annex G](#) lists the various associated executive bodies. The regional bodies have mandates to foster cooperation and collaboration, including in cross-border payments.⁷⁶ They regularly convene with central bank representatives, setting regional policy goals that the central banks then execute domestically. Table G.2 in [Annex G](#) shows where research has noted divergence in the regulatory areas mentioned throughout this chapter, while Table G.3 lists the various initiatives that are ongoing.

BOX 5.3 | Regional economic communities in Africa

There are seven regional economic communities (RECs), one REC and monetary union, one monetary union, and one monetary zone in Africa that are referred to for the purposes of this study:



RECs:

- **UMA** was established in 1989 with Algeria, Libya, Mauritania, Morocco, and Tunisia as its members.
- The fifteen member states of **ECOWAS** are Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo. The ECOWAS Treaty was established in 1975.
- **SADC** was formed in 1992 and includes Angola, Botswana, Comoros, the Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia, and Zimbabwe.
- The **EAC** is an intergovernmental organization composed of seven countries in the Great Lakes region: Burundi, the Democratic Republic of Congo, Kenya, Rwanda, South Sudan, Tanzania, and Uganda. It was founded in 1967 and revived in 2000.
- **COMESA** is a regional economic community formed in 1994 with Comoros, Djibouti, Egypt, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Somalia, Sudan, Tunisia, Zambia, Zimbabwe.
- **IGAD**, established in 1996, comprises eight Eastern Africa countries—Djibouti, Ethiopia, Kenya, Somalia, South Sudan, Sudan, and Uganda (Eritrea is currently inactive).
- The member states of **Economic Community of Central African States (ECCAS)** are Angola, Burundi, Cameroon, Central African Republic, Chad, Congo, Democratic Republic of the Congo, Equatorial Guinea, Gabon, Rwanda, and São Tomé and Príncipe. ECCAS was formed in 1983.



Monetary zones and unions:

- REC and monetary union: **CEMAC** is an organization of states established by Cameroon, Central African Republic, Chad, Republic of Congo, Equatorial Guinea, and Gabon established in 1994. CEMAC formed a monetary union with the Central Africa CFA franc as the common currency in 1999.
- Monetary union: Established in 1994, **WAEMU** is an organization of eight mainly francophone West African states, including Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau (non-francophone), Mali, Senegal, and Togo. WAEMU member states share the West African CFA franc as a common currency.
- Monetary zone (no shared currency): Formed in 2000, the **WAMZ** is a group of six countries within ECOWAS—The Gambia, Ghana, Guinea, Nigeria, and Sierra Leone—who founded the organization together in 2000, and Liberia who joined in 2010.

⁷⁶ The SADC Payment System Oversight Committee (PSOC), for instance, was established to provide cooperation and coordination among central banks with regards to a cross-border payment strategy (Committee of Central Bank Governors, 2021). Likewise, ECOWAS was created with the main objective of promoting cooperation and integration to create an economic monetary union, which implies alignment in financial sector-related regulations and policies (Zoma & Wendpanga, 2022).

Initiatives are mostly run by regional bodies with assistance from external organizations. The established regional bodies often lead with financial and technical assistance by development partners such as the African Development Bank (AfDB), the United Nations Capital Development Fund (UNCDF), and the World Bank. RECs are important forums to identify themes for domestic decision-makers who can initiate the domestic regulatory

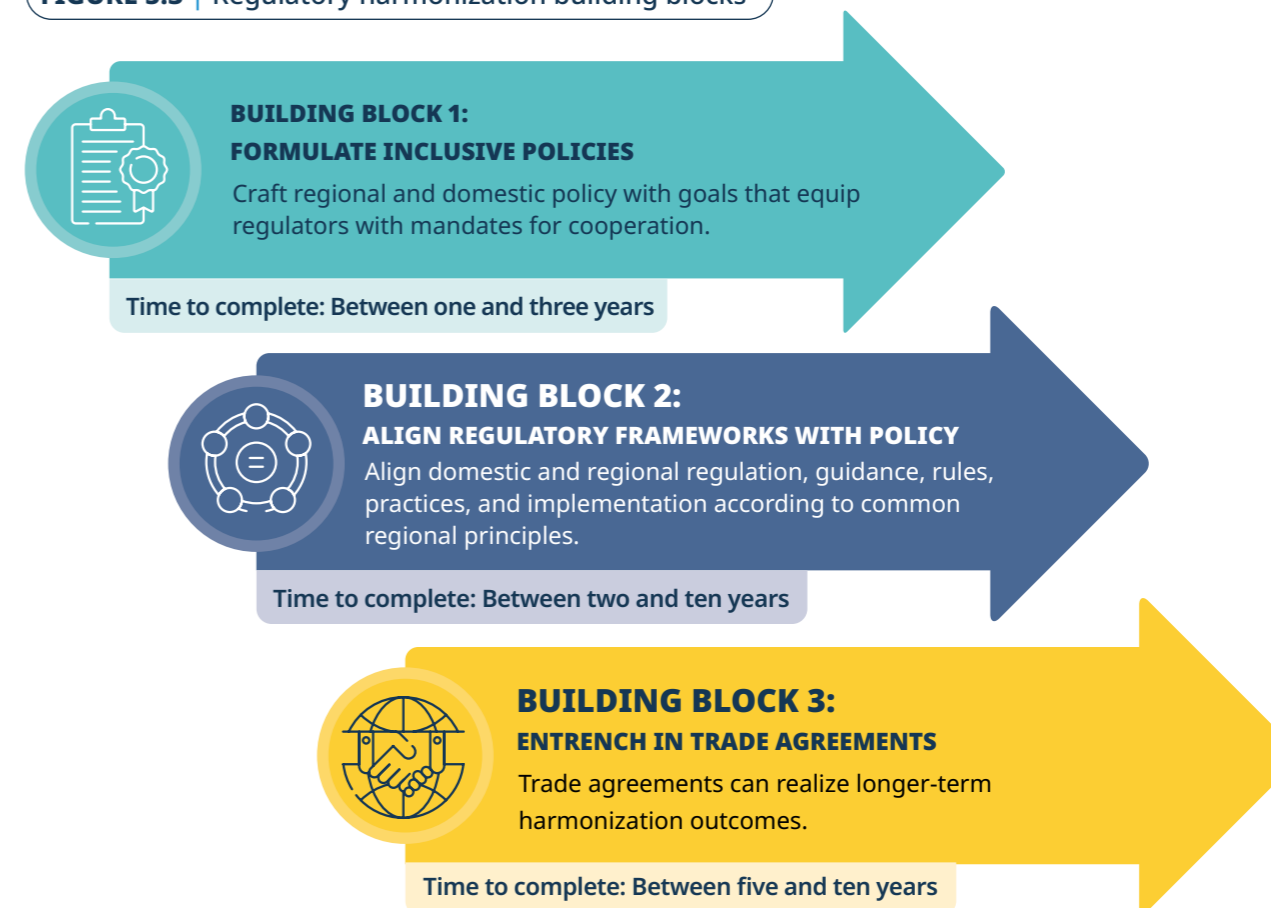
changes required. External development organizations have proven instrumental in the process as well, however, bringing in expertise and neutrality where political agendas diverge. The respective domestic/regional central bank(s) are well-positioned as change agents and advisors to central government in cases where legislative reform or amendments are necessary for aligning laws across the region.

5.3 | How to harmonize regulation?

Global policymakers and regulators can contribute to the efforts undertaken by African central banks and executive bodies to drive harmonization. However, the sequencing and balance of domestic regulatory changes and regional initiatives need to be carefully considered.

Incorrect sequencing can result in ineffective or inaccessible harmonization. Diagnostics assessing the regional regulatory payment landscape and existing gaps can guide domestic regulators on where to direct their efforts.

FIGURE 5.3 | Regulatory harmonization building blocks



Three overlapping and iterative phases of harmonization are typically required for payment-related laws and regulations, as seen in Figure 5.3.



Building block 1, policy formulation—This revolves around the development of policy at both the regional and domestic levels. Policy at the regional level provides the roadmap via the development of joint objectives and principles. The formalization of these policies and frameworks can take between one and five years depending on the consultation processes.



Building block 2, alignment of the regulatory framework—This requires the adaptation of regional objectives into the existing domestic policy environment and legislative frameworks. It also includes the actual change of regulatory frameworks. This process can be iterative, as domestic realities influence the regional policy set out under building block 1. The regulatory and legal reforms that are foundational to regional agreements can take between two and ten years, depending on the complexity of the subject and clarity of regulator mandate.



Building block 3, entrenchment in trade agreements—This involves the reform of regional agreements with a strong payment link, e.g., trade agreements, and the implementation of corresponding domestic regulation and law. This embeds the objectives supported by regulatory and policy reforms into other sectors that impact cross-border payments. Trade agreements can take between years and decades to fully implement, depending on the number of jurisdictions and granularity of agreement.

5.3.1 Building block 1: Policy formulation at the regional and domestic levels

A well-defined and clear regional policy is necessary to establish goals for regulators across jurisdictions to cooperate and coordinate in the cross-border payment space.



Regional research and landscaping activities can identify harmonization gaps and priorities, helping policymakers understand the local context and direct their efforts.

This research is typically led by external research organizations, such as AfricaNenda, Alliance for Financial Inclusion (AFI), the World Bank, or the United Nations Capital Development Fund (UNCDF), to name a few, to provide a neutral perspective.

AFI research on cross-border retail payments and remittances in the Eastern Europe and Central Asia (EECA) region provides an overview of the cross-border retail payment context,

current projects, and key issues/gaps in the area requiring regional/domestic policymaker attention (AFI 2021).⁷⁷ Based on the gaps identified in the report, AFI supported regulators and policymakers from member states to develop a regional framework on eKYC and electronic identity. The framework provides guiding principles and best practices for EECA countries to leverage (AFI 2022).



Establishing a regional blueprint/roadmap with a financial integration endpoint provides clarity for regulators from different jurisdictions.

Several regions have developed comprehensive regional blueprints for financial integration. The examples below show how countries can develop regulatory approaches to financial integration. Buy-in and involvement from all member countries at the outset is an important precursor to regional blueprints.

⁷⁷ The EECA region is made up of 22 countries, namely Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Georgia, Kazakhstan, Kosovo, Kyrgyzstan, Latvia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.



The Association of Southeast Asian Nations (ASEAN) adopted a strategic action plan, the “ASEAN Economic Community Blueprint 2025,” with the goal of achieving region-wide integration of trade, investment, and payments.⁷⁸ Each sector involved in the ASEAN integration efforts prepared a Strategic Action Plan (SAP) to guide its efforts. The comprehensive SAP was approved by the ASEAN finance ministers and central bank governors in 2016.⁷⁹ ASEAN countries have since undertaken bilateral and multilateral initiatives to link their domestic real-time gross settlement systems and adopt a standardized messaging format (i.e., ISO 20022). Singapore and Thailand connected their fast payment systems in April 2021. According to a March 2022 article published by the information resource centralbanking.com, the connected system had processed 200,000 cross-border transactions, valued at \$44 million (Central Banking 2022).



Regulatory regional working groups or forums can establish a common purpose and address specific constraints, coordinating the

development of payment system standards and elevating topics of mutual interest.

Forums allow regulators to discuss oversight approaches for domestic and cross-border PSPs, promote peer learning among regulators, and accelerate the development of common approaches to supervision.

- The West African Monetary Institute (WAMI) established a College of Supervisors (CoS) for banking supervisors and non-banking institutions in 2010 to enhance supervisory cooperation and harmonization of processes. The institutions meet centrally to foster cooperation and to develop regional frameworks. The CoS provides a forum for information sharing and capacity building. WAMI has developed roadmaps for the implementation of risk-based supervision and Basel II banking regulations. It has also harmonized its microfinance framework and established prudential regulatory committees (West African Monetary Agency 2021).
- Based on the ASEAN Economic Community Blueprint 2025’s goal for financial integration, ASEAN established the Working Committee on Payment and Settlement Systems and the e-Payments Coalition, a public-private partnership initiative (World Economic Forum 2020). Several cooperation agreements have been signed as a result, including an agreement between the monetary authorities of Singapore and Hong Kong that facilitates referrals of innovative businesses between the two jurisdictions, information sharing, and exchange of expertise for the purposes of financial innovation (Dunn and Scanlon 2017).
- The Committee of Central Bank Governors (CCBG) is a group of central bank governors in SADC.⁸⁰

⁷⁸ ASEAN consists of ten countries, including Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

⁷⁹ The financial sector integration vision for 2025 encompasses three strategic objectives—namely financial integration, financial inclusion, and financial stability—and three crosscutting areas—capital account liberalization, payment and settlement systems, and capacity building. The blueprint includes the development of guidelines to establish harmonized regulatory regimes and has led to the establishment of the ASEAN Payment Connectivity Initiative (2019) and the ASEAN Financial Inclusion Framework (2018).

⁸⁰ The CCBG serves as a platform for central bank governors to collaborate and coordinate their policies and activities related to monetary and financial issues. Functions include promoting regional cooperation, providing a platform to exchange information, developing policies and strategies, facilitating capacity-building and technical assistance, and representing the interests of the SADC region in international forums (Committee of Central Bank Governors n.d.).

The group played a key role in bringing respective central banks together to achieve mutual recognition for the licensing of PSPs that want to participate in TCIB.



Model laws developed at the regional level can function as guides for respective countries to evaluate domestic regulatory frameworks.

Model laws on a particular topic are based on best practices and typically first drafted by a regional committee, which then solicits feedback from global experts, such as the International Monetary Fund. Laws are presented to central bank representatives to receive approval and then forwarded to the respective central bank governors when finalized. The model acts can only function with clear mandates to central banks and other regulators around driving the principles of cooperation, co-recognition, and trust with regulators from different jurisdictions.

- The SADC region has a set of model laws that describe the convergence state for regulators. The

SADC Central Bank Model Law (2009) and Protocol on Finance and Investment (2016) set the basis for regional cooperation among central banks and harmonization of legal and operational frameworks. These overarching regional frameworks have resulted in the convergence of domestic laws. The Bank of Tanzania adopted a new Banking and Financial Institutions Act in 2018, which incorporated provisions of the SADC Model Bank Law; the South Africa Reserve Bank has adopted elements of the model bank law as well (Mfunwa and Lubinda 2018).

- Similarly, the West African Monetary Institute (WAMI) in WAMZ, has introduced a model banking act for bank PSPs and financial holding companies. The different countries are in the process of reviewing the model law and conducting assessments on domestic gaps.
- The EAC has a model policy on electronic transactions and intends to create a uniform enabling framework for the region (East African Communications Organization 2017).

5.3.2 Building block 2: Alignment of regulatory frameworks

The frameworks and policy goals developed under building block 1 serve as a guide to implement regulatory changes at the domestic level. Across regions, several learnings have emerged, such as:



Proportional regulatory requirements around domestic licensing set consistent standards for cross-border PSPs.

While several regulatory areas are important to tackle domestically, the main operational barrier for cross-border payments, according to literature and stakeholder interviews, is the lack of proportionality in PSP licenses. Simply put, when new, innovative entrants such as non-deposit-taking fintechs are regulated according to the same standards as deposit-taking banks or other structurally important organizations, it discourages them from participating in the market. Proportionate licensing frameworks, in contrast, encourage entry by alternative players, fostering innovation and making it more

cost-effective for providers to serve formerly excluded and lower-income consumers. Risk-proportional licensing reduces cost by lowering the compliance burden for PSPs, and thus reducing cross-border transaction charges for end-users. There is some precedence for this.

- Licensing frameworks adopted by South Africa often become a de facto standard for central banks from other jurisdictions in SADC. The South Africa Reserve Bank grants licenses to authorized dealers in foreign exchange with limited authority (ADLAs) based on tiers associated with types of payment activities. The ADLA license, implemented in 2014, allows non-banks to offer cross-border payment services, encouraging remittances, based on tiered capital requirements. After the introduction of this regime in 2014, competition intensified, and prices fell. The services of ADLAs are aimed at low-value remittances and are more competitively priced for low-value transactions (IFAD 2022). Other countries in the Common Monetary Area (CMA), Eswatini,

Lesotho, and Namibia, and surrounding non-CMA countries, such as Zimbabwe, have adopted a similar framework (FinMark Trust 2021b). From 2016 to 2018, formal remittances sent from South Africa to Malawi increased by more than 170%. Most of this increase was because more ADLA license holders provided services (FinMark Trust 2021b).

- The Bank of Ghana supervises two PSPs with a “standard license” and four with a “medium license” based on different capital requirements (Bank of Ghana 2023). The central bank endorses a tiered-licensing approach, which classifies PSP licenses according to the activity PSPs engage in. The standard license allows PSPs to connect to enhanced-level PSPs to offer mobile payment apps. Medium-licensed PSPs connect to enhanced PSPs to provide payment aggregation, biller/merchant aggregation, point-of-service deployment, a mobile payment app, and printing of non-cash payment instrument services (Bank of Ghana n.d.).
- Regulators in the Philippines and Malaysia streamlined the licensing processes for non-bank payment service providers through the adoption of risk-proportionate regulatory requirements. They did this by licensing only those remittance service providers with a clear value proposition for end-users. Smaller players unable to comply with the streamlined rules were encouraged to become agent networks instead. The Philippines introduced a remittance platform provider licensing category that only requires registration and basic reporting. The cost of sending remittances via the Malaysia-Philippines corridor has dropped to the United Nations target of 3%, aided by simplifying compliance for non-bank providers (CGAP, 2019c).

- Passporting for cross-border payments provides a mechanism for reduced compliance costs. With mutual recognition, regulators accept the regulatory practices of another jurisdiction. The parties accept each other’s payment regulations as being equally protective and risk appropriate. Mutual recognition can be achieved through bilateral arrangements between two regulators or via multilateral arrangements with three or more countries. This process goes more smoothly when domestic regulators converge around broadly defined international principles, such as the Basel core principles.

Within the European Union (EU), PSPs licensed in one member state can obtain a “passport license” to conduct business in another member state. This is in compliance with the revised Payment Service Directive (PSD2), based on the principle of mutual recognition and harmonized prudential measures (European Banking Authority n.d.). Within the supranational structure of the European Central Bank’s Single Supervisory Mechanism and according to PSD2, supervision and regulatory requirements imposed on less risky institutions are less onerous than larger ones (European Central Bank 2019). The implementation of a single passport approach under the PSD2 laws has resulted in lower charges for end-users across the EU: cross-border person-to-person fees have decreased by approximately 5% for bank customers and 2.5% for non-bank customers (BIS 2022c).



Regional practices/frameworks can help move toward local-to-local currency exchange and settlements.

As established in the preceding sections, foreign exchange management is among the largest contributors to costs associated with cross-border payments. Exchanging local currencies directly with each other, instead of relying on major currencies like the US dollar, euro, or pound, can eliminate expensive intermediaries and potentially shorten transfer times, enabling the use of almost instantaneous remittances and trade payments.

- Regional frameworks have been established in the ASEAN region to facilitate local-to-local currency settlement. The Local Currency Settlement Framework (LCSF), established in 2016 between Indonesia, Malaysia, and Thailand, promotes the wider use of local currencies to facilitate trade and investment in these countries. The initiative includes a set of bilateral agreements among central banks to use their own currencies for cross-border settlements and mutual trade through commercial banks appointed as cross-currency dealers, also known as payment-versus-payment. The framework allows bilateral transactions to be done in local currencies to reduce overreliance on the US dollar (Muhammad 2023; Ito, Hiro, Kawai, and Masahiro 2021). The LCSF cooperation has expanded to include China and Japan (through memoranda of understanding). Although trade in the region is still dominated by the US dollar, total trade transactions through the LCSF using the Thai baht and Malaysian ringgit increased from 1.4% in 2018 to 4.1% in 2020 (Phoebe 2022). In addition, the Thailand-Indonesia remittance corridor has seen remittance cost reduction of 7% since 2016 (World Bank 2022a).



Training can help regulators adapt and implement regulations in line with regional agreements.

Capacity-building assistance for policymakers and regulators can equip officials to meet harmonization goals. This includes benchmark analysis, regulatory drafting assistance, regulatory impact assessments, and risk assessment for PSP licensing, etc. Strengthening regulatory institutions enhances trust in the region, in that regulators are more willing to recognize each other’s practices knowing they have received adequate training.

- There is a concerted effort on the continent for capacity building around the implementation of FATF standards and harmonization of AML/CFT/CPF frameworks, which help bring domestic regulators up to an adequate regional standard. ESAAMLG and GIABA work with their member countries to consolidate and combine efforts around AML/CFT/CPF regulations and laws to promote the adoption of the 40 recommendations made by FATF.⁸¹ Mutual evaluations are central to monitoring the implementation of FATF standards across member countries. After identifying the deficiencies raised by the mutual evaluations, both institutions work toward strengthening capacity to address detected gaps. For example, since becoming an ESAAMLG member in 2012, Angola went through a FATF action plan to ensure technical compliance standards were met.

81 ESAAMLG’s 16 member states are Angola, Botswana, Ethiopia, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe. Rwanda has been formally admitted as a member of the ESAAMLG but has not yet fully taken up its role as an active member of the organisation. GIABA’s 17 members are Benin, Cabo Verde, Comoros, Côte d’Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, São Tomé and Príncipe, Senegal, Sierra Leone, and Togo.



5.3.3 Building block 3: Entrenchment in trade agreements

In addition to policy objectives and regulatory alignment in payments, agreements outside of the payments sector, such as in trade, can also reinforce payments goals. Trade agreements are existentially dependent on the effectiveness of payments rails. Therefore, payments regulation and trade agreements need to be aligned to be mutually reinforcing. Formal trade agreements, especially at a continental level, can take decades to be fully implemented and therefore must include longer-term visions around reinforcing the principles rather than the specific reforms in payments.



Trade agreements can be used to promote core harmonization principles

Although the timeline for formalizing trade agreements is long, they are key tools to attain long-term harmonization in payments. Trade agreements can embed harmonization principles around co-recognition, trust, and cooperation, to provide an overarching goal for domestic regulators.

While trade agreements cannot include process-level requirements and specifics for payment reforms due to the rapid pace of technical advancement, these agreements cement high-level standards, objectives, and policies.

AfCFTA came into force in 2019; as of 2023, there are 54 signatories (African Business 2022). The goal of the AfCFTA is to foster a common market in Africa and make it easier for people to conduct business across and within the continent. The AfCFTA uses the RECs to facilitate payments and trade integration between members of that region (African Union 2018). The AfCFTA's digital trade protocol covers data governance, data flows, and electronic transactions. Although it is too soon to gauge the ultimate effects of the AfCFTA on cross-border retail payments, several benefits are evident already today. Payment service providers are rethinking their strategies and expanding to more countries to prepare to reap gains from the AfCFTA's boost in intra-regional e-commerce.

The Digital Economy Partnership Agreement (DEPA) was signed between Chile, New Zealand, and Singapore

in 2020. It is the first agreement of its kind focused exclusively on trade in the digital era. It includes an entire chapter dedicated to digital payments, with an emphasis on international standards. DEPA Article 2.7, for instance, encourages parties to work together to create a consistent regulatory framework for payments. Since its implementation in 2021, DEPA has ensured that payment service providers in respective countries have adopted internationally accepted standards, like ISO 20022 (Ministry of Trade and Industry Singapore n.d.; New Zealand Foreign Affairs and Trade 2020; World Economic Forum 2022). The DEPA addresses various regulatory barriers that hinder digital trade, such as data localization requirements and restrictions on cross-border data flows, which are applicable in Africa, too.

The roll-out of the Single Euro Payments Area (SEPA) in the EU and the payment service directives PSD1 and PSD2—which have shaped the access, security, and consumer trust that underpin the overall effectiveness of the SEPA system—can serve as an example for Africa. The EU has solid footing and a supportive forum for the development of common law among EU participants; but nonetheless, PSD1 and PSD2 took, on average, five years each to formulate and pass, and then another two years

to become embedded within national law. PSD3, currently being formulated, aims to address issues that have arisen since PSD2, including right of access, recognition of licensed providers, and the development of technology.

The SEPA example highlights the long timescale necessary, even where there is an underlying union of national states and a currency union. It also highlights the iterative nature of the directives that drive access and usage and keep the platform relevant. For instance, PSD2 required banks wishing to participate in SEPA to recognize and open accounts for licensed third-party payments providers and share data, per customer consent. PSD3 now seeks to regulate the arbitrary closing of those accounts thereafter as well as develop provisions for innovative payments providers.

The key learning is that inclusive and effective cross-border payments systems are eminently possible, but the time and effort required to put them in place are significant. Examples like SEPA provide insights on how to shorten development cycles for cross-country frameworks, which can be tailored for the African context, potentially through a payment service directive for Africa to support ongoing initiatives such as the AfCFTA.

5.4 | In summary

The key takeaways for the effective harmonization of cross-border payment regulation are:

- Cross-border remittance, trade, and merchant payments are growing on the continent, but these payment flows are hampered by high costs, inaccessibility of formal products, and entrenched behavior around well-developed informal solutions.
- PSPs providing cross-border payments face multiple regulatory regimes across licensing, CDD, data privacy, storage, and sharing, foreign exchange, and reporting, which are often varied or even contradictory. Regulators must establish comprehensive and unified approaches at a regional level to foster a secure and predictable environment for cross-border transactions.
- To overcome obstacles, regulators in one jurisdiction must be able to trust the capabilities and authority of their peers in foreign jurisdictions, and they must follow general guiding principles of co-recognition, trust, and cooperation.
- RECs, monetary zones, and monetary unions have important responsibilities in promoting cross-border payment harmonization efforts within their regions. They bring together representatives from central banks, set goals and clarify incentives for local-level implementation, and encourage cooperation and collaboration among members. Domestic central banks retain the power to change and adapt regulation in line with regional policies.

- **Three building blocks set the foundation for regional harmonization of payment regulations and policies.** These building blocks are iterative and can run in parallel:

→ **Clear policies at both the regional and domestic levels.** These are needed to promote cooperation among regulators. This can be achieved through tools like gap analyses, model laws, regional blueprints, and regional working groups.

→ **Reforms of regulatory and legal frameworks at the domestic level.** These must be conducted in line with established regional goals. Areas of reform include proportionate payment licensing regimes, CDD/KYC regulatory reforms (including eKYC), and adjustment to foreign exchange laws and other supporting regulation, among others. Capacity building can help regulators adapt domestic-level regulations and approaches. Mutual recognition can be achieved through cooperative oversight arrangements.

→ **Multi-jurisdictional tools like trade agreements underpinned by effective payments solutions.** Having these in place can provide stability over the long term, reducing complexity in cross-border payments. These tools are better suited as principles of engagement as opposed to detailed operational guidance. Harmonization through a continental payment service directive for Africa (like PSD 1 and 2 in SEPA) can complement trade agreements such as the AfCFTA.

From this spotlight on cross-border payments and the benefits of regulatory harmonization, AfricaNenda turns to examine several trends that may affect how the availability of inclusive instant payments may evolve in Africa.






FUTURE PERSPECTIVES



The preceding chapters have focused on the current state of instant payments, the usage, enablers, barriers, and opportunities. With this chapter, we pivot to look toward the future and explore trends in the market, in IPS systems, and in consumer behavior. Any one of these factors could influence how the IPS landscape in Africa evolves in the coming years. Table 6.1 summarizes the trends discussed in this chapter.

TABLE 6.1 | Market, system, and consumer trends

 <p>Market trends</p>	<ul style="list-style-type: none"> • Agents will cement their position as enablers within the digital payments value chain. • Fintechs will continue to launch innovative products and increase their networks/market share in the mobile payments market. • Regulators are revising payments and e-money laws to foster innovation and strengthen consumer protection mechanisms. • Digital ID rollouts will increasingly allow for additional proxy ID options. • Virtual assets for cross-border retail payments have the potential to divert scale from IPS.
 <p>System trends</p>	<ul style="list-style-type: none"> • Banks continue to be crucial participants of IPS. • Fintechs continue to provide front- and back-end services in partnership with established PSPs rather than becoming direct IPS participants. • Open Finance is emerging. • CBDCs are emerging as decentralized instant settlement and interoperability mechanisms, but there is more demand for building them than there is supply of the technical assistance needed to do so.
 <p>Consumer trends</p>	<ul style="list-style-type: none"> • Consumers are increasingly aware of the risks of fraud and cybercrime. • End-users are persistently price sensitive. • Consumers are steadily adopting smartphones, yet data access is increasing more slowly.

6.1 | Market trends

The following market trends will continue to affect IPS participants and the ability of the IPS to scale.



Agents will cement their position as enablers within the digital payments value chain

- Agents still present a crucial bridge between the cash and digital worlds, especially for the financially underserved and the 48% of adults in Africa who are financially excluded, meaning they do not have a formal account (World Bank 2021c). The number of mobile money agents grew to around 17 million in 2022 from 12 million in 2021, an increase of 41% (GSMA 2023a). All bank and non-bank providers are investing in their agent networks to better compete in the retail payments space.⁸²
- Agents are increasingly performing activities beyond airtime and cash-in and cash-out services. However, the business case for their expansion in more rural and more sparsely populated locations, where demand is not as high as in urban areas, remains difficult. A potential solution to this challenge is to allow tiered agents, so that differentiated services can be provided by rural- and urban-based agents, to boost the business case for rural operations and for agent network expansion in these areas.
- A larger network of agents associated with an IPS via a PSP will bring scale and utility to the system. Some countries have facilitated expansion of agent networks by mandating interoperability of mobile money agents. In many countries, Senegal and Tanzania, for example, agent exclusivity is not permitted and, as such, mobile money providers share agents. In Kenya, a directive by the Communications Authority of Kenya in 2014 mandated that the dominant provider, Safaricom, open its network of agents to competitors. In Nigeria, agents can serve multiple PSPs (BIS 2023).



Fintechs will continue to launch innovative products and increase their networks/market share in the mobile payments space

- Alternative payment methods continue to proliferate across the continent, offered by local and international fintech players and telecom companies. Six of the seven billion-dollar companies (or unicorns) in Africa are fintech companies. Five of these—Chippercash (Ghana), Flutterwave, Interswitch, and Opay (all Nigerian), and Wave (Senegal)—offer digital retail payment services, either domestically or cross border (FintechNews Africa, 2023).
- Attracting fintechs to join IPS is vital to ensure that these popular services and solutions can be integrated into these central systems, thereby promoting inclusivity. Firms with significant capital stock are moving rapidly to launch in countries with smaller populations, such as Wave is doing by expanding into The Gambia. Incumbent fintechs are also forging strategic partnerships to further expand. MFS Africa, for example, has partnered with Nigeria's largest bank, Access Bank. The fintech recently entered a partnership with Western Union as well. Accelerated adoption of technologies such as QR codes is also enabling easier consumer and merchant transactions, as well as new business models and offerings.⁸³



Regulators are revising payments and e-money laws to foster innovation

- Regulatory and legal reforms in the payments sector, including updating payments and e-money laws, are underway in several African countries. These include the WAEMU and WAMZ countries, and Uganda (Stakeholder interviews 2023). At least 38 countries in Africa have financial inclusion strategies, which prioritize reducing cash usage overall and pathways to increased digital financial services use (AFI 2022b). Envisioned regulatory reforms aimed at licensing non-bank players, expanding agent networks, and enabling the use of technology in onboarding, among others, can lower access barriers. They can

also increase the number of providers in retail payments by updating regulations on wallets, digital onboarding, electronic signatures, agent licensing, consumer and data protection, account and payment license tiering including for fintechs, and the implementation of a risk-based approach.

- While these reforms are evolving slowly, and thus will only result in material changes in the medium term, the gradual updating of the regulatory and policy environment is sending positive signals to prospective providers and investors in African markets. They also increase the opportunity for regulatory and policy harmonization for cross-border payments, which will create more opportunities for IPS scalability.

⁸² Fawry in Egypt and SANEF in Nigeria have more than 100,000 access points and are not led by telecoms.

⁸³ Smartphone apps for merchant payments are increasingly available, especially in Kenya, Nigeria, and South Africa. For offline and online payments, iPay incorporates MasterCard and Visa, as well as M-Pesa and other mobile money services. (Katana 2021). SnapScan and Zapper on the back of bank cards are two payment apps in South Africa that have been successful in gaining a large user base. Nigeria's Paga mobile wallet users are expected to reach 37.6 million in 2025, more than its competitors KongaPay, MoMoPay, Opay, and PalmPay combined (de Best 2021).



Digital ID rollout allowing for robust proxy IDs is a core enabler of retail IPS

Local governments, central banks, banking associations, and other financial stakeholders have prioritized electronic know your customer (eKYC) solutions based on biometrics. Countries such as Ghana (Ghanacard) and South Africa (Smart ID) have rolled out digital ID (Research ICT Africa 2021a, Research ICT Africa 2021b). Moreover, PSPs such as Safaricom's M-Pesa have implemented eKYC using national ID and biometric information (Digipay 2023). While concerns remain about privacy and inclusivity with these solutions, the technology is becoming more affordable. Given that IPS provide centralized platforms in payments, linking identity to these platforms can catalyze scale across the industry. If supported by simplified customer due diligence and favorable digital onboarding regulations, digital ID schemes have potential to propel users toward digital payment usage.



Virtual assets for cross-border retail payments can divert scale from IPS

- Although the influence of such innovations is difficult to predict, virtual assets, including stablecoins, are expected to have material effects on the outlook for cross-border retail payments in Africa once the proofs of concept have evolved and the regulatory positions of countries are clearer.⁸⁴
- PSPs linked to Virtual Asset Service Providers (VASPs) have demonstrated the use of a virtual asset as a momentary bridge between two local currencies to execute a local-to-local cross-border remittance in real time. An example is Centbee in South Africa.
- Most African countries have limited VASP regulatory and supervisory frameworks, and the extent of formalization varies considerably. On one end of the spectrum, there are countries that have bans on virtual assets. On the other, there are countries that are considering formal licensing. In the meantime, private cryptocurrencies are playing a role by facilitating informal cross-border payments.
- There is no sign of increased licensing for formal cryptocurrency providers. Nonetheless, the use of informal cryptocurrency is on the rise. IPS will have the potential advantage over cross-border virtual asset schemes given established networks of agents to facilitate the vital step of cash in and cash out. The trend therefore points toward IPS increasingly needing to consider whether competing with or combining crypto technology will best enable them to scale.

⁸⁴ The adoption of crypto assets is increasing in Africa, driven by high costs and inefficiencies associated with traditional financial services, high inflation, political instability in some countries, and the potential for cryptocurrencies to offer a lower-cost and more efficient way to transact.

6.2 | System trends

The following system trends are affecting the design of IPS.



Banks remain crucial participants of IPS

- Fragmentation in the banking sector presents an opportunity for IPS to enable bank participants to expand in a cooperative yet competitive way through secure, interoperable payments rails. Banks could serve lower-income customers at lower cost through IPS by offering value-added services such as interest-bearing savings accounts or higher levels of credit. In this way, they could diversify their customer base and provide value-added services to lower income customers who typically would not be able to access them through the mobile money provider or MFIs that serve them. That ability could give bank participants an edge in the IPS market.⁸⁵ Offering these services would be consistent given the new focus from some banks on historically excluded populations. This is partially a response to fintechs and mobile money operators offering mobile wallets and other products that challenge bank market share across segments in both account provision and retail payments.
- While telecom companies continue to dominate retail payments via closed-loop systems in some countries, such as Kenya and Rwanda, a supportive regulatory environment and/or a competitive mobile money ecosystem can lead to cross-domain IPS with strong bank participation.

⁸⁵ While wallets will continue to see the highest take up, key markets such as Egypt and South Africa will remain card driven. Card technology is sophisticated and secure, enabling offline solutions and value-added services to the extent that mobile solutions cannot yet, partly due to regulatory restrictions.



Fintechs provide front- and back-end services rather than become direct IPS participants

- Fintechs are not expected to become direct participants in IPS at a large scale soon, due to the requirements imposed on them by banks and by regulators. This will remain the case even in countries pursuing regulatory reforms aimed at fintech activities. Fintechs directly participate in few systems currently, including GIP (Ghana) and NFS (Zambia), though they process significant domestic and cross-border transaction volumes and values across the continent. Natswitch in Malawi allows for direct fintech participation, though none have integrated yet. The capital that a fintech must tie up in an IPS for security purposes is likely too high to make it more viable than a simpler bank partnership.
- The increasing number of cross-domain and bank IPS will eventually allow fintechs to innovate on the front end of payment products for direct participants. In addition, fintechs could enable IPS to diversify the participant pool by providing integration layers and other shared services, such as government-to-person (G2P) matching and distribution, eKYC interfaces, and proxy identifiers. The stronghold that international card networks have on providing innovative virtual solutions, coupled with SWIFT's renewed focus on instant retail payments, will open more opportunities for fintechs to provide front-end innovation in the banking sector.





Open Finance is emerging

- Data is a powerful enabler of innovation: it helps IPS and PSPs to better understand and serve participants and end-users, as well as improve how they manage their own risks and business models. In response to unequal access to data among PSPs, more countries have started to implement, or consider implementing, an open finance regime. Nigeria, for example, has issued an Open Banking regulatory framework to enhance financial inclusion and improve competition and efficiency in the financial services sector (Central Bank of Nigeria, 2021).
- Open Finance consists of sharing consumer data between PSPs and/or third-party providers with consumer consent. Whereas Open Finance encompasses all financial data, including mortgages, pensions, and insurance, in addition to banking data, Open Banking is a subset of Open Finance that relates specifically to the exchange of transactional and bank payment financial data (Cenfri 2022). Payment initiation with Open Finance has the potential to reduce PSP dominance in consumer payments, because it allows third parties to initiate transactions on an end-user's behalf from an account the consumer holds with another institution.



CBDCs are emerging as decentralized instant settlement and interoperability mechanisms, but central banks need help with them, resulting in more demand than supply for technical assistance

- Central bank-backed digital currencies (CBDCs) are consolidated instruments that can be accepted everywhere since it is sovereign currency. They are also single channel and therefore have a much-reduced risk profile from an IPS perspective. As such, CBDCs offer simplified interoperability.⁸⁶
- CBDC schemes across the continent are currently in proof-of-concept, particularly in countries with deep experience in promoting digital adoption.⁸⁷ From a central bank perspective, these proofs of concept and pilots require significant skill, investment, and effort, and are often in direct competition with ongoing non-CBDC IPS innovation projects. As a result, no country apart from Nigeria has launched a CBDC scheme; and even in Nigeria, the design is not yet finalized.
- The value proposition for direct-to-consumer CBDCs and the resulting new ecosystem is not compelling in the short term. Yet the technical assistance programs

by the International Monetary Fund and World Bank remain in high demand from African countries. As a result, they are oversubscribed. While progress in CBDC development in Africa has been slow, projects that eventually emerge will interoperate with and thereby expand the degree of interconnectedness and hence the utility of IPS systems, leveraging existing ecosystems rather than duplicating or competing with them.

- Emerging cross-domain IPS projects will benefit from CBDC mechanisms through simplified processes, lower settlement risk (for IPS that do not settle in real time), higher degrees of interoperability, and ultimately lower consumer cost and greater choice. Current testing of domestic functionality indicates there will be more offline capabilities emphasized, with a focus on synthetic CBDCs.⁸⁸ African countries are looking abroad to observe the learnings from cross-border retail CBDC pilots (Stakeholder interviews 2023).

⁸⁶ IPS participants can more efficiently clear and settle in real time with multiple PSPs without having either direct or indirect access to a traditional central bank account. PSPs would not need to change any of their distribution channels or end-user-facing services, which is a considerable shift from engineering a completely new CBDC consumer ecosystem. This configuration represents an advantage for PSPs and end-users alike.

⁸⁷ Some notable examples are the Digital Real of Brazil and the development of cross-border multi-currency decentralized settlement in the Bank for International Settlements (BIS) Innovation Hub's Project mBridge, linking the Hong Kong Monetary Authority, the Bank of Thailand, the Digital Currency Institute of the People's Bank of China, and the Central Bank of the United Arab Emirates (BIS Innovation Hub Hong Kong Centre).

⁸⁸ In synthetic CBDC models, private sector payment service providers issue liabilities matched by funds held at the central bank. See references item BIS 2018a for more details.

6.3 | Consumer trends

Consumer-level trends are vital to predict IPS potential to scale and reach the financially underserved and excluded in the coming years. Major trends include:



Consumers are more aware of the risks of fraud and cybercrime

Consumers feel vulnerable to fraud on two levels. The first is related to the individual consumer's personal digital and financial capabilities—or lack thereof. The second is the degree of systemic cybersecurity risks. The prevalence and sophistication of fraud increases as consumers increase their use of digital payments. Less digitally literate end-users are more susceptible to fraud and scams.

USSD services, as implemented today, are riskier than other channels and merit extra monitoring to detect cybercrime. One reason is that USSD is not encrypted, which allows criminals to divert payments or conduct SIM swaps by tampering with command requests and responses.

Consumers have a limited risk tolerance when it comes to payments. They will replace their digital activity with cash-based transactions if fraud and cyber risks go unmitigated by IPS and PSPs. For IPS stakeholders, this highlights the need for increased monitoring of transactions, end-user awareness-raising and education, and timely and efficient recourse mechanisms.



Consumers are persistently price sensitive

Transaction costs remain a considerable barrier to uptake and use of digital transactions for many consumers and MSMEs. As economic conditions worsen, IPS will need to bring down costs to maintain and grow use and trust. Since lower-income consumers conduct more transactions (according to our research), even a low per-transaction price aggregates to a significant sum and prevents digital conversion. Revised pricing for low value transactions could help IPS achieve scale and reinforce consumer habituation.



Smartphone adoption is increasing the IPS value proposition

The current reliance on USSD technology in many markets is a result of low smartphone penetration and continued unaffordability of smartphones. Yet smartphone ownership and use across the continent is on the rise and SSA smartphone connections are predicted to rise to 87% of mobile connections by 2030, up from 51% in 2022 (GSMA 2023b).

Some governments, such as Rwanda, are helping to facilitate that transition by subsidizing smartphone rollouts to rural areas and for vulnerable households. Several mobile money providers are lowering the costs of smartphones across West and East Africa. Most MNOs in SSA, however, continue to charge among the highest prices for mobile data globally (Cable 2022). Apps tend to be more user friendly due to the ability to embed QR codes or NFC. They are also more secure than USSD, providing momentum for IPS and customized payment products. The enhanced coverage by 3G/4G/5G services underpins the successful rollout of smartphones used for products beyond USSD.

The following chapter offers some summary observations to conclude the SIIPS 2023.

CONCLUSION



As this report has laid out, instant payment systems (IPS) in Africa have made tangible progress in the last 12 months. Three new systems have been launched since last year and payment volumes and values continue to climb steadily. More participants have signed on to integrate with IPS as the number of systems rises, and more of those systems are enabling all-to-all interoperability. Data on volumes and values of payments is becoming more widely available as more systems go live and more central banks and switch operators share their IPS data. More data means we have a greater ability to evaluate IPS progress toward inclusivity.

Yet the findings also reveal that more needs to be done to ensure that IPS are inclusive, and thus fulfill their potential as digital public infrastructure (DPI). We see opportunities for IPS to expand inclusivity by offering more use cases and channels that more fully address the needs of underserved groups; to enable cross-border trade; to enhance interoperability within markets; and to directly integrate with non-traditional providers like fintechs. For example:



Use cases and channels. Most IPS still offer a narrow set of use cases or do not yet provide access to the channels people prefer. Only by facilitating all retail use cases via an expansive set of channels and instruments, offered at minimal cost, can IPS support retail flows including personal remittances, government



A design focus on underserved groups, including women and small businesses. One way to address some of the inclusion criteria is for IPS to become more intentional in their design. This includes putting more focus on design factors related to gender and small businesses, given persistent gaps for these groups. Moreover, the trajectory of a given domestic or regional IPS is context-specific; it depends as much on digital development in the market it serves as it does on social and cultural norms. IPS stakeholders with an inclusivity objective and mandate can therefore draw valuable insights from local data and user voices to design systems that best serve their populations.

disbursements, and small business payments—all of which are necessary for IPS to reach scale and provide the foundations for DPI.



Enabling cross-border trade. Yet the requirements of an individual country are not the only considerations. IIPS play a key role in regional trade. Seamless digital cross-border payments are essential to enable and grow intra-Africa digital trade. Existing challenges in regional payments adds barriers to trade, however. These barriers are particularly severe for small businesses and individuals. Digital trade depends on interoperable cross-border retail IPS complementing real time gross settlement (RTGS), supported by enabling policy and regulation. A continental payment service directive for Africa similar to PSD1 & PSD2 in the European Union, could advance harmonization and complement trade agreements such as the AfCFTA.



Interoperability. The choice of interoperability modalities depends on market development. Whether an IPS leverages third-party or multilateral integration varies by the size of the relevant economy and its state of development in digital financial services. Trade-offs include bilaterally integrating PSPs versus investing in a third-party switch to deliver all-to-all interoperability. A switch may not capture scale if dominant providers with significant market share process a large share of the market's payments as on-us transactions. Bilateral integration can become complex and risky as the market grows. Implementors have already built enough IPS switching capacity to accommodate the sharing of infrastructure between countries and regions, if desired.



Integrating non-traditional providers by offering a compelling value proposition. Non-traditional innovators like fintechs can help drive scale for IPS, though for the most part, they are not directly accessing them, but instead connecting through a financial institution provider or other type of sponsor. Nonetheless, digital fintech players that provide domestic and cross-border digital payment services, especially via mobile phones, are gaining market share. Payment fintechs are not usually direct participants in IPS, yet they process increasingly large transaction volumes and values across some key markets, especially Kenya, Nigeria, Senegal, and South Africa. They are thus attractive prospective scale contributors to IPS.

Based on how formalized they are and how much risk their business models represent, there may be conditions under which direct participation is possible. Direct participation would be particularly advantageous for the IPS in situations where a cross-border payment fintech has capitalized on a lack of regional IPS to establish a multi-nodal network in closed-loop solutions. These systems are in direct competition for scale with the existing and planned IPS but could instead be brought in with a complementary value proposition. To incentivize usage, IPS need to create that compelling value proposition—not only for the growing fintech sector but also for the benefit of end-users. Fintechs who operate as technical service providers also provide value to open-loop IPS by providing such services as messaging integration layers.

AfricaNenda is committed to helping IPS stakeholders build DPI to serve all Africans. The annual State of Inclusive Instant Payment Systems report is one of our efforts to spread knowledge on inclusivity in finance through digital public infrastructure. We strongly believe in the promise of interoperability to drive inclusivity in digital payment systems and, together with the World Bank and the United Nations ECA, we are excited to help advance IIPS on the African continent.

Given these opportunities, there are key actions for different stakeholders to take given the current state of inclusive instant payment systems, as follows:

Polymakers can create more incentives for the design of IIPS, beginning by enabling better access to credible comparable information. For example:

- **Access** to scheme rules can enable comparative learnings and better informed and engaged PSPs, investors, and regulators.
- **Inclusive, consistent, and transparent** measurement frameworks for volume and value disclosure could improve comparability and understanding of market activity. Such frameworks should differentiate between on-us and switched transactions. They could also deliver gender disaggregated data on IPS usage to inform governance and design decisions.

IPS need to ensure their design and governance structures support inclusive outcomes. Consumer and market participant requirements need to be met to achieve sustainable inclusion:

- **Designing for scale** and market needs, including technology trends, can ensure sustainability and limit the cost impact on end-users by avoiding redundant infrastructure.
- **Involving all licensed PSPs** in the design and scheme rules of the IPS can enable all-to-all interoperability and increase the value proposition for PSPs.
- **Moving beyond the USSD channel over time**, given its limitations, can be achieved through responsible, inclusive innovation. Unintended consequences need to be managed with care, such as exclusion if USSD access is not offered in the medium term or loss of trust if offered without safeguards.
- **Developing pricing models that can compete with cash and closed-loop solutions** in order to incentivize adoption by PSPs and end-users, including small businesses.
- **Rolling-out a portfolio of scale- and value-driving use cases**, especially person-to-business (P2P), business-to-business (B2B), and government-to-person (G2P) in order to increase network touchpoints and perpetuate a cycle of digital funds.
- **Promoting effective agent channels and recourse mechanisms** through engagement with participating PSPs can help to build awareness, capability, and trust, especially for women.
- **Delivering value-added services and shared infrastructure** can improve IPS efficiency and consumer access. The use of proxy ID, digital ID, electronic know your customer (eKYC), centralized fraud, and centralized cybersecurity facilities holds particular promise.

Regulators need to consider how to regulate and supervise to support the advancement of inclusive IPS:

- **Innovation and coordination** between regulators can build inclusive national payment ecosystems. Priorities include risk-based and harmonized licensing of PSPs to drive innovation and reduce reliance on cash; network upgrades to increase digital transaction quality and trust; sustained roll-out of agent networks for access and education, particularly in rural areas; and roll-out of smartphones to increase access channels, innovation on the USSD spectrum to increase convenience and improve security.
- **Principles-based regulatory frameworks** for consumer protection and data privacy, and a move towards risk-based supervision, are required to effectively mitigate risks and protect end-users.
- **Harmonization of regulation for cross-border payments** within regions is needed to enable funds to freely move, with specific emphasis on mutual recognition of identity, licensing requirements, and regional data sharing.



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ANNEXES



A. | Methodology

This report was developed using a mixed-method research approach. The research methods include:

a. Landscaping of IPS in Africa:

To map the landscape, we leveraged various resources, including, but not limited to, data from government and private-sector sources and literature from development partners. **As reliable and consistent data is often not readily available, we particularly thank the central banks and IPS operators of the Central African Economic and Monetary Community (CEMAC), Ghana, Kenya, Madagascar, Malawi, Mozambique, Rwanda, South Africa, Zambia, and Zimbabwe for providing information to help close data gaps.** Information was provided on the following systems: eKash (Rwanda), National Financial Switch (Zambia), Kenya mobile money and PesaLink, Madagascar mobile money, GhIPSS Instant Pay and Ghana mobile money, Natswitch (Malawi), Sociedade Interbancaria De Mocambique (Mozambique), and Real-Time Clearing (South Africa).

For other data, we relied on a mix of publicly available information. Scheme rules are often not available publicly, and information online is scarce.

Using this approach, we developed a comprehensive database, which provided a typological analysis of the continent's IPS, considering various factors such as functionality, technology, governance models, and inclusivity. The data is up-to-date as of June 1, 2023.

To go deeper, we conducted 18 interviews with key stakeholders, including payment system experts, regulators, IPS providers, IPS operators, and PSPs between January and April 2023. These interviews provided valuable insights on trends, barriers, opportunities, and other pertinent information required for the analysis. [Annex B](#) provides the list of stakeholders interviewed.

b. Cross-border harmonization deep dive:

Comprehensive reviews of available resources, including literature from development partners, government publications, and publicly available sources from regional bodies, informed the cross-border retail policy and regulatory harmonization insights.

Interviews with key stakeholders, including cross-border PSPs, regulatory bodies, development organizations, and regional bodies, contributed to our understanding of barriers, work-to-date, and emerging lessons.

c. Consumer research:

Extensive qualitative and quantitative research helped to deepen our understanding of the end-user experience.

This research was completed in five countries: Cameroon, Malawi, Morocco, Rwanda, and Senegal. It covered both low-income adults and micro, small, and medium enterprises (MSMEs).

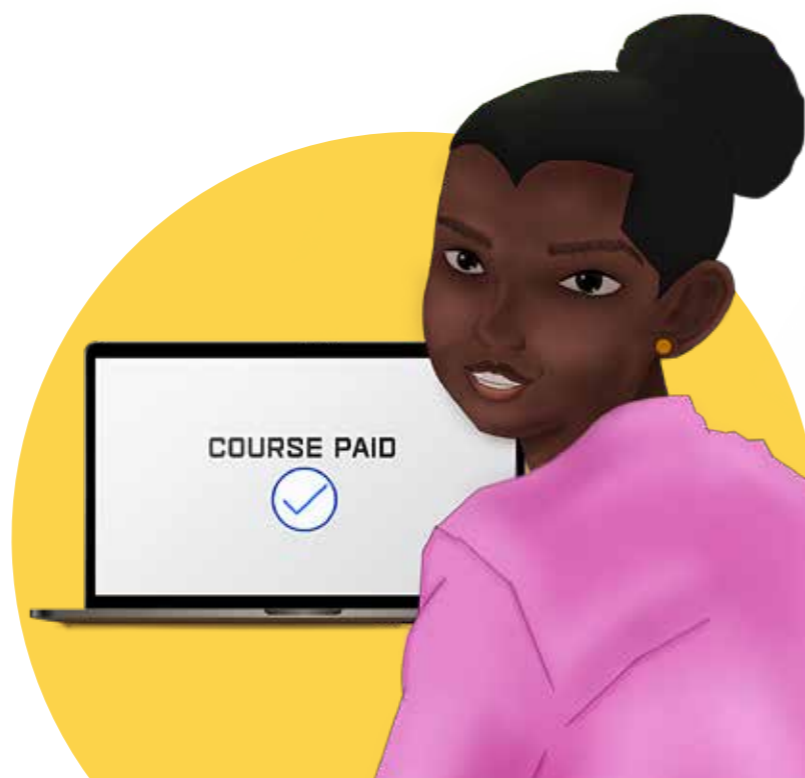
The qualitative research included 75 respondents for individual interviews, and 25 mystery shoppers. The quantitative surveys included 653 respondents across the study countries. All figures are cumulative. The sample is not nationally representative, but rather focuses on the experience of emerging consumers to identify constraints and drivers of access, adoption, and usage of digital payments in Africa and related implications to the design of IIPS. [Annex E](#) provides further insights into the methodology.

The case studies were conducted to align with the typologies adopted in the landscaping method, with emphasis on governance models and system development.

Interviews with case study participants provided a detailed understanding of the system history, data flows, operations, constraints, and expansion plans. All case studies are available in [Annex H](#).

d. Case studies:

The report showcases four IPS case studies, three domestic and one regional, to provide a closer examination of different origin stories, trajectories, and design components. These case studies include eKash (Rwanda), National Financial Switch (Zambia), Natswitch (Malawi), and GIMACPAY (CEMAC region).



B. | Consulted stakeholders

Organization	Name
Bitt	> David Bahamon
	> Imran Khan
Digital Financial	> Salvador Chang
	> Peter Kastanis
	> Paul Makin
	> Lisa Skinner
Enza	> Hany Faky
	> Hamish Houston
Eastern and Southern Africa Anti-Money Laundering Group (ESAAMLG)	> Bhushan Jomadar
	> Tom Malikebu
Financial Sector Deepening Africa	> Toulope Babajide
GIMAC	> Valentin Mbozo'o
GSMA	> Devyn Holliday
	> Nadia Jeffrie
Independent consultant	> Andrea Bises
	> Arthur Cousins
	> John Kiff
MFS Africa	> Funmi Dele-Giwa
	> Patrick Gutmann
Mukuru	> Catherine Denoon-Stevens
Natswitch Ltd	> Gertrude Kadumbo
RSwitch Ltd	> Afazad Kalisa
	> Rachel Uwamahoro
Southern Africa Development Community (SADC) Bankers	> Maxine Hlaba
Trade Economics	> Paul Baker
United Nations Capital Development Fund (UNCDF)	> Eliamringi Mandari
	> Albert Mkenda
	> Bisamaza Mukankunga
West African Monetary Institute (WAMI)	> Adama Diakite
	> Clifton Garpeh
	> Isaac Osei Mensah
	> Dauda Mohammed
	> Souleymane Tall
Zambia Electronic Clearing House Limited (ZECHL)	> Augustine Ujunwa
	> Abdurashed Zubair
	> Morgan Chishala
Zambia Electronic Clearing House Limited (ZECHL)	> Kabwita Kabwita
	> Francis Lwanga

C. | Landscaping data tables

Further data can be found at www.africanenda.org/siips2023.

TABLE C.1 | Data table

IPS description				Number of participants	Transaction data		Main actors				
IPS name	Geography	Launch year	IPS type		2022 volumes	2022 values (US\$)	Owner	Overseer	Scheme governance	Operator	Settlement agent
eKash	Rwanda	2022	Cross-domain	3	1,157,000	5,776,208	Industry	National Bank of Rwanda	RSwitch	RSwitch	National Bank of Rwanda
eNaira	Nigeria	2021	Sovereign currency	33	747,855	15,207,061	Central Bank of Nigeria	Central Bank of Nigeria	Central Bank of Nigeria	Central Bank of Nigeria	Central Bank of Nigeria
Gamswitch	The Gambia	2020	Bank	12	-	-	Central Bank of Gambia and industry	Central Bank of Gambia	Gamswitch	Gamswitch	The Central Bank of Gambia
Ghana Mobile Money Interoperability (MMI)	Ghana	2016	Mobile money	5	5,067,513,712	89,891,760,011	Bank of Ghana	Bank of Ghana	GhIPSS	GhIPSS	Bank of Ghana
GhIPSS Instant Pay (GIP)	Ghana	2015	Bank	52	76,483,008	4,921,361,258	Bank of Ghana	Bank of Ghana	GhIPSS	GhIPSS	Bank of Ghana
GIMACPAY	CEMAC	2020	Cross-domain	91	10,046,359	657,020,970	BEAC and commercial banks	BEAC	GIMAC	GIMAC	BEAC
InstaPay	Egypt	2022	Bank	27	16,000,000	2,588,728,675	Egyptian Banks Company	Central Bank of Egypt	Egyptian Banks Company	Egyptian Banks Company	Central Bank of Egypt
Kenya mobile money	Kenya	2018	Mobile money	3	9,932,247,314	96,551,482,669	None (bilateral agreements)	Central Bank of Kenya and Communications Authority Kenya	None (bilateral agreements between EMIs)	None (bilateral agreements between EMIs)	Central Bank of Kenya
Madagascar mobile money	Madagascar	2016	Mobile money	4	704,081,198	10,224,077,794	None (bilateral agreements between EMIs)	Central Bank of Madagascar	None (bilateral agreements between EMIs)	None (bilateral agreements between EMIs)	Central Bank of Madagascar
MarocPay	Morocco	2018	Cross-domain	23	-	-	Bank Al-Maghrib	Bank Al-Maghrib	The Moroccan Mobile Payment Group (GP2M)	HPS Switch	Bank Al-Maghrib
Mauritius Central Automated Switch (MauCAS)	Mauritius	2019	Cross-domain	14	-	108,336,838	Bank of Mauritius	Bank of Mauritius	Bank of Mauritius	Bank of Mauritius	Bank of Mauritius
NamPay	Namibia	2021	Bank	9	25,362,000	19,446,749	Payments Association of Namibia	Bank of Namibia	Payments Association of Namibia	Payments Association of Namibia	Central Bank of Namibia
National Financial Switch (NFS)	Zambia	2019	Cross-domain	30	61,250,000	2,088,883,903	ZECHL	Bank of Zambia	ZECHL Board of Directors	ZECHL	Bank of Zambia
Natswitch	Malawi	2015	Cross-domain	11	11,458,762	311,826,606	Bankers Association of Malawi	Reserve Bank of Malawi	Bankers Association of Malawi	Banking Payments Context	Reserve Bank of Malawi
NIBSS Instant Payment (NIP)	Nigeria	2011	Cross-domain	450	5,140,093,000	746,565,392,271	NIBSS	Central Bank of Nigeria	NIBSS Board of Directors	NIBSS	Central Bank of Nigeria
Nigeria mobile money	Nigeria	2013	Mobile money	21	714,597,976	42,014,940,067	NIBSS	Central Bank of Nigeria and Nigerian Communications Commission	NIBSS	NIBSS	Central Bank of Nigeria
Pan African Payment & Settlement System	Continent-wide	2022	Bank	36	-	-	PAPSS Governing Council	PAPSS Governing Council	PAPSS Governing Council	PAPSS Management Board	African Export-Import Bank
PayShap	South Africa	2023	Bank	4	-	-	BankservAfrica and commercial banks	South African Reserve Bank	BankservAfrica and commercial banks	BankservAfrica	South African Reserve Bank
PesaLink	Kenya	2017	Bank	35	3,850,359	3,879,324,621	Kenya Bankers Association	Central Bank of Kenya	IPSL	IPSL	Central Bank of Kenya
Real Time Clearing (RTC)	South Africa	2006	Bank	33	215,832,611	78,849,497,513	BankservAfrica	South African Reserve Bank	Payment Association of South Africa	BankservAfrica	South African Reserve Bank

IPS description				Number of participants	Transaction data		Main actors				
IPS name	Geography	Launch year	IPS type		2022 volumes	2022 values (US\$)	Owner	Overseer	Scheme governance	Operator	Settlement agent
Sociedade Interbancaria De Mocambique (SIMO)	Mozambique	2012	Cross-domain	22	60,235,921	3,477,234,108	Bank of Mozambique and industry partners	Bank of Mozambique	Not available	SIMO	Central Bank of Mozambique
Somalia National Payment System	Somalia	2021	Bank	8	213,867	386,889	Central Bank of Somalia	Central Bank of Somalia	Central Bank of Somalia	Central Bank of Somalia	Central Bank of Somalia
Système de Règlement Automatisé de Djibouti (SYRAD)	Djibouti	2020	Cross-domain	0	-	-	Central Bank of Djibouti	Central Bank of Djibouti	Central Bank of Djibouti	Central Bank of Djibouti	Central Bank of Djibouti
Meeza Digital	Egypt	2017	Cross-domain	8	-	-	Egyptian Banks Company	Central Bank of Egypt	Egyptian Banks Company	Egyptian Banks Company	Central Bank of Egypt
Taifa Moja	Tanzania	2016	Mobile money	6	4,195,899,415	60,087,968,735	None (bilateral agreements)	Bank of Tanzania	None (bilateral agreements between EMIs)	None (bilateral agreements between EMIs)	Bank of Tanzania
Tanzania Instant Payment System (TIPS)	Tanzania	2022	Cross-domain	5	-	-	Bank of Tanzania	Bank of Tanzania	Bank of Tanzania	Bank of Tanzania	Bank of Tanzania
Transactions Cleared on an Immediate Basis (TCIB)	SADC	2021	Cross-domain	26	-	-	SADC PSOC	SADC Payment System Oversight Committee	SADC Payment System Oversight Committee	BankservAfrica	South African Reserve Bank; correspondent banks
Tunisia mobile money	Tunisia	2018	Mobile money	3	-	-	None (bilateral agreements)	Central Bank of Tunisia	Central Bank of Tunisia	Mobile switch manager	Central Bank of Tunisia
Uganda mobile money	Uganda	2017	Mobile money	7	5,230,548,350	43,507,845,576	None (bilateral agreements)	Bank of Uganda	None (bilateral agreements between EMIs)	Pegasus	Central Bank of Uganda
Zimswitch Instant Payment Interchange Technology (ZIPIT)	Zimbabwe	2011	Cross-domain	27	25,938,579	828,510,618	Zimswitch	Reserve Bank of Zimbabwe	Zimswitch	Zimswitch	Reserve Bank of Zimbabwe
Virement Instantané	Morocco	2023	Bank	19	-	-	Bank Al-Maghrib	Bank Al-Maghrib	Not available	GSIMT	Bank Al-Maghrib
EthSwitch	Ethiopia	2022	Cross-domain	Not available	2,063,534	371,052,431	Not available	Not available	Not available	Not available	Not available

TABLE C.2 | IPS inclusivity level scoring

IPS	Inclusivity level	Minimum channel functionality	Minimum use case functionality	All licensed PSPs can participate (all-to-all interoperability)	Pro-poor governance	CB governance involvement	Expanded use cases	Recourse	Not-for-loss
Ghana: MMI and GIP*	Progressed	✓	✓	✓	✓	✓			✓
Natswitch (Malawi)	Progressed	✓	✓	✓	✓	✓			✓
NFS (Zambia)	Progressed	✓	✓	✓	✓	✓			✓
GIMACPAY (CEMAC)	Progressed	✓	✓	✓	✓	✓			✓
InstaPay (Egypt)	Basic	✓	✓			✓			
Meeza Digital (Egypt)	Basic	✓	✓	✓		✓			
Gamswitch (The Gambia)	Basic	✓	✓		✓	✓			
Madagascar mobile money	Basic	✓	✓		✓				
MauCAS (Mauritius)	Basic	✓	✓			✓			
MarocPay (Morocco)	Basic	✓	✓	✓					
SIMO (Mozambique)	Basic	✓	✓	✓		✓			
NamPay (Namibia)	Basic	✓	✓		✓				
eNaira (Nigeria)	Basic	✓	✓			✓			
NIP (Nigeria)	Basic	✓	✓	✓		✓	✓		
RTC (South Africa)	Basic	✓	✓		✓				
Taifa Moja (Tanzania)	Basic	✓	✓		✓				✓
TIPS (Tanzania)	Basic	✓	✓	✓		✓			
Uganda mobile money	Basic	✓	✓		✓				
ZIPIT (Zimbabwe)	Basic	✓	✓	✓				✓	
SYRAD (Djibouti)	Not ranked	✓		✓		✓			
Kenya mobile money	Not ranked	✓			✓				
PesaLink (Kenya)	Not ranked				✓				
Virement Instantané (Morocco)	Not ranked	✓				✓			
Nigeria mobile money	Not ranked		✓		✓	✓			
eKash (Rwanda)	Not ranked	✓		✓	✓	✓			
EthSwitch	Not ranked	✓		✓		✓			
PayShap (South Africa)	Not ranked	✓			✓				
Somalia National Payment System	Not ranked		✓			✓			
Tunisia mobile money	Not ranked		✓			✓			
TCIB (SADC)	Not ranked	✓		✓	✓	✓			✓
PAPSS (Continent-wide)	Not ranked		✓			✓			

*The two systems in Ghana are considered as one aggregated cross-domain system




D. Dispute resolution in instant payments

The insights in this section were developed in conjunction with the World Bank.

Only one IPS has directly integrated recourse mechanisms. Only 16 IPS had online information about recourse channels. Four systems provide a recourse channel as a “last point of call,” requiring end-users to first approach their service provider; two systems require the service provider to set up recourse channels. ZIPIT in Zimbabwe offers a recourse channel accessible to end-users without first requiring an attempt at resolution with the provider. For the remaining ten

systems, the only recourse available is through general financial sector protections. This typically involves end-users lodging a complaint with the provider, who then has a limited number of days to address the issue before it can be escalated to recourse mechanisms within the financial sector, usually involving the central bank. Box D.1 provides further insights into how IPS in Ghana, Malawi, and Nigeria have integrated provisions for recourse in their scheme rules.

BOX D.1 | Examples of consumer protection guidelines for IPS participants

Country	IPS operator	Examples of consumer protection guidelines for IPS participants
 Ghana	The Ghana Interbank Payment and Settlement Systems Limited (GhIPSS)	According to the scheme rules, participants must adhere to the recourse requirements defined in the “Consumer Recourse Mechanism Guidelines for Financial Service Providers Framework” defined by the Bank of Ghana.
 Malawi	Natswitch Ltd	Natswitch Ltd has included provisions for dispute management within their operating rules and they have also developed detailed dispute resolution rules in line with Malawi’s Consumer Protection Act (Stakeholder interviews 2023).
 Nigeria	NIBSS	Providers must, according to the scheme rules, follow CBN’s website recourse mechanisms. They must have a helpdesk to handle consumer complaints. End-users report complaints to providers who then have two weeks to resolve the issue. If unresolved, complaints can be escalated to CBN’s consumer protection office for recourse.



Use of digitized recourse platforms among financial service providers is on the rise

An emerging trend in the digital financial landscape in Africa is the use of digitized platforms, such as dispute management portals and chatbot portals, for consumers to log disputes with their provider and report issues like fraud or erroneous transactions. In a recent collaboration, the African Development Bank partnered with Proto, a leading provider of inclusive artificial intelligence (AI) customer experience solutions for multilingual contact centers in emerging markets. This initiative aims to deploy an automated consumer protection solution across national financial ecosystems in Africa. The partnership involved working closely with the supervisory authorities of Ghana, Rwanda, and Zambia. The implementation of this solution began in February 2023, starting with the Bank of Ghana, National Bank of Rwanda, the Competition and Consumer Protection Commission of Zambia, and the Bank of Zambia (Proto 2023). Through these platforms, end-users can engage with their banks, initiate the dispute management process, and if necessary, proceed with a charge-back procedure when the dispute is determined to be valid. Given that providers are mostly the first point of call for complaints from fast payments users, increasing automation is critical for ensuring transparent and speedy resolution. This also highlights the importance of a centralized complaint tracking solution that consumers can leverage to track the status of their complaints across institutions. In Nigeria, for instance, consumers can track complaints on the official Central Bank of Nigeria Consumer Complaint Management System using the reference/tracking number that was sent to them by the financial service provider where they handed in their complaint (CCMS 2020).



Consumer protection across Africa encompasses different models for dispute resolution and consumer protection

Three main models for market conduct regulation/consumer protection have been adopted so far across the African continent: the single agency model, the sectoral model, and the twin peaks model (AFI 2022c):

- The single agency model centralizes consumer protection supervision responsibilities under a single authority. One example is the Reserve Bank of Malawi, which has a dedicated consumer protection division. This approach offers the advantage of centralized complaint management and statistics.
- The sectoral model, implemented in countries like Kenya and Namibia, involves multiple financial sector authorities responsible for supervising all aspects of financial service providers within specific sectors, like banking or insurance (Stakeholder interviews 2023).
- The twin peak model, found in South Africa, assigns one authority with a financial stability mandate (in this case, the Prudential Authority established within the South African Reserve Bank) and another authority (for South Africa, the Financial Sector Conduct Authority) with a focus on financial consumer protection and market conduct.

No model yet exists for a comprehensive consumer protection authority covering financial and non-financial activities (AFI 2022c).



Financial ombudsmen and similar structures are important to meet the international principle for free and independent recourse

Independent, third-party recourse is an important part of an effective two-part consumer redress system, to meet the G20 Principle 12 requirements for “access to adequate complaints handling and redress mechanisms that are accessible, affordable, independent, fair, accountable, timely, and efficient.” The most prominent form of third-party recourse or alternative dispute resolution in financial services, globally, is a financial ombudsman/person structure (INFO Network 2018). Such a structure provides independent, impartial, and fair out-of-court alternative dispute resolution through one or more financial ombud schemes. In the absence of an independent third-party dispute resolution mechanism, complaints not resolved internally within financial institutions fall to the applicable regulator. This places an additional burden on already resource-constrained financial regulators. Depending on the applicable laws, regulators may also lack the power to make legally binding rulings or award compensation. This may, ultimately, leave consumers without effective recourse. Hence, ombud schemes enhance accessibility and affordability of dispute resolution for consumers. An ombudsperson can be established as a voluntary body set up by industry associations, as a statutory body established by law, or as a hybrid where a voluntary body is entrenched in law, with oversight by the regulatory authority.

Financial ombudsmen are on the rise in Africa, but there are still gaps in reach and effectiveness. Only three countries in Africa have ombudsmen that are affiliated

with the International Network of Financial Services Ombudsman Schemes: Botswana, Eswatini, and South Africa. Box D.2 outlines key aspects of the ombudsman structure for banking services in South Africa. Several additional countries have ombudsman-like arrangements, which in most cases take the form of either a banking or insurance ombudsman or adjudicator with a broader focus that includes the financial sector as only one part of its mandate. In SADC, for example, Angola, Mauritius, Tanzania, and Zimbabwe have established some form of independent financial ombudsman. Most other countries are exploring or developing such structures.

Establishing an ombudsman can be costly. Additionally, limited consumer awareness and capacity often restrict their reach to a small, affluent end-user segment. Establishing an ombudsman or similar third-party recourse mechanism requires careful consideration of the governance structure, funding model, and operational structure; the passing of legislation to give effect to the chosen structure (often a multi-year endeavor); and a plan for ensuring that it is accessible. Therefore, the journey to establishing broadly accessible and effective third-party recourse in Africa is ongoing.

The establishment of ombudsmen or similar structures for IPS is crucial to creating additional trust among end-users in instant payments. Ideally, IPS would provide additional recourse mechanisms in the absence of a financial sector ombudsman.

BOX D.2 | Example of the Ombudsman for Banking Services in South Africa (OBSSA)



In South Africa, banks that are members of the Banking Association of South Africa are signatories to the OBSSA, which provides a detailed process geared to effective and speedy resolution. The process deals with all payment types including both interbank FPS offerings. All member banks are required to maintain specialized dispute resolution departments through which clients are encouraged to lodge any complaints; in response, clients receive a written response and a complaint tracking number. The bank has a maximum of 20 days to respond and, failing any response or a rejected response within the 20 days, an OBSSA complaint may be lodged and tracked on the OBSSA website or through the call center. Once a formal OBSSA complaint is lodged, the bank becomes responsible for the OBSSA costs of adjudication. Particularly with lower value retail FPS matters, there is a powerful cost incentive for banks to settle complaints promptly and before they reach the OBSSA. Banks typically choose their battles focusing on matters of systemic concern or based upon organizational norms and values (OBSSA 2019).

E. | Instant payments fraud

The insights in this section were developed in conjunction with the World Bank.

Types of fraud

Most reported fraud incidents in instant payments involve end-user-facing fraud. These incidents are generally unsophisticated and focus on directly stealing money from end-users (World Bank 2022h).

Fraud types include:



Social engineering: An attempt to trick someone into revealing information (i.e., a password) that can be used to attack systems or networks (NIST 2023). Types include:



Phishing: A technique for attempting to acquire sensitive data, such as bank account numbers, through a fraudulent solicitation in email, or on a web site, in which the perpetrator masquerades as a legitimate business or reputable person (NIST 2023).



Vishing: A type of cyberattack that uses voice and telephony technologies to trick targeted individuals into revealing sensitive data to unauthorized entities (TechTarget 2023).



Smishing: A social engineering attack that uses fake mobile text messages to trick people into downloading malware, sharing sensitive information, or sending money to cybercriminals (IBM 2023).



Spoofing: Faking the sending address of a transmission to gain illegal entry into a secure system (NIST 2023); or other fraudulent activities aimed at obtaining personal account details or transferring money (Stakeholder interviews 2023). Perpetrators exploit victims' fears, insecurities, and vulnerabilities, utilizing various online tactics. While the nature of these fraudulent activities has remained consistent over time, they are frequently repackaged to deceive users repeatedly. Mobile money and mobile banking platforms, particularly in Eastern Africa, are increasingly targeted by fraudsters, with 56% of surveyed users in Kenya reporting phishing attempts through phone calls or SMS in 2021 (Innovations for Poverty Action 2021).



Mobile money agents fall victim to fraud as well. Fraud types perpetrated on agents include the agent losing float in their account due to social engineering attacks or compromised PINs (CGAP 2017).

Mobile channels in Africa are particularly susceptible to subscriber identity module (SIM) swapping and hijacking. Mobile channels often rely on SMS-based two-factor authentication, which exposes them to SIM swapping and hijacking attacks. For instance, scammers can deceive customer service agents by falsely reporting a device as lost and requesting the activation of a new SIM card using the victim's phone number. Once the criminal has activated their device with the victim's phone number, they can bypass two-factor authentication through SMS or voice calls directed to that phone. In South Africa, the South African Banking Risk Information Centre reported a 63% surge in incidents between 2020-2021, from 2,686 cases to 4,386 cases (South African Banking Risk Information Centre 2021). In 2019, the Nigeria Security and Civil Defence Corps took action against SIM swap fraud in Nigeria by arresting and prosecuting 113 internet fraudsters (Nigerian Tribune 2019).

Signalling System 7 (SS7) vulnerabilities remain and extend to 4G wireless broadband systems. The lack of robust security layers makes SS7 susceptible to hacking and collaboration with mobile network operators.⁸⁹ 4G systems seem to face similar risks despite more structured defenses. Attacks on SS7 and 4G compromise layered security in IPS and occur most frequently in Asia and Africa (GSMA 2018b). SS7 attacks occur when the log-in for a virtual workstation at an MNO is hacked externally or hired out by actors within the MNO. The fraudsters then have access to many unsecured MNOs' consumer proxy identities and connections across the world, allowing them to eavesdrop or reroute data to alternative SIMs in a number of jurisdictions. IPS are particularly vulnerable as it is exceedingly difficult to stop the flow of fraudulent proceeds across multiple accounts and ATMs. These kinds of attacks put consumers at risk of unauthorized account withdrawals. The financial service providers accuse them often of having compromised their password or personal identification number. SS7 attacks are not always distinguishable from other types of attacks and are included across other types of fraud (Stakeholder interviews 2023).

⁸⁹ SS7 is a telecommunications signalling architecture traditionally used for the set up and tear down of telephone calls. It has a robust protocol stack that uses out-of-band signalling to communicate between elements of the public switched telephone network. In recent years it has been superseded by the Diameter signalling protocol (Techopedia 2017).

Charge-back fraud is a significant concern for African IPS operators. Charge-back fraud refers to end-users disputing legitimate transactions to secure refunds or avoid payment for goods and services they have obtained. This poses a considerable challenge for merchants, eroding their trust in digital payment services. While chargeback is particularly prevalent in card systems, mobile money services are not immune. For example, the payment reversal function offered by M-Pesa in Kenya resulted in merchants experiencing losses through end-users claiming back money for already-purchased goods or services. To curb chargeback fraud, Safaricom adjusted the feature to integrate the confirmation by the individual or business that received the payment (Nation.Africa 2022).

Fraud faced by IPS participants is more prevalent in well-developed financial markets and is often facilitated by insiders. Overall, the African region is comparatively less attractive to external criminals seeking higher cost-benefit opportunities, resulting in lower incidents of attacks against IPS participants (Stakeholder interviews 2023). However, more sophisticated financial systems like those in Kenya, Nigeria, and South Africa attract a significant number of such attempts, including cyber-enabled heist attacks. These attacks involve threat actors compromising bank networks and gaining privileged access to interbank payment systems, allowing them to issue fraudulent transaction requests and acquire substantial amounts of money. An organized crime group targeting South Africa's Standard Bank in 2016 managed to withdraw over \$19 million from ATMs in Japan using forged cards (Singh 2016). Similarly, the National Bank of Kenya suffered a loss of at least KSH 29 million (\$261,000) due to an attack on their internal network (PC Tech Magazine 2018). West African financial institutions have also faced cyberattacks aimed at compromising internal networks and conducting fraudulent transactions (Threat Hunter Team Symantec 2019).

Furthermore, internal fraud attacks that are enabled by insiders within IPS participant institutions pose significant challenges and result in substantial losses. These attacks, often unreported, involve current or former employees exploiting their privileged access to steal funds. Malware and phishing techniques are commonly utilized by scammers to facilitate fraudulent activities, such as setting up malicious domains. There also have been attempts to compromise public interfaces of financial institutions, as evidenced by the visibility and monitoring maintained in IPS environments like Zambia (Stakeholder interviews 2023).



IPS fraud management

Establishing fraud management standards in African IPS requires regulatory bodies and scheme rules. IPS participants bear responsibility for analysing risk and mitigating inherent fraud risks and vulnerabilities associated with the IPS and its elements, such as access security protocols, instruments, and channels. Regulations, often echoed or specified in scheme rules, can set out specific accountabilities and liabilities and enforce standards and fraud management capabilities. For instance, the South African Reserve Bank has published a position paper on faster payments in 2022 and the Central Bank of Nigeria published a "Risk and Information Security Management Framework" for the Nigerian payment system in 2020 (Central Bank of Nigeria 2020; SARB 2022).

To address the prevalence of cyber-enabled payment fraud in IPS, the Central Bank of Kenya and Central Bank of Nigeria published guidelines on cybersecurity for payment service providers (Central Bank of Kenya 2018; Central Bank of Nigeria 2018). However, while most African countries have developed national cybersecurity strategies, few have guidelines specifically tailored to IPS participants (ITU 2023). Regulations can also aim to combat one particular type of fraud, such as by introducing stricter SIM card activation/swap regulations (further outlined in Box E.1). In the absence of coherent regulatory provisions and guidance, the scheme rules remain the safeguard, but they are often more aligned with commercial liability than consumer protection. At an organizational level, IPS scheme rules set standards for procedures, rules, and technical requirements governing payment execution. These multilateral rules may address security, processing, or technical aspects of instant payments.

The implementation of centralized fraud monitoring and detection systems in IPS is limited. While the majority of IPS operators adopt a decentralized approach to fraud monitoring, a few have implemented different centralized systems or approaches, as further described in Box E.2. Many IPS operators recognize the need for centralized systems in addition to the decentralized measures implemented by individual participants to better support monitoring and detecting fraud risks, enable regular monitoring and analysis of transactional data, and to facilitate prompt reporting of potential fraud incidents. Operators are engaging partners to better understand their needs and challenges in implementing centralized

systems (Stakeholder interviews 2023). Several countries (Egypt, Ghana, Kenya, Morocco, Nigeria, Tanzania, and South Africa) have implemented more than one IPS. This means that in these countries, a centralized platform is not only needed across one IPS but across all IPS.

For instance, in Kenya, the lack of a centralized database for suspicious transaction reports is resulting in a fragmented view of IPS fraud between the PesaLink for the banking and the mobile money IPS (Stakeholder interviews 2023).

BOX E.1 | SIM card activation guideline examples



Zambia case study: Zambia implemented SIM card activation guidelines, which introduce waiting periods with SMS notifications after a swap and require registration of new SIM card numbers for mobile banking apps to combat SIM swap fraud. Improved security measures now enforce a 4-hour waiting period after a SIM swap, during which users receive SMS notifications before regaining access to their phone. Mobile money services are suspended for up to 48 hours (Stakeholder interviews 2023). For instance, ABSA places a temporary hold on a mobile banking account associated with a phone number when a SIM swap has been detected. The hold remains in place until the account holder authenticates themselves with ABSA (ABSA n.d.).



Nigeria case study: In 2022, The Nigerian Communications Commission prescribed a standard procedure for SIM replacement to be used by communications service providers. The guidelines oversee SIM replacement under certain conditions, stipulating that SIM replacement requests can be rejected by the communication service provider on reasonable grounds so long as the commission is notified within 48 hours of the rejection. Data on rejected cases must be reported by the providers. Rejection decisions are determined by subjecting the requesting subscribers to a screening and verification process, which requires them to answer security questions pertaining to their SIM activity. SIM swaps that are conducted by a subject proxy require an affidavit and passport photo, along with a national identification number. SIM replacement for deceased subscribers requires a certified true copy of the death certificate. The SIM card being replaced will only be activated upon verifying the validity of the information provided by the subscriber, and until then, only limited service is allowed on the SIM card (Nigerian Communications Commission 2022).



BOX E.2 | Examples of ecosystem monitoring approaches adopted by IPS

Country	IPS operator	Ecosystem monitoring approach adopted by IPS
 Ghana	GhIPSS	The IPS facilitates the switching process while entrusting service providers with fraud management responsibilities. In cases of fraudulent activities, the FSP enables the tracking of illicit fund transfers between accounts and conducts investigations based on IPS participant requests and provided parameters (Stakeholder interviews 2023).
 Kenya	Integrated Payments Service Limited	The centralized system provided by IPSL incorporates velocity rules, including regulatory transaction limits and additional lower limits set by individual participants. Planned system improvements include a shift towards behavior-based monitoring leveraging advanced analytics, artificial intelligence, and machine learning (Stakeholder interviews, 2023).
 Malawi	Natswitch Ltd	System participants adopt their own fraud management tools to handle fraud incidents. For financial service providers without their own switches, a fraud monitoring tool is provided at the national switch for managing fraud (Stakeholder interviews 2023).
 Nigeria	NIBSS	The integration of the bank verification number's biometric attributes with transaction monitoring helps to prevent fraudulent proceeds from being forwarded to accomplice accounts by syndicate groups (Central Bank of Nigeria 2013).
 South Africa	BankservAfrica	BankservAfrica's Integrated Cash Management System team has implemented an automated transactions monitoring system. This system allows BankservAfrica to have a comprehensive view of financial transactions across different data sources and formats. The system enables the early detection of any irregularities or issues that may arise during the processing of high-value cash transactions (Stakeholder interviews 2023).
 Zambia	ZECHL	Every transaction processed through the switch undergoes fraud vetting. Advisory notes are sent to participants regarding potentially fraudulent transactions. Although the switch performs fraud analysis for each transaction, it does not block the transactions based on the advisory notes. Instead, it conducts screening. Currently, there are no universally adopted industry standards for actions to be taken in response to flagged transactions. It is the responsibility of the participants to determine their risk standards and take appropriate action based on the advisory notes (Stakeholder interviews 2023).
 Zimbabwe	Zimswitch Technologies Private Limited	At the switch level, trends are monitored, and any concerning patterns are flagged to the impacted institutions. In cases related to money laundering or terrorist financing, the flagged information is shared with the Financial Intelligence Unit. The authorization process belongs to issuers, who track their own indicators. As a designated non-financial institution, Zimswitch is responsible for submitting suspicious transaction reports, allowing for a system-wide view of fraudulent activities (Stakeholder interviews 2023).

IPS operators play a crucial role in supporting participants by implementing measures such as electronic know your customer (eKYC) facilities and sharing fraud insights. IPS participants can leverage eKYC practices to authenticate customers, allowing them to verify the identity of senders or recipients before initiating or receiving funds. However, aside from in Nigeria, centralized eKYC facilities on top of IPS have not been widely implemented. In countries like Kenya and Zambia, regulators and/or IPS operators hold consultative meetings with MNOs and banks to discuss fraud vulnerabilities and explore collaborative measures. In Ghana, regular engagement with partners includes education and training programs on fraud prevention, where industry experts provide insights to system participants (Stakeholder interviews 2023).

Preventing fraud requires a collaborative effort, with both IPS operators and participants taking responsibility for customer awareness initiatives. Regular engagement, education programs, training sessions, and social engagements are crucial for raising awareness and promoting fraud prevention. This collaboration is important given the prevalence of end-user-affecting fraud. While IPS participants are primarily responsible for leading these programs, collaboration can increase their effectiveness. The Bankers Association of Zambia runs an annual fraud campaign that includes activities and visits to remote areas to educate people about different fraud schemes. In Zimbabwe, engagements are conducted by the IPS operator to educate both providers and end-customers, including merchant meetings, awareness sessions at outlets, engagements with colleges and schools, and media broadcasts through radio, television, and billboards, all aimed at spreading awareness and strengthening partnerships to combat fraud.

IPS operators across Africa see a strong role for artificial intelligence (AI) and machine learning in fraud prevention, detection, and mitigation. Centralized AI systems can flag suspicious transactions in real time. Depending on

regulations in place, end-user terms of service and level of integration with payment service providers, AI systems are also able to track, trace, or suspend transactions and affected accounts within institutional processing platforms. Some systems are able to utilize structured and unstructured data, which is important for sector-wide initiatives to deal with different data sources and often poor data warehousing in Africa. AI systems are valuable in post-fraud analytics, enabling the modelling of fraud and money laundering networks or constellations of both witting and unwitting accomplices, channels, and ultimate beneficiaries.

An example of a provider leveraging AI for payment fraud prevention is the Bank of Africa, which has recently partnered with the fintech Netguardian (Cardoza 2022). IPS operators, such as Integrated Payment Services Limited in Kenya, are also planning to leverage this technology in the future to move from a threshold-based suspicious transaction detection to a behavioral-based approach (Stakeholder interviews 2023). Advancements in customer identification and authentication are also being explored by IPS participants across Africa, with voice recognition systems emerging as a notable consideration to detect distress and prevent fraud. By analyzing unique vocal patterns and characteristics, these systems aim to identify signs of distress during customer interactions, enabling timely intervention.

Some banks in the region have already implemented facial biometrics to identify and authorize customers. For instance, Access Bank in Nigeria has launched FacePay, a facial biometric payment system that enables customers to verify their identity and authorize retail transactions conveniently, without passwords or physical cards. Similarly, the Standard Bank of South Africa has partnered with iiDentifii to integrate facial recognition into its mobile app, allowing customers to securely access their online banking accounts using facial biometrics. These advancements seek to provide fast, seamless, and secure payment and banking experiences and to prevent fraud.

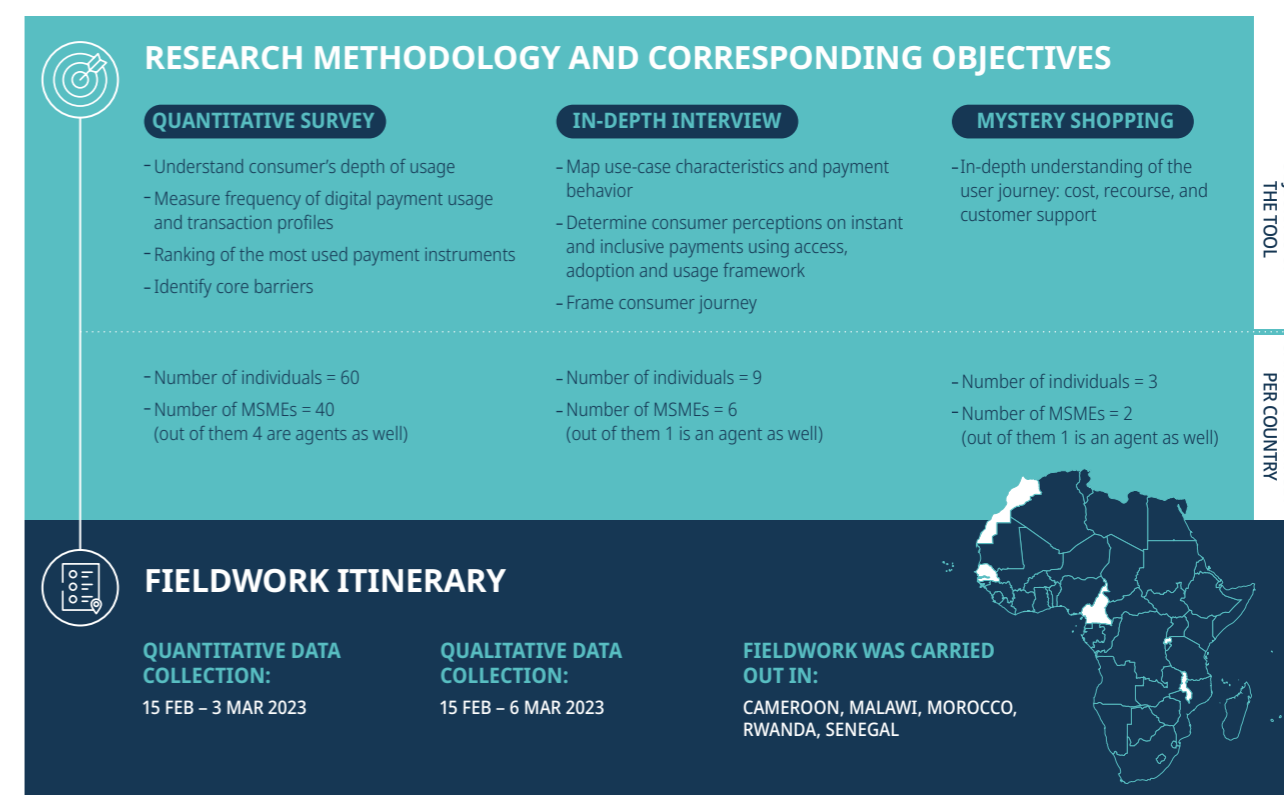
F. Customer research methodology

The primary customer research was run in parallel with the supply-side research to analyze the evolving instant and inclusive payment behavior among low-income and no-income individuals in Africa.

The primary customer research explored the use cases, desired features, unmet needs, and perceptions of consumers regarding (instant) digital payments and by sketching a profile of included versus excluded target market segments to provide an overview of the barriers and incentives relating to the adoption of instant payments in Africa.

- Geographic scope.** To sketch a continent-wide picture, the customer research was conducted in a sample of countries across the continent's five sub-regions.
- Methods used.** Researchers used a mixed-method approach that leveraged both quantitative and qualitative research, as shown in Figure F.1.

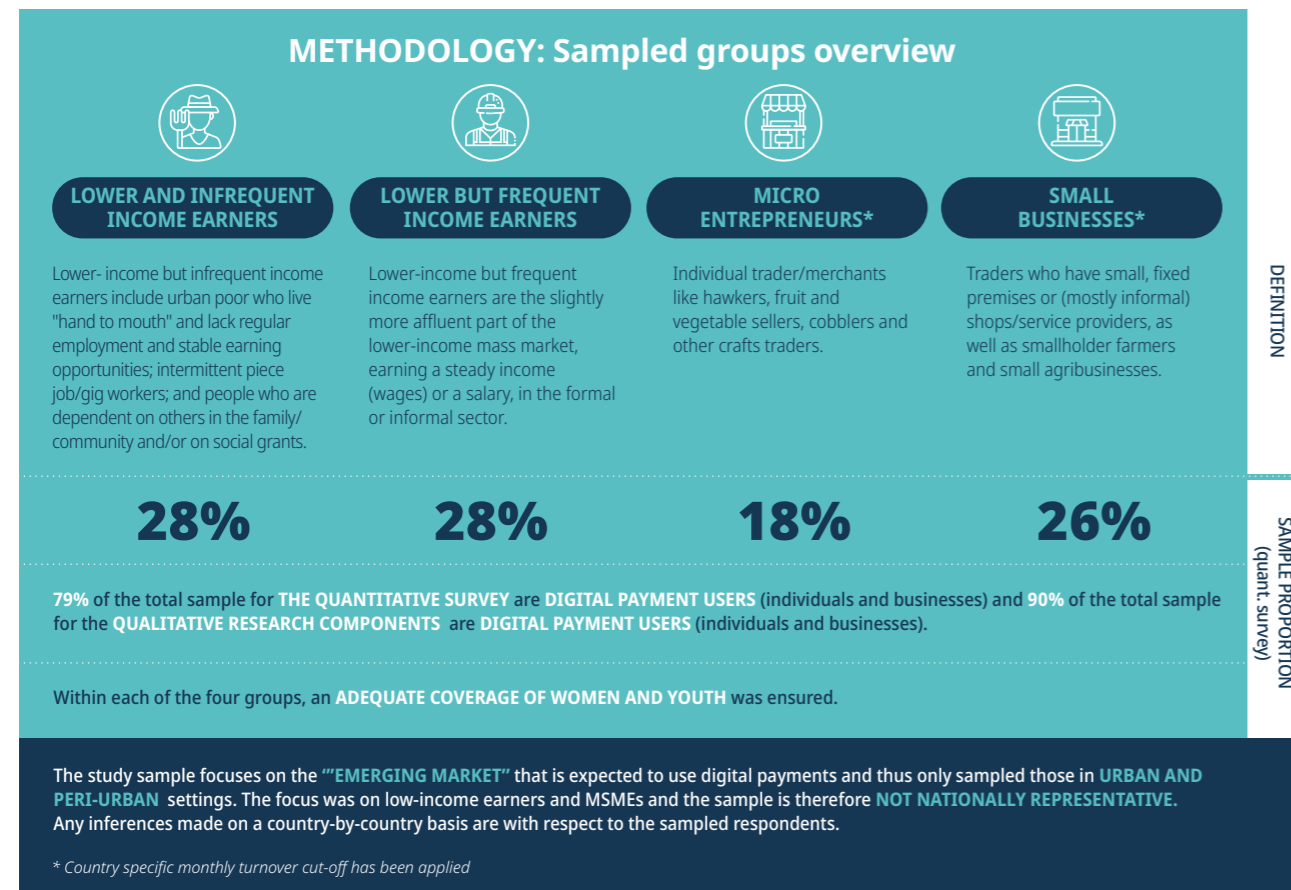
FIGURE F.1 | Breakdown of quantitative and qualitative methods





Sampling approach. Researchers sought to gain insights into the nuances of digital payment adoption across varying consumer groups, using the sampling approach outlined in Figure F.2.

FIGURE F.2 | Sampling approach across group segments



Detailed sample breakdown. The breakdown of the quantitative component and exact sampling of each method for the qualitative component across the five markets are provided in Table F.1. In total, the sample included 653 respondents across the five markets. The collection of the quantitative data took place between February 15, 2023 and March 3, 2023. For the qualitative component, the sample included 100 respondents across the IDIs and mystery shopping methods. The collection of the qualitative data took place within these five countries between February 15, 2023 and March 6, 2023.

TABLE F.1 | Detailed sampling breakdown

Country	Respondent Profile	Quantitative		IDI		Mystery shopping	
		Douala	Limbe	Douala	Limbe	Douala	Limbe
Cameroon	No/infrequent income earners	17	15	2	2	1	-
	Low frequent income earner	13	17	2	2	1	1
	Micro business	5	11	2	1	-	1
	Small business	15	9	2	2	1	-
	Total	102		15		5	
Percentage of sample that are digital payment users		81%					
Malawi	No/infrequent income earners	41		4		1	
	Low frequent income earner	36		4		2	
	Micro business	22		3		1	
	Small business	57		4		1	
	Total	156		15		5	
Percentage of sample that are digital payment users		73%					
Morocco	No/infrequent income earners	41		4		1	
	Low frequent income earner	36		4		2	
	Micro business	19		3		1	
	Small business	28		4		1	
	Total	124		15		5	
Percentage of sample that are digital payment users		77%					
Rwanda	No/infrequent income earners	29		4		1	
	Low frequent income earner	46		4		2	
	Micro business	33		3		1	
	Small business	17		4		1	
	Total	125		15		5	
Percentage of sample that are digital payment users		83%					
Senegal	No/infrequent income earners	39		4		1	
	Low frequent income earner	28		4		2	
	Micro business	29		3		1	
	Small business	44		4		1	
	Total	140		15		5	
Percentage of sample that are digital payment users		81%					

G. Cross-border regulation tables

There are distinct regional bodies dedicated to specific regulatory areas. The regional commission/secretariat often assumes responsibility for several regulatory areas, particularly around licensing, consumer protection, and data security. For financial integrity issues, there are dedicated task forces in each region—for example,

ESAAMLG in SADC and GIABA in ECOWAS. For regions with monetary unions, the common central bank takes charge over a broad range of payments-related topics—for example, WAEMU where BCEAO looks at licensing, foreign exchange controls, prudential supervision, and payment system standards.

TABLE G.1 | Regional bodies and respective focus areas

	UMA	ECOWAS	CEMAC	SADC	IGAD	EAC	COMESA	ECCAS	WAMZ	WAEMU
Financial integrity (AML/CFT/CPF)	MENA Financial Action Task Force	GIABA	Action Group against Money Laundering in Central Africa (GABAC)	Eastern and Southern Against Anti-Money Laundering Group (ESAAMLG)	Eastern and Southern Against Anti-Money Laundering Group (ESAAMLG)			GABAC	Inter-Governmental Action Group against Monetary Laundering in West Africa (GIABA)	
Data security and cyber security	MENA Financial Crime Compliance Group (MENA FCCG)	ECOWAS Commission	CEMAC Commission	SADC Secretariat	IGAD Secretariat	EAC Secretariat	COMESA Secretariat	ECCAS Commission	Information unavailable	
Licensing and authorization regime	UMA Secretariat	WAMI	BEAC	SADC Payment System Oversight Committee (PSOC)					WAMI	BCEAO
Consumer protection	MENA Financial Crime Compliance Group (MENA FCCG)	ECOWAS Regional Competition Authority (ERCA)	Commission Bancaire de l'Afrique Centrale (COBAC)	SADC Secretariat		EAC Competition Authority	COMESA Competition Commission		ERCA	WAEMU Commission
Foreign exchange controls	UMA Secretariat	West African Monetary Agency (WAMA)	BEAC	PSOC, Committee of Central Bank Governors (CCBG)		East Africa Business Council (EABC)	COMESA Secretariat		West African Monetary Agency (WAMA)	BCEAO
Prudential supervision			COBAC							
Payment system standards	Union of Maghreb Banks	Governor of Central Banks of ECOWAS	BEAC						Governor of Central Banks of ECOWAS	

Most RECs have identified harmonization as central to addressing cross-border barriers. Several RECs have conducted studies explicitly to understand the differing regulatory hurdles in their respective member countries, such as the diagnostic study done in the IGAD region on remittance payment regulations or the SADC remittance

market assessment report conducted by FinMark Trust (UNCDF 2022a; FinMark Trust 2021a). Others have not been studied as holistically—for instance, there is limited comprehensive information available on the ECCAS and CEMAC regions. Memberships in several RECs can add to the difficulty in achieving regional integration.

TABLE G.2 | Regional divergence in key regulations

		REC		REC					REC and monetary union	Monetary union	Monetary zone
		UMA	ECOWAS	SADC	IGAD	EAC	COMESA	ECCAS	CEMAC	WAEMU	WAMZ
Licensing and authorization regime	Varied approaches to e-money licensing	✓	✓	✓	✓		✓				
	Lack of standardized and transparent licensing criteria	✓	✓	✓	✓	✓					✓
	Lack of risk-appropriate capital requirements for non-lending and non-deposit taking PSP		✓		✓				✓		
	Inconsistency in agent guidelines	✓	✓	✓							
Financial integrity (AML/CFT/CPF)	Differing CDD/KYC documentation requirements and transaction limits	✓	✓	✓	✓	✓	✓				
	Divergent implementation and interpretation of FATF standards (for example, risk-based approach)		✓	✓	✓	✓	✓				✓
	Reliance on extra territorial correspondents in hard currency jurisdictions and not within the continent; inappropriate corresponding banking compliance standards				✓	✓	✓				✓
Consumer protection	Unclear mechanisms for external complaints handling and dispute resolution		✓	✓			✓				
Foreign exchange controls	Reliance on hard currency settlements introduces foreign and inappropriate compliance issues				✓						
	Variations in compliance and reporting		✓	✓							
Prudential supervision	Differences in accounting standards, regulatory reporting requirements, and minimum capital adequacy requirements		✓						✓		✓
	Incompatibility of tax regimes			✓		✓					
Data security and cybersecurity	Inconsistent data security frameworks and risk management procedures		✓				✓				
	Different approaches to flows and local data storage requirements		✓				✓				
Payment system standards	Lack of uniformity in data and messaging standards implementation		✓	✓			✓				✓

Source: Finmark Trust (2014); UNCDF (2022a); WAMI (2022); IMF (2017); COMESA Business Council (2021); UNCDF (2022b); CCAF (2021a); CCAF (CCAF, 2021b); Finmark Trust (2021a); SADC Secretariat (2021); Stakeholder interviews (2023)

✓ Regional divergence identified

RECs are working on cross-border regulatory alignment. The RECs in Africa play a crucial role in promoting regional economic integration among member countries, as well as within the larger African Economic Community. These regional economic groupings are becoming increasingly

significant, and as the volume of payment flows grows, so does the need for more integrated cross-border payment laws. Some initiatives exist as regional strategies or programs, while others have been translated into programs and/or model frameworks.

TABLE G.3 | Existing regional harmonization initiatives underway

	Institution supporting harmonization of payment regulation	Status	Cross-border payment regulation harmonization work	Year initiated
UMA	International Monetary Fund (IMF)		Financial sector reforms and prospects for financial integration	2007
	GIABA		Beneficial ownership information and asset recovery framework	2022
ECOWAS	WAMA		Harmonization of banking regulation and supervision frameworks	2021
	World Bank and ECOWAS		Identification integration program	2020
CEMAC	UNCDF and BEAC		Regulatory environment for digital financial services	2023
SADC	SADC Payment System Subcommittee, Committee of Central Bank Governors (CCBG)		Regional payments a focus in updated financial inclusion policy	2021
	ESAAMLG		FATF recommendation implementations	1999
IGAD	UNCDF and IGAD Secretariat		Harmonization of remittance policies	2022
EAC	EAC Secretariat		Harmonization of payment systems	2022
	World Bank and EAC Secretariat		Financial sector development and regionalization project	2021
COMESA	COMESA Business Council (CBC)		Digital payments policy for micro, small and medium enterprises	2021
ECCAS	UNCDF and the ECCAS Commission		Harmonization of remittance policies	2022
	UNCTAD and ECCAS Secretariat		Regional integration through the World Trade Organization (WTO) facilitation agreement	2020
WAMZ	WAMI		Harmonization of regulatory and prudential framework	2022
	West African Institute for Financial and Economic Management (WAIFEM)		Use of international payment standards and licensing regimes	2021
WAEMU	BCEAO		Alignment of payment regulatory frameworks	2022
	UNCDF and BCEAO		Remittance payments technical assistance	2023

	Institution supporting harmonization of payment regulation	Status	Cross-border payment regulation harmonization work	Year initiated
Continent	Smart Africa		Blueprint for e-payments for the facilitation of digital trade	2021
	African Union (AU)		Single digital market for Africa strategy; Digital Transformation Strategy	2020
	World Bank		Digital Economy for Africa Initiative	2019
	UN Economic Commission for Africa (UNECA)		Digital trade regulatory review	2023
	Association of African Central Banks (AACB)		African Payment Systems Integration Project	2022

● Public information (status unknown) ● Project ongoing ● Diagnostic report published ● Regional Framework Published



H. Case studies



RWANDA: eKASH

Origin story



Challenge

The payment ecosystem in Rwanda was previously characterized by low levels of interoperability for retail payment transactions. Mobile money operators (MMOs) and banks had developed bilateral relationships, enabling some limited interoperability, but retail transfers between different banks were not possible (National Bank of Rwanda 2018). The bilateral arrangements were not up to international payment system standards and ill-equipped to handle increasing digital traffic. As a result, the industry faced increased risks of failure and inefficiencies (National Bank of Rwanda 2020).



Adding value

Given that half of the adult population did not use digital payments, the National Bank of Rwanda (BNR) wanted to catalyze ongoing maturation toward digital payments and away from cash. It created the National Payment System Framework and Strategy 2018 to 2024—referred to as the ‘payment strategy’—with the goal of achieving a cashless economy by promoting digital payments.

The BNR and the payments industry are intent on promoting all-to-all interoperability of retail payments to

enhance efficiency and improve the customer experience (National Bank of Rwanda 2020). The payment strategy functions as the cornerstone of Rwanda’s payment system modernization and the implementation of an interoperable retail payment system.

The initial realization of that vision came to fruition with the launch of eKash in 2022. A cooperation between the national switch, RSwitch, the BNR, and the private sector, eKash aims to empower a cashless and inclusive economy through a safe, robust, interoperable, and efficient payment system that will benefit various stakeholders. RSwitch expects the IPS will enhance the end-user experience of digital payments and decrease cash usage. The system will also enable the government to better monitor transaction flows and financial inclusion goals.



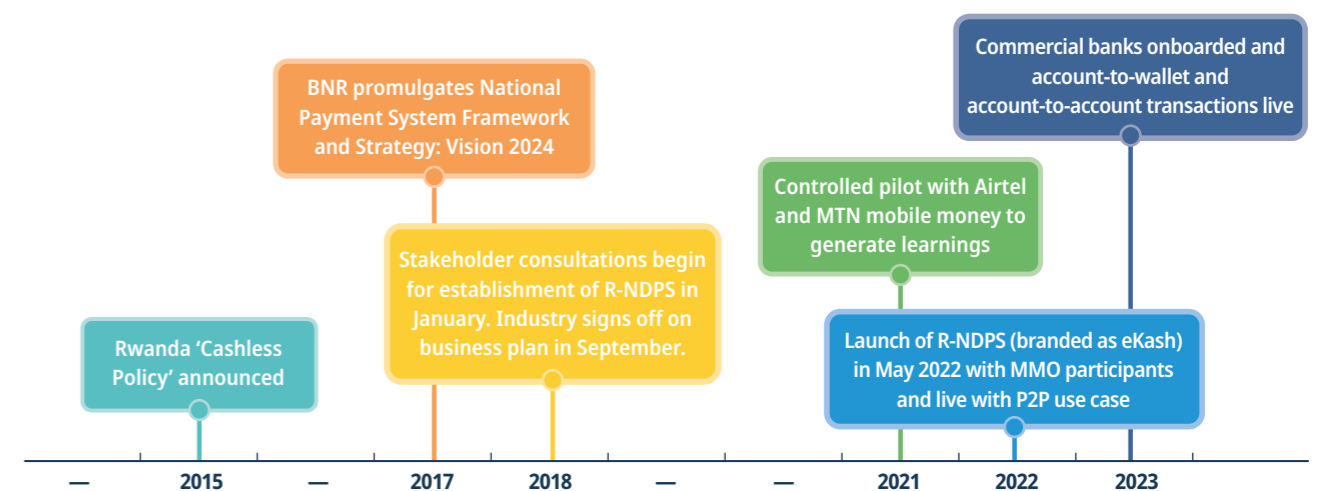
The IPS Timeline

Creating a national payment policy was essential to the creation of an interoperable payment landscape. The BNR and Rwandan government were motivated to establish a payment strategy that could serve an efficient cashless economy centered around robust, modern, and inclusive payment systems. A pivotal aspect of BNR’s strategy was to achieve interoperability among payment service providers (PSPs) as opposed to the existing bilateral set-ups. The policy also aimed to ensure a financially included population through enhanced monitoring of access to and use of digital funds.

Industry approval during the development of the national policy and the resulting business plan was valuable for stakeholder buy-in. In 2018, the BNR, in consultation with Access to Finance Rwanda (AFR), initiated the design of the Rwanda National Digital Payment System (RNDPS) based on an analysis of the payments context in Rwanda. Diverse stakeholders across the Rwandan payments industry weighed in with their opinions over a three-month period, after which the BNR held an industry-wide design workshop to reach a consensus on the RNDPS’ key design features. Towards the end of 2018, industry stakeholders approved the design and business plan (National Bank of Rwanda 2020).

The COVID-19 pandemic caused a delay in the implementation of RNDPS. The pandemic was also a catalyst, however, for a broader transition from cash to digital payments. RNDPS rebranded to eKash as it transitioned from a government initiative to a consumer-facing brand. In 2021, eKash deployed a controlled pilot with two mobile money operators—Airtel Mobile Commerce and Mobile Money Rwanda Limited. The pilot was used to test the security and reliability of the system’s infrastructure, which were enhanced before eKash’s launch. eKash went live in May 2022 with mobile money participants and for P2P transactions. In 2023, commercial banks completed system integration tests and were onboarded to the system, making it an all-to-all, cross-domain IPS. The system will explore integrations with regional switches, such as COMESA’s payment system in development, once eKash reaches its intended goals of serving the Rwanda public efficiently and inclusively.

FIGURE H.1 | eKash timeline

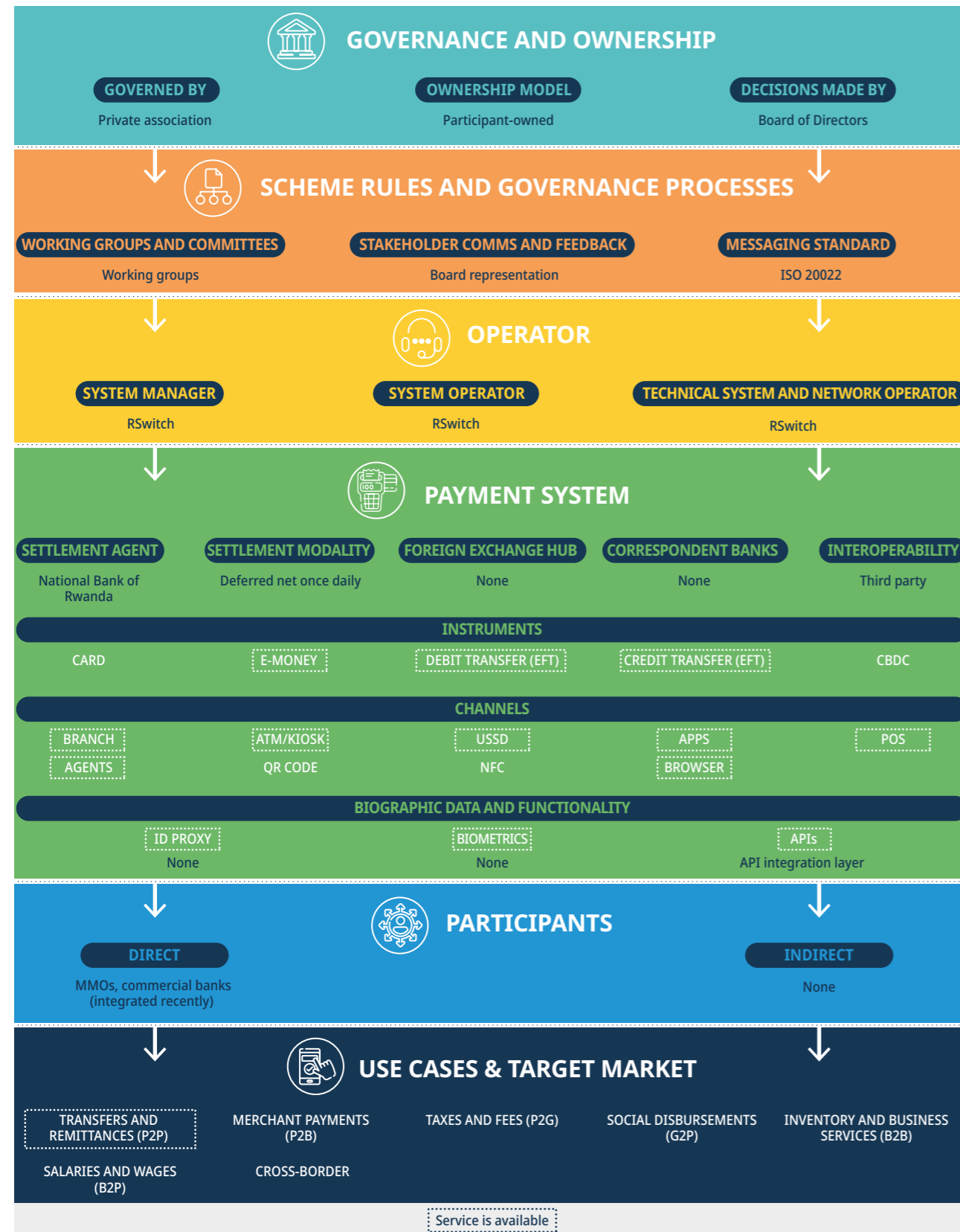


Source: National Bank of Rwanda 2023

Governance and operations

>> Payment system overview

FIGURE H.2 | eKash model overview

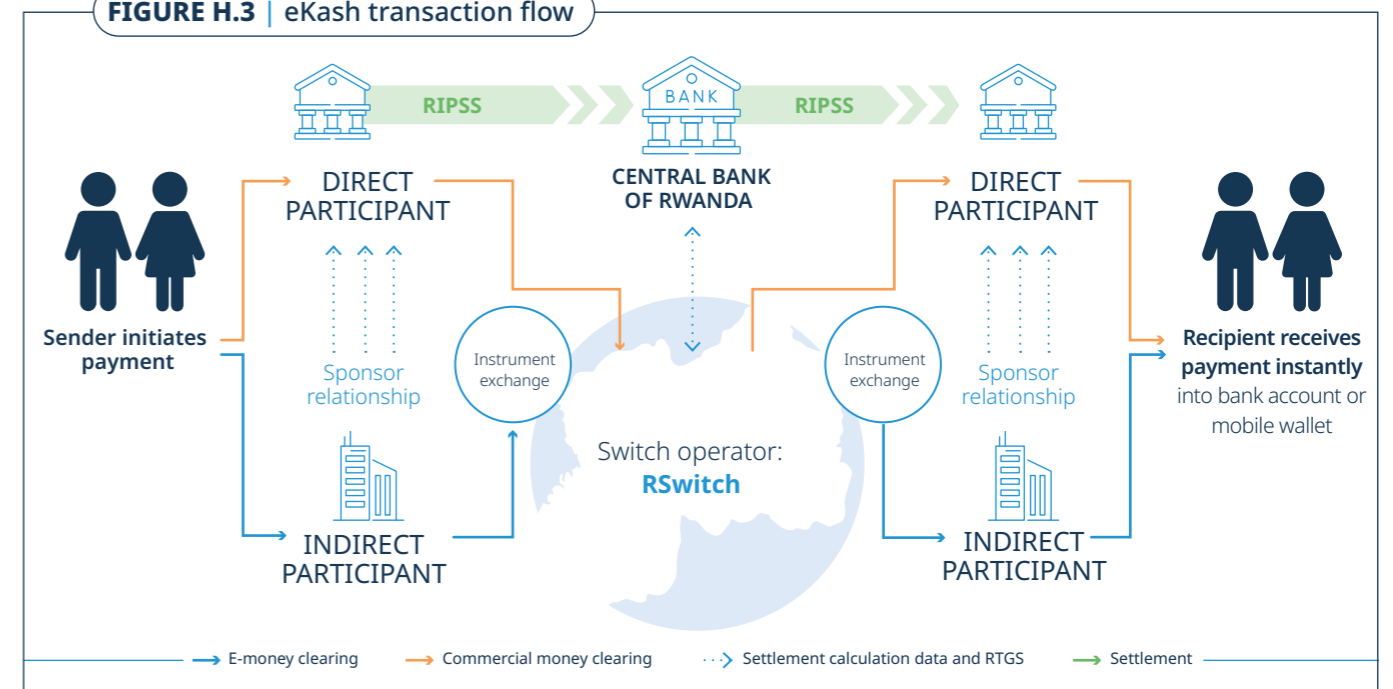


eKash was designed to achieve full all-to-all interoperability within the digital payment ecosystem and is accessible to any licensed financial service provider, including banks and non-banks (in other words, it's a cross-domain IPS). The national switch is operated by an independent and privately-owned company, RSwitch. RSwitch generates and sends the clearing files to the BNR, which settles transactions between participants with settlement accounts held at the BNR. RSwitch switches transactions between commercial money instruments (credit/debit electronic funds transfers (EFT)) and e-money instruments.

Direct participants include those providers that connect directly to the system operator. Only commercial bank participants have access to Rwanda Integrated Payments Processing System (RIPPS), Rwanda's RTGS (Karuhanga 2022). Each commercial bank participant

has pre-funded accounts at the BNR, which the BNR monitors closely and notifies the direct participants when more pre-funding is required. Indirect participants—including MFIs, all telcos issuing e-money, saving and credit cooperative societies, and other non-bank PSPs—must settle via sponsor banks at which they must hold pre-funded accounts. Clearing occurs through the national switch and directly posts to accounts. eKash performs the net settlement calculations and provides information for the positions to settle via RIPPS. RIPSS carries out settlement once per day at 10am, though settlement may happen more than once if deemed necessary. Other eKash stakeholders include those authorized by the BNR to provide overlay services, such as fintechs, government agencies (e.g., the IremboGov online platform), aggregators, and e-commerce providers. These stakeholders can be connected via an API layer (National Bank of Rwanda 2020).

FIGURE H.3 | eKash transaction flow





Governance

eKash has embraced a democratic and inclusive governance structure to give voice to the broader payment industry.

eKash is a participant-owned system that follows a private association governance model. All financial institutions (banks, MFIs, fintechs) are association members. RSwitch is the system operator and supports the participant-owned system in a governance role. RSwitch is privately-owned according to a shareholding structure and is the system manager. Investments in RSwitch in the wake of COVID-19 have resulted in changes to its board of directors, which now includes members of civil society, of the banking association, MMOs, and fintechs (New Times Rwanda June 2023). The board of directors form the governance body and there is limited distinction between the system and operator given the representative board. The BNR has non-voting observer status at the board. All other board members have equal voting rights and collectively elect new members. Actors who have an ability to vote include the commercial bank and MFI representatives, fintech representatives, and a government representative. Participant representation on the board ensures that the industry has a voice in governance.

Though eKash is privately owned, the Rwandan government is substantially involved in its governance structure through agencies such as the Ministry of

Finance and the Ministry of ICT, and through oversight activities by the BNR. Working groups manage operations, legal and compliance, technology, and products and services. Group members are participants of the system. Members are nominated by their respective companies. Participants receive the meeting minutes so they can contribute comments and a validation meeting is called to confirm decisions with the broader membership. Any decision made by a working group is preferably by consensus. Only in limited cases when consensus is not possible, and the matter is pressing, does the committee defer to a majority decision. For instance, the participants were involved in establishing the pricing principles and pricing metrics within eKash's scheme rules.



Functionality

The system supports multiple channels and both commercial bank and e-money instruments (RSwitch n.d.). eKash is channel-agnostic, in that the system supports any channel endorsed by a participant PSP. The participant PSPs include eKash as a consumer-facing option within their menu of payments. Payment instruments supported by the system include card, debit EFT, credit EFT, and e-money. Payment channels include ATM, POS, USSD, and mobile app (National Bank of Rwanda 2020). Discussions regarding the role of CBDC in the system are underway, but are not finalized.



Technical standards and use cases

RSwitch has endorsed a staged approach to rolling out use cases. eKash currently only supports P2P payments, although

it is possible that some transactions are P2B payments to MSMEs through the personal accounts of the business owners. RSwitch plans to implement the remaining use cases, in the following order: merchant payments (P2B), bulk disbursements (B2P), social transfers (G2P), and business inventory payments (B2B; National Bank of Rwanda 2020).

The system uses ISO 20022 as its native message format for integration, which RSwitch expects will better prepare the system for future integration with regional and international payment systems. RSwitch also offers an API integration to allow banks and PSPs with systems running on other messaging standards to integrate. The layer enables non-traditional players, such as fintechs and aggregators, to participate securely in the system and bring new services to consumers (National Bank of Rwanda 2020). While P2B payments are incorporated through existing channels, the industry will re-convene to decide whether to introduce a scheme-level QR code.



Business model

AFR funded the initial costs, particularly around the creation of the RNDPS blueprint and scheme rules. RSwitch

and the industry absorbed the remaining start-up costs. The association opted to recoup these initial costs to avoid putting an undue burden on end-users. As such, the eKash scheme is a for-profit system that aims to operate in a way that enables cost-recovery by incentivizing efficiency and innovation. The system charges participants switching fees, which amount to 0.3% of the transaction value up to a maximum of \$0.38 (RWF 420). Provisions exist for a nominal return to its investors. Participants also pay a one-time integration fee of \$893 (RWF 1,000,000). The system was designed to be affordable for all participants, which should ensure affordability for end-users.



Scheme rules

eKash is a cross-domain system and therefore incorporates the same rules for e-money as for commercial money switching. The scheme rules stipulate prudential obligations, security, liability demarcation, and settlement modalities (i.e., direct or indirect settlement processes). The scheme rules state that every organization licensed by the National Bank of Rwanda is eligible to become a participant and can be directly connected to the switch; only members of the clearing house are directly settled through RIPPS. Organizations which do not participate in the clearing house must have a settlement agent. The dispute resolution module can reconcile the status of a transaction between

the clearing and the settlement of funds, but not at the stage of posting the transaction within PSP subsidiary ledgers or systems. In the case of participant disputes, the involved parties should attempt to resolve it bilaterally among themselves. In cases where the parties cannot reach a conclusion, the scheme rules include service-level agreements (SLA) for the time in which the parties must respond to any dispute. In the case of no response, the automated SLA management triggers the next action. In addition, the scheme rules incorporate a data protection framework and associated risk management framework (National Bank of Rwanda 2020).



Volumes and values

Between the launch of eKash in May 2022 and December of that year, eKash processed 1.1 million transactions amounting to \$5.7 million (RWF 6.4 billion) in value. The average transaction size fluctuated from \$4 (RWF 4,500) in June 22 up to \$5.14 (RWF 5,750) in September 22 and \$3.57 (RWF4,000) in December 2022 (National Bank of Rwanda 2023). It is not possible to predict future transaction averages or adoption levels at this early stage.



Regulation

The driver of payments law and regulation is the Government of Rwanda's Vision 2050 policy that aims for upper-middle income status by 2035 and high-income status by 2050. Achieving these objectives will require a robust and inclusive financial sector, including a safe, reliable, and efficient payment system. The Rwanda National Payment System Strategy 2018–2024 (the “payment systems strategy”) guides the Government of Rwanda and payment system stakeholders toward developing a cashless economy and ensuring financial services reach all.

Since its launch, specific payment system laws have been introduced to create an enabling environment, which creates the framework within which eKash functions. The laws and regulations define the structure and functioning of the payment system, payment service providers, operators, instruments, consumer protection, and overall governance. BNR's mandate to supervise and regulate payment and banking systems derives from *Law No 061/2021 of 14/10/2021 Governing the Payment system*, and the *Regulation N°06/2010 of 27/12/2010 of the National Bank of Rwanda relating to the Oversight of Payment Systems and the Activities of Payment Service Providers* (National Bank of Rwanda 2023, 2010a and 2010b). These laws cover regulation and supervision of payments-related activities, including the licensing of supervised pilots for innovation. Other pertinent laws and regulations include the *Law on AML/CFT-2020*, establishing CDD procedures, and the *Financial Service Consumer Protection Act* (2021).



Learnings related to inclusivity

Measured by the IPS Inclusivity Spectrum defined in Chapter 2, eKash is not yet ranked in terms of inclusivity. One reason for this is while it does provide access to the most widely used channel in Rwanda (mobile money), it does not yet support P2B payments. eKash is in the process of adding P2B functionality, however. Furthermore, there are explicit plans outlined in the interoperability blueprint that highlight the path to a scenario where the IPS supports a full range of use cases. Having explicit plans to integrate use cases drives awareness among the participants of the roll-out agenda and ensures buy-in.

Participants have equal input into decision making and the BNR has a clear governance role in the system. Yet the system endorses a for-profit model aimed at efficient cost-recovery. There is no clear distinction between the scheme and the operator's shareholdings, governance, and for-profit pricing models. In other words, it is not comparable to a not-for-loss model. Equality of ownership opportunities are difficult to ascertain without a separation between the operator and the system.

On the side of inclusivity, however, eKash is the only IPS in Africa to publish its scheme rules. This serves as an exemplar for other systems to enhance transparency, allowing participants to assess the system provisions.

Rwanda's National Payment System Strategy also centers on a transition toward a cashless society. The policy's principles have permeated throughout the payments industry, resulting in prospective participants who are invested in supporting a modern,

digital payment system to achieve the government's vision. This ultimately can lead to more participants utilizing eKash, resulting in a more inclusive IPS.

Blueprint and scheme rules informed by extensive industry and stakeholder engagements ensures industry participants are on board. The establishment and implementation of eKash was informed by extensive consultations between industry and the BNR. This resulted in clarity behind the intentions of the system, addressing any concerns related to competition, and the benefits participants gain from its implementation.

Using a third-party to lead the ideation furthermore resulted in the successful establishment of the IPS. AFR played a key role in establishing the blueprint for eKash and drove an inclusive consultation process between industry and the BNR. AFR and the BNR were responsible for drafting the Rwanda interoperability blueprint that set the foundation for the implementation of eKash. During the drafting of the blueprint, industry was repeatedly invited to share feedback and to approve draft language. AFR's role in developing the blueprint illustrates how independent third parties can be effective in design consultations of an IPS.

A layered governance model with industry inputs from different angles guarantees the voice of participants. Further, eKash has a transparent governance structure. This includes executive management, working groups and forums for industry input. These various layers of governance provide outlets and representation for both the regulator and the industry.



Value addition

In response to cash dominance and financial services silos, the Bank of Zambia (BoZ) published a National Payment Strategy with the aim of establishing a secure, cost-effective electronic retail payment platform in 2013 (Bank of Zambia 2013). The National Financial Switch (NFS) was designed to power the end-user transition to digital payment methods and encapsulate the flow of funds within Zambia, including for the international card brands Mastercard and Visa. Through the shared NFS infrastructure, PSPs would benefit from reduced infrastructure acquisition and platform ownership costs, resulting in lower charges imposed on the end-user, and increased uptake of digital payment channels (African Center for Economic Transformation 2019).



Timeline

A public-private initiative ran system development. The banking industry attempted to develop its own interbank interoperability initiative in 2008 to create scale. However, the high costs involved with such a project and resistance towards the participation of non-bank PSPs led the BoZ to take the project over in 2013. The BoZ partnered with the Zambia Electronic Clearing House (ZECHL), a jointly owned entity by the banking industry and the BoZ, to spearhead the NFS project with the goal

of promoting a cross-domain system that would enable interoperability across all payment providers. The drive to implement a secure and efficient NFS was further cemented in the National Payment System Strategy of 2017, which laid out the BoZ's goal of modernizing the national payment infrastructure (Bank of Zambia 2013).

The initiative took a two-phased approach to channel and instrument integration to buy time for industry-level discussions. The first phase incorporated ATM and POS card functionality; the second phase integrated e-money. In 2018, the NFS went live through the ATM stream. POS followed the next year, enabling the routing of domestic Mastercard and Visa payments through the local platform. The NFS was fully launched in 2019. By 2020, it had functionality to switch e-money transactions (Bank of Zambia 2019a). The integration of non-bank participants—namely MMOs, PSPs, and MFIs—happened in 2020.

ZECHL plans to introduce agent banking and a QR code standard and channel by 2024. ZECHL also has plans to launch a centralized eKYC platform within NFS's services using existing proxy ID functionality (i.e., mobile phone numbers and Bank Identification Number (BIN)) along with limited biographic data. Integration with SADC's TCIB has begun and integration with COMESA's planned IPS is in the pipeline.

ZAMBIA: NATIONAL FINANCIAL SWITCH

Origin story

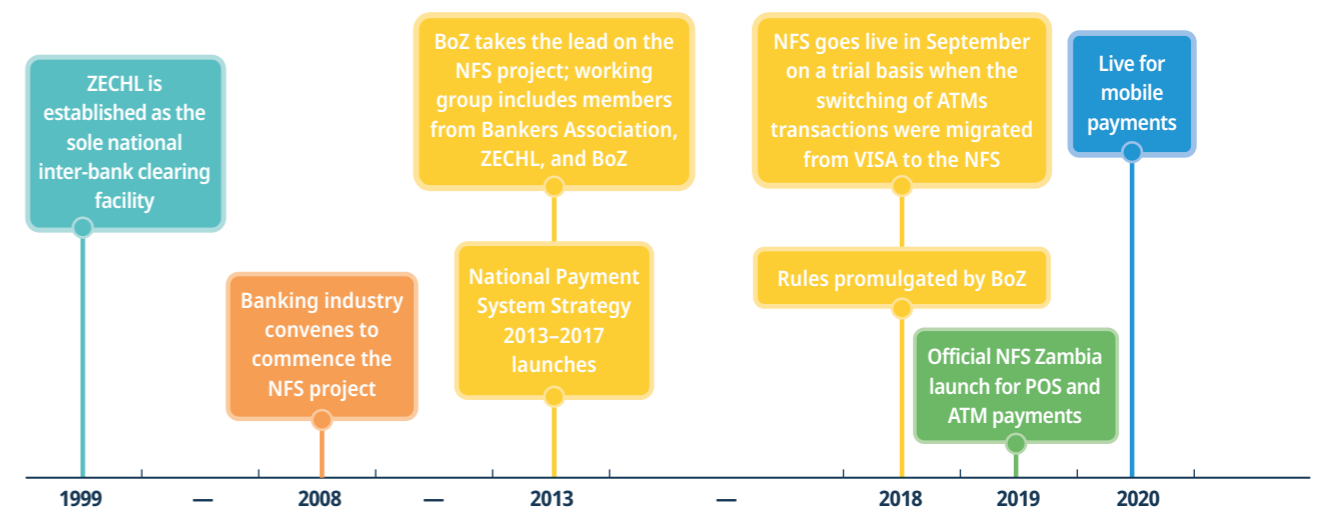


Challenge

The payment ecosystem in Zambia was characterized by limited interoperability, with both bank and non-bank payment service providers (PSPs) relying on bilateral agreements, resulting in a fragmented ecosystem. End-users were unable to consistently transfer payments digitally between PSPs of different types, leading to underutilization of digital retail payment methods by

end-users and low velocity of funds flowing through the national payment systems. In addition, all domestic card transactions switched outside of Zambia at international rates. Cash-based payment dominated and financial inclusion levels remained low (ZECHL n.d.). In 2009, before the commencement of the National Switch Project, 36% of Zambian adults had access to a financial account (World Bank 2014).

FIGURE H.4 | Zambia NFS timeline

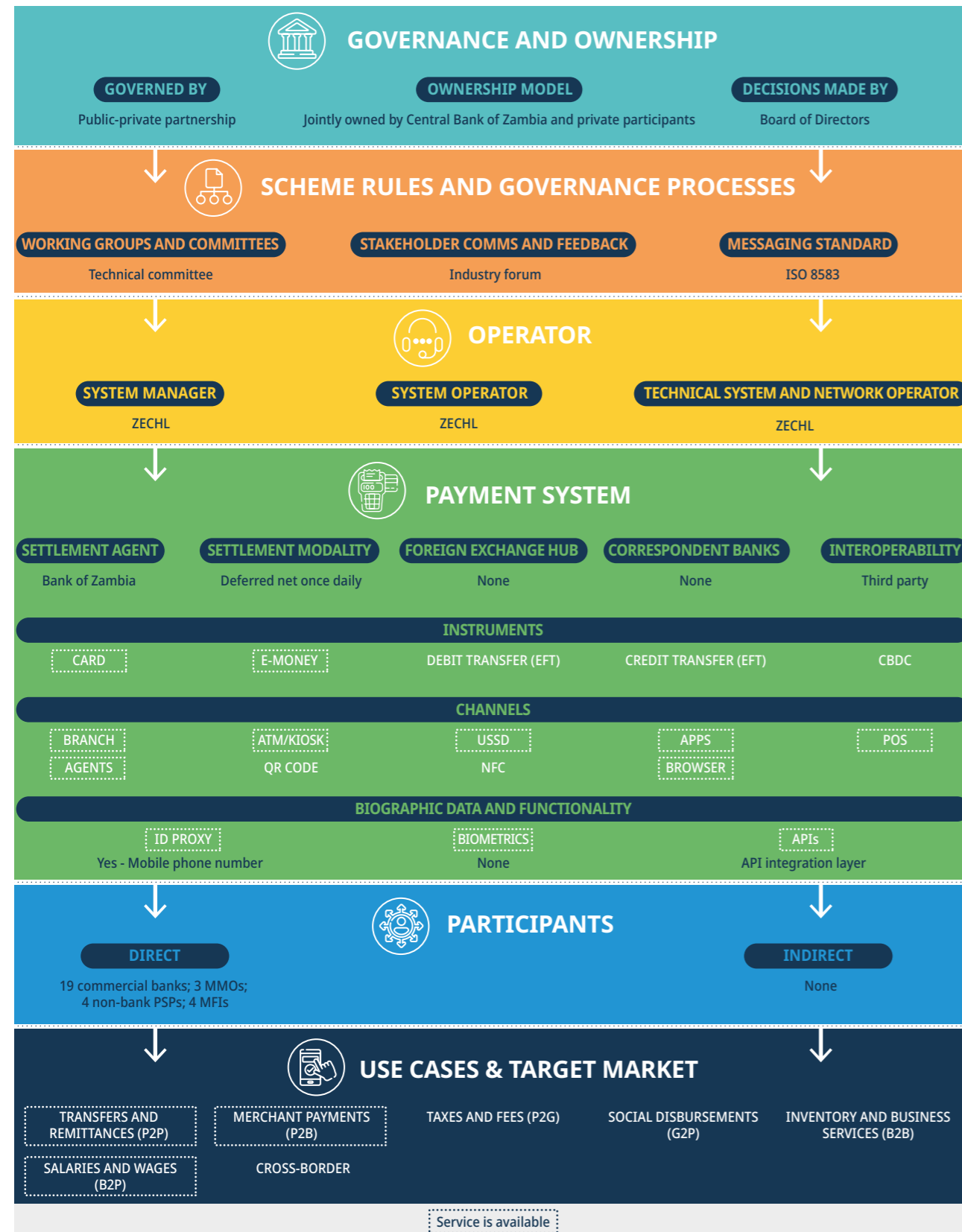


Sources: Bank of Zambia 2020; Bank of Zambia 2019b; Bank of Zambia 2014; Bank of Zambia 2012

Governance and operations

>> Payment system overview

FIGURE H.5 | Zambia NFS model overview



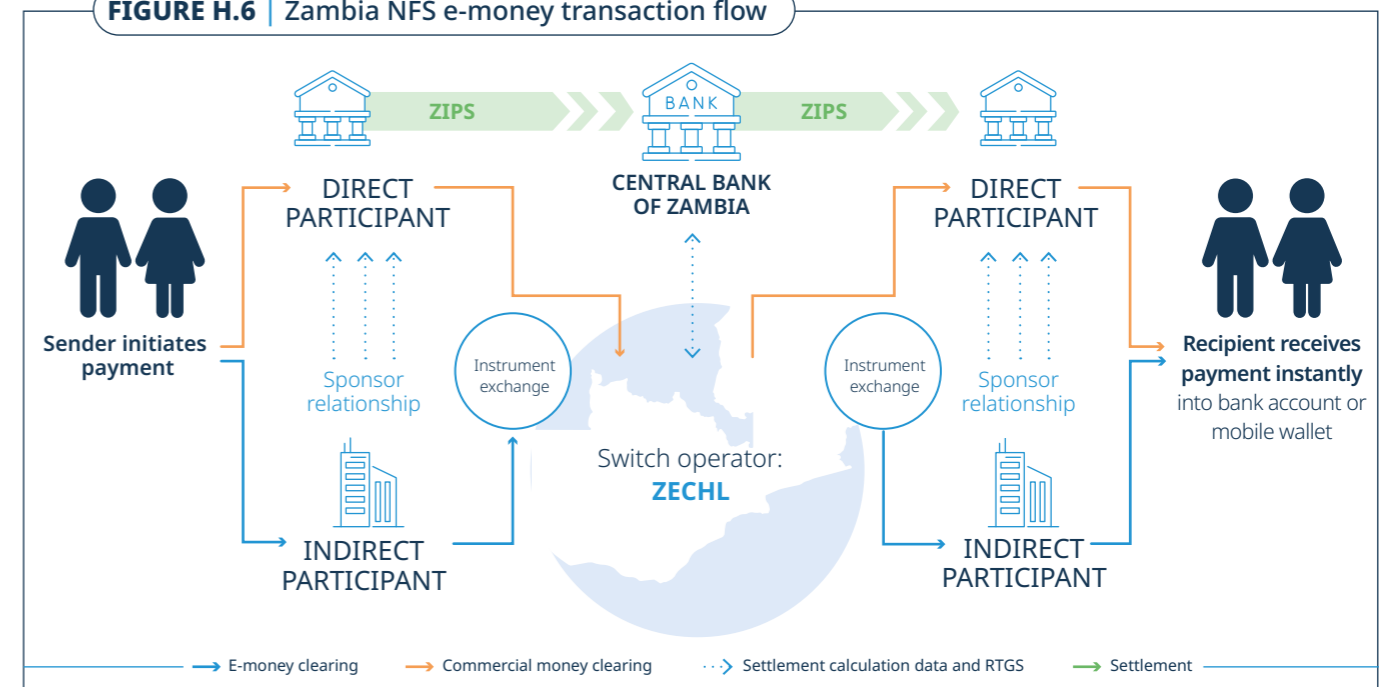
The NFS has been established as an interoperable real-time payment system which connects both banks and non-banks, including mobile money operators (MMOs) (Cooper, et al. 2019; Bank of Zambia 2019). Initially, NFS was designed as a banking industry system, but regulatory pressure and market forces compelled the creation of a payments facility for all actors in the payments sector. The NFS is operational 24 hours per day, 7 days a week (Stakeholder Interviews 2023; ZECHL 2018). The switch calculates net settlement positions and transmits settlement instructions to the BoZ, which acts as the settlement agent (ZECHL 2018). Settlement takes place once per day at 4:30pm through the Zambian Interbank Payment and Settlement System (ZIPSS), the BoZ's RTGS (Stakeholder Interviews 2023).

The NFS has 30 participants, of which 19 are commercial banks, three MMOs, four MFIs, and four non-bank PSPs. There are an additional 10 non-bank PSPs in

the integration pipeline. Both commercial banks and non-banks can be direct participants and connect directly to the NFS for switching of transaction data. However, only commercial banks settle directly at the BoZ. Non-bank PSPs, therefore, rely on sponsor bank relationships for settlement; this makes them indirect participants in settlement.

The settlement arrangements are set out in the scheme rules. There is no limit on the amount a participating bank can settle. Collateral arrangements are in place to ensure soundness and stability with open payment obligations. If collateral has been depleted, the participating bank may apply to BoZ as the lender of last resort for a loan. This risk is constantly monitored by the BoZ. To date, there has not been an instance in which a bank has failed to settle its obligations at the end of the day (ZECHL 2018). The NFS has no cloud solutions available to date and outsources technical support to external companies.

FIGURE H.6 | Zambia NFS e-money transaction flow





Governance structure

The NFS is operated by ZECHL, a non-profit entity jointly owned by the BoZ and the banking industry. ZECHL was established in 1999 as the country's first and only national inter-banking clearing facility. The organization is overseen by a board of directors comprised of member banks, which collectively own a 50% share. BoZ chairs the NFS and owns the remaining 50% share. Shareholding proportions between member banks are not equal and larger, more established, banks hold more shares (ZECHL n.d.). The board is chaired by the BoZ, however, and each shareholding board member has an equal voice.

Revisions or amendments to the ZECHL scheme rules go through a review process that involves the ZECHL management and ZECHL board. If ZECHL stakeholders agree, the amendments go to the Bankers Association of Zambia (BAZ) for vetting. Thereafter, BoZ reviews and agrees to the changes; they must be signed by each of the participants (ZECHL General Rules 2022). It is unclear if each participant has effective veto power over the rules should they refuse to sign or whether the purpose of the signature is to acknowledge changes, not secure agreement. However, input from non-banks comes through their representation in the Payments Association of Zambia, of which the BoZ is also a member. Through this channel, non-banks are able to voice concerns and the Governor of the BoZ can ascertain whether those views have traction in the market. ZECHL consults

stakeholders in introducing or changing fees incurred using the NFS. The BoZ conducts oversight of the NFS and new developments in the payment landscape through a dedicated payments systems department (Stakeholder interviews 2023).



Functionality

The system supports e-money and card payment instruments. The system is card-based and does not include EFT, which is available on a different clearing system (EFT system). ATM functionality was rolled out first, followed by POS and interoperable e-money (Bank of Zambia 2019). For e-wallet transactions, users can use their mobile numbers as an ID proxy. Participant PSPs map proxy IDs to accounts. ZECHL plans to incorporate national ID numbers as a secondary form of proxy ID. The NFS is channel-agnostic and participant PSPs determine the channels they offer to end-users.



Technical standards and use cases

The NFS currently supports several use cases, including P2P and P2B. The technical functionality also supports social disbursements (G2P), however, no social disbursement programs are routed through ZECHL yet, as of June 2023 research deadline. Bulk payments through donor-based agencies flow through the platform (B2P).

The system currently supports the ISO 8583 messaging standard and participants are required to ensure their technical interfaces with the NFS comply with the standards as outlined in the system's interface specifications document. The NFS is evaluating a transition to the ISO 20022 messaging standard, which will depend on whether the system determines the switch will be useful and value-added for participants.



Business model

ZECHL is a non-profit corporate entity established to provide low-cost services to the payments industry. The revenue of the NFS comes from a one-time application fee, annual participation fees, and a per transaction fee, all charged to participants. Revenue from transactions covers approximately 60% of the operating costs and the remaining 40% is covered by ZECHL. The NFS is not currently amassing enough revenue to cover its expenses. ZECHL has embarked on a review of the current business model with the aim of making the switch self-sustaining. ATM, POS, and e-money transactions face a minimal flat switching fee, with e-money transactions only charged for transaction amounts above a certain threshold (ZECHL 2020). In terms of their membership requirements and in accordance with the scheme rules, each system participant is liable to pay or is entitled to receive the fees specified by ZECHL (ZECHL 2018). These fees refer to the agreed tiered interchange fee,

which is based on the various use cases of the system and between all PSPs. The exact fee structure is not publicly available.

Scheme rules



The scheme includes one set of rules for ATMs and POS, and another set for electronic money payments. For the latter, all relevant payment providers are required to follow them if they want to remain a member of the system.

To join, each participant must be designated by the BoZ to provide financial services and meet all general requirements for participation. Participants must either have a settlement account with the BoZ or provide proof of a settlement sponsorship arrangement with a settlement bank (ZECHL 2018; ZECHL 2020). The scheme rules also contain AML/CFT/CPF requirements for participants, including reporting suspicious activities to the Financial Intelligence Centre and maintaining updated customers/cardholder verification data, among others. All participants are required to adhere with the BoZ's AML directives and other applicable AML/CFT/CPF regulations (ZECHL 2018; ZECHL 2020). Moreover, the scheme rules require participants to adhere to Payment Card Industry Data Security Standards (PCI DSS; Bank of Zambia 2020).

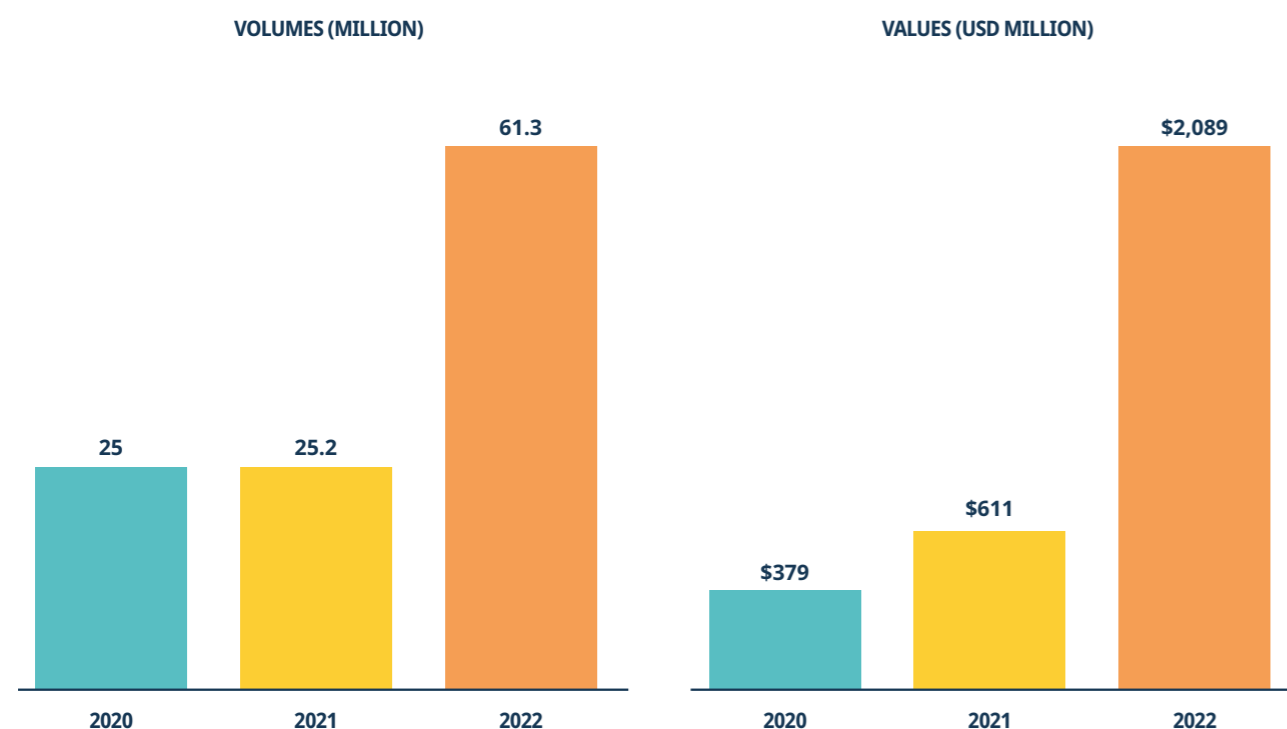


Volumes and values processed by the payment system

Usage of NFS has grown significantly since its launch in 2020, including a sharp incline in 2022. Volumes increased from 25 million transactions in 2020 to over 61 million in 2022, achieving

annual growth rates of 0.8% and 143% in 2021 and 2022, respectively. Values similarly rose from \$379 million (K8.1 billion) in 2020 to \$2.1 billion (K44.7 billion) in 2022, a 242% increase in 2022 alone. The average transaction size has increased from \$15 (K325) in 2020 to \$34 (K729) in 2022.

FIGURE H.7 | Zambia NFS transaction volumes and values



Source: Stakeholder interviews 2023



Regulation

Prior to the release of the NFS, the BoZ passed the National Payment System Act of 2007 which gave the BoZ authority to regulate and oversee the nation's payment systems (Bank of Zambia 2007). Moreover, the strategy sought a payment system that would reduce transaction costs and cash use (Bank of Zambia 2013). The system was instrumental in realizing the vision of the National Payment Strategy of 2013–2017, evidenced by the BoZ issuing regulations in 2017 which regulate banks and non-banks, including e-money issuers. For example, the Banking and Financial Services Act of 2017 stipulated

prudential and supervisory requirements, such as minimum capital requirements and the prohibition of unsafe and unsound practices for banks and financial service providers. The National Payment Systems Directives on Electronic Money Issuance governs the e-money issuers' operations (Bank of Zambia 2017; Republic of Zambia 2018).

Zambia has several regulations on AML/CFT/CPF, which include the Prohibition and Prevention of Money Laundering Act of 2001, Anti-Terrorism Act of 2007, the Financial Intelligence Centre Act of 2010, Anti-Corruption Act of 2010, and others.

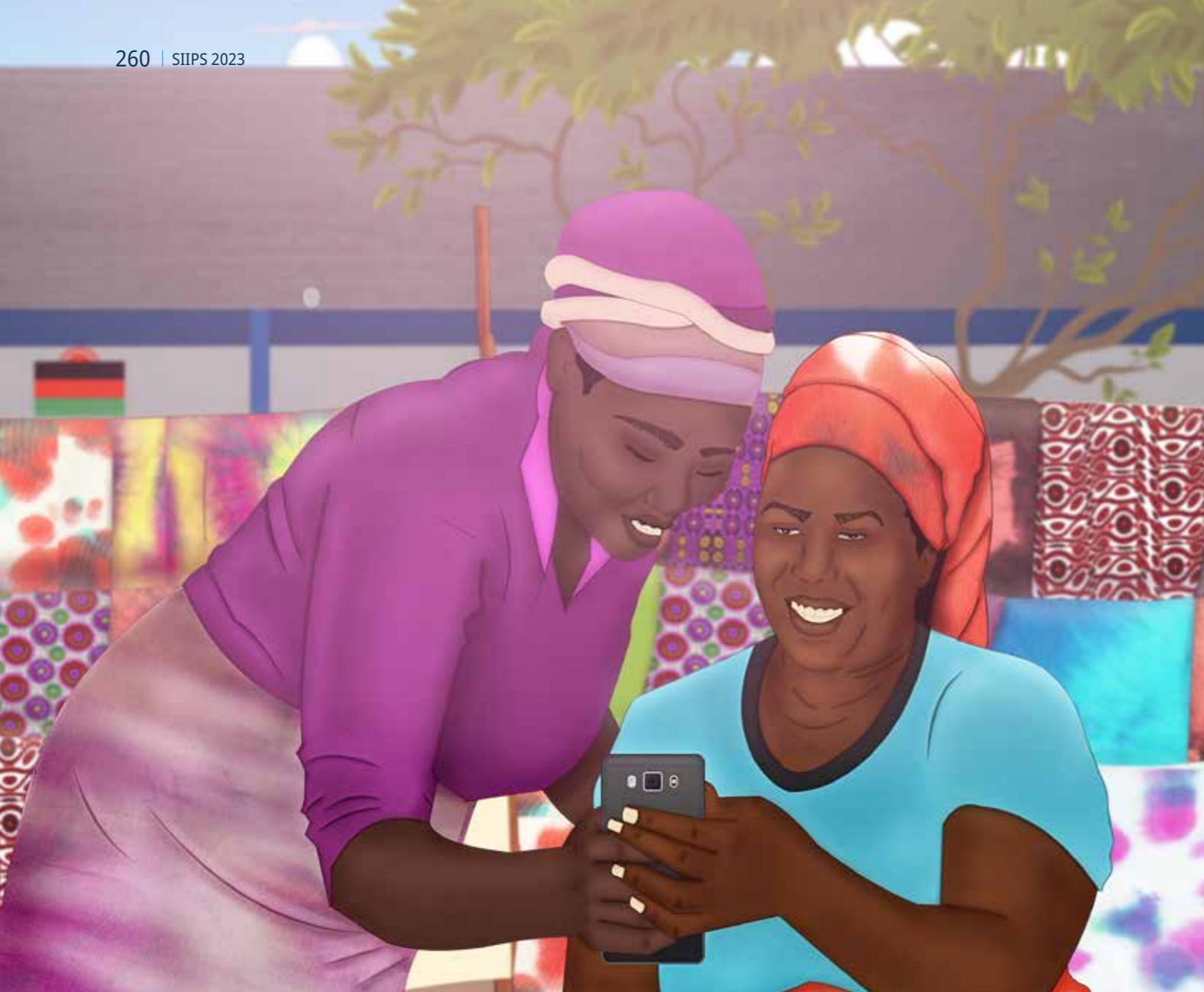
Inclusivity learnings

Measured by the IPS Inclusivity Spectrum defined in Chapter 2, Zambia's NFS has a progressed level of inclusivity. In addition to the basic IPS criteria, the NFS is a not-for-loss system that is

characterized by inclusive functionality, supporting the most used channels and essential use cases (P2P and P2B).

The following learnings emerged in the design and rollout of NFS:

- **A joint initiative between the private sector and the public sector can facilitate the successful implementation and development of a system.** Initially, the banking industry could not commit sufficient capital to implement the NFS. For this reason, the BoZ took control of the project and continues to run it collaboratively with the banking industry. This highlights the importance of a joint implementation of a project requiring private sector involvement but intended to be a public utility with low costs.
- **Explicit demonstration of the value-add of interoperability between the banking sector and non-bank PSPs.** Commercial banks were opposed to the idea of interoperating with prospective non-bank members due to fears about added competition and diminished market power. However, ZECHL and the BoZ showed that cross-domain interoperability would lead to better commercial prospects for the banking sector, particularly by deepening the reach of entry-level deposit accounts and stabilizing the existing retail deposit base. Cross-domain interoperability has led to a greater array of payment modes that are fit-for-purpose for end-users.
- **A phased approach to non-bank integration reduced the complexity of multiple simultaneous configurations, which encouraged bank participants to join.** The NFS launched with bank-only channels and extended to mobile money after two years. This phased approach allowed the system to successfully pilot bank-specific channels and demonstrate the market-wide benefits of interoperability. This motivated participation by a diverse group of PSPs and significantly expanded the reach to end-users, resulting in NFS uptake.
- **Deliberate steps ensure industry voices are heard and considered, specifically those of non-bank participants.** The BOZ and most banking participants have a vote through their shareholding membership. Non-bank PSPs have a voice through the Payments Association of Zambia. These mechanisms of communication and decision-making allow for effective oversight from the BOZ and ensure that the entire industry gets a say, deeming it as inclusive as possible.
- **Cross-border PSP integration a challenge.** Despite a regulatory environment conducive to inclusive payments, regulations around data localization are a challenge to the integration of entrant PSPs based outside of Zambia.



MALAWI: NATSWITCH

Origin story



Challenge

In 2014, 75% of all transactions in the Malawian economy took place using cash and roughly half of the adult population were financially excluded (UNCTAD 2014). Malawi residents had limited access to financial services, exacerbated by a lack of coordination between public and private initiatives seeking to promote financial

inclusion. The use of electronic payments infrastructure in Malawi was low, and the retail and business sectors lacked a convenient means of making and receiving payments (Reserve Bank of Malawi 2008). The absence of interoperability between payment service providers (PSPs), high infrastructure costs, and low fee revenue on transactions were the primary barriers to reaching additional scale with electronic payments.



Value addition

The overarching desire for interoperability motivated banks to consult with the Reserve Bank of Malawi (RBM) to modernize the financial sector and the country's national payment systems. The primary objective of their co-creation, the Natswitch real-time payment system, is a common payment system infrastructure for all PSPs, with sufficient scale to enable low-cost services for end-users (IFC 2021). The instant feature of the system aims to improve the customer experience and increase the circulation of money. Overall, Natswitch is expected to catalyze economic growth in Malawi (RBM 2022a).



Timeline

The private sector and its desire for interoperability catalyzed the launch of Natswitch. In 2010/11, banks convened and raised the need for interoperability to replace the widespread bilateral arrangements. At that time, the RBM was developing financial inclusion and digital retail payments strategies. A digital platform to facilitate interoperability between banks and non-bank players fit into that effort, and RBM launched the interoperability project that would lead to Natswitch with funding and support from the World Bank.

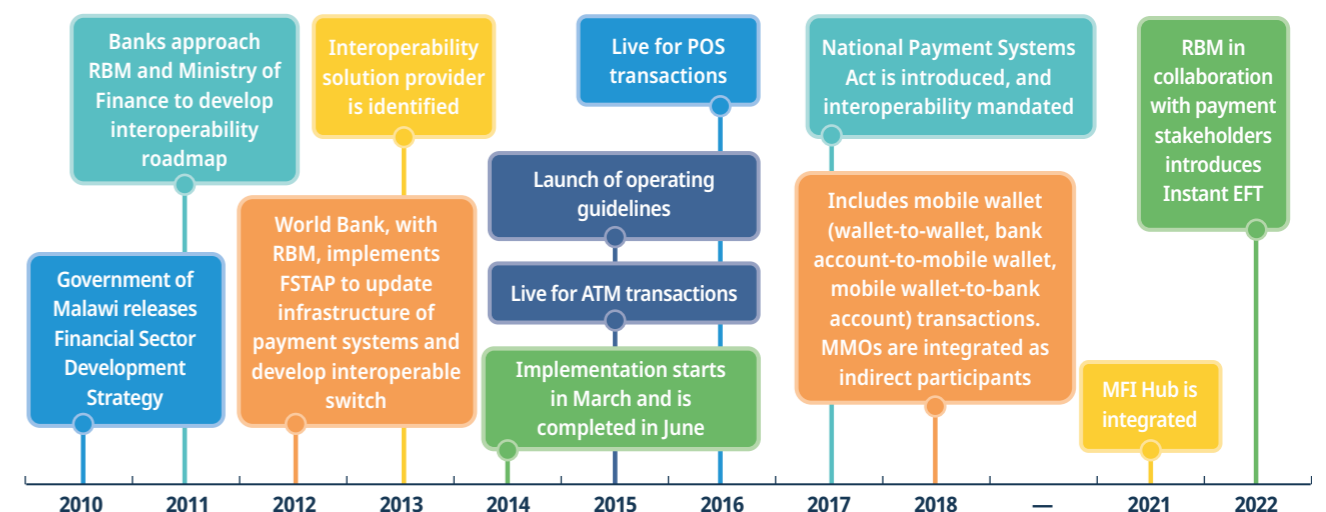
The RBM formed a steering committee at the outset of the project that included the Ministry of Finance, RBM, and the banks. The steering committee was responsible for providing recommendations on project scope, procurement, and the business case for the digital

platform. In 2014, with funding from the World Bank's Financial Sector Technical Assistance Project (FSTAP), the National Switch Ltd (Natswitch Ltd) company and the Natswitch system were launched. Natswitch initially launched with ATM interoperability (2015) followed by POS the next year. Membership was initially restricted to banks.

The banking community in Malawi was initially resistant to integrating with non-banks. That concern was allayed once Natswitch Ltd and the World Bank demonstrated that the switch's sustainability relied upon a level of scale that could only be achieved if it captured the traffic and additional customers served by non-bank PSPs. Ultimately, the banking sector agreed.

In addition, in 2017 the RBM promulgated the National Payment System Act and interoperability directives for all PSPs, mandating that all connect to the switch, thereby ensuring scale and sustainability across the financial sector. These events resulted in 2018 in the integration of non-bank PSPs, including e-money providers, as indirect participants of the system. The microfinance hub (MFI Hub) integrated with Natswitch in 2021. In 2022, Natswitch started processing EFT transfers in real-time. Natswitch Ltd is working with the Malawian finance ministry to implement an e-gateway under the 'Financial Inclusion and Entrepreneurship Scaling' project. By the end of 2023, Natswitch Ltd hopes to start testing the gateway and integrating government ministries, departments, and agencies. Natswitch Ltd plans to integrate the system with SADC's TCIB by December 2024.

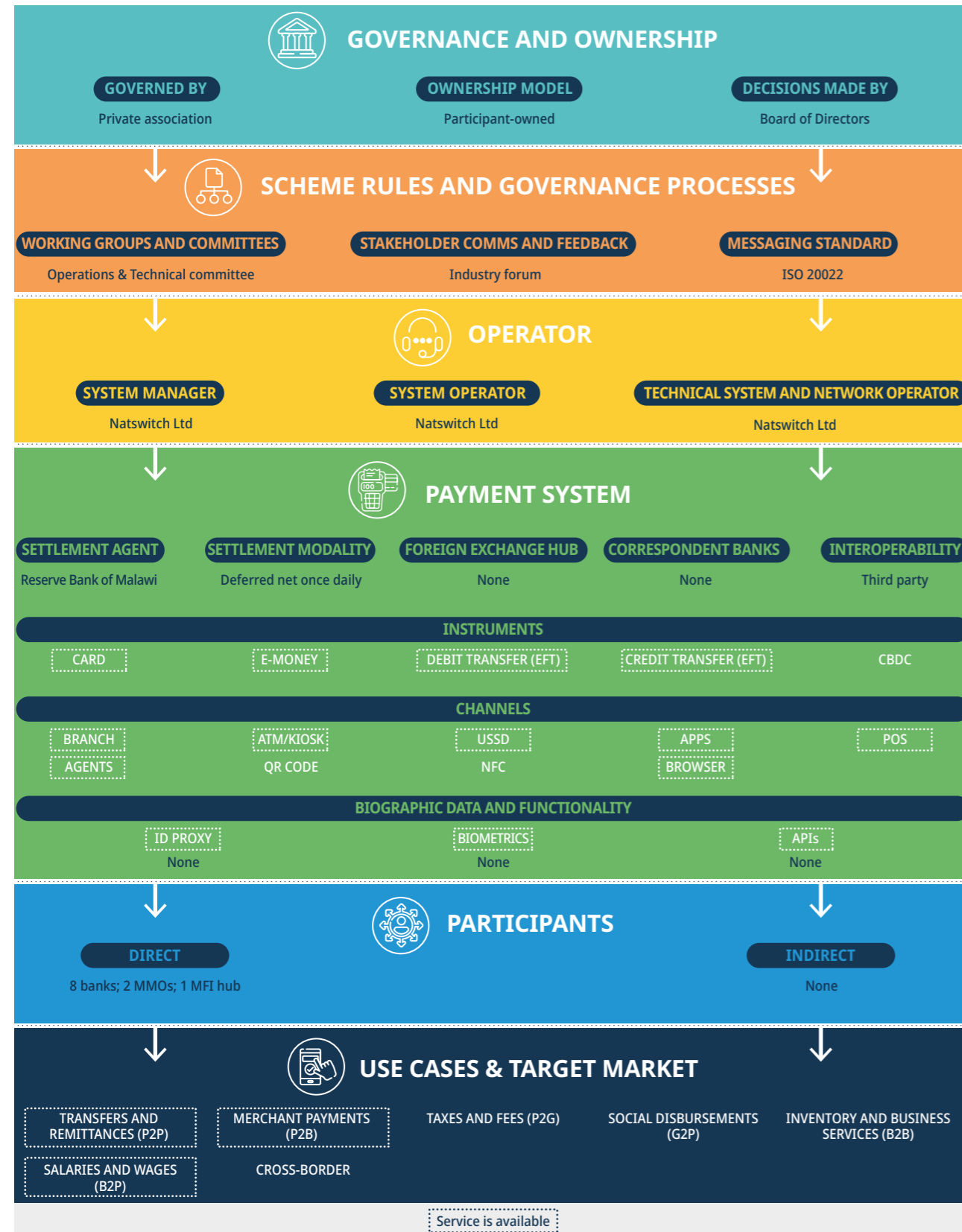
FIGURE H.8 | Natswitch timeline



Governance and operations

» Payment system overview

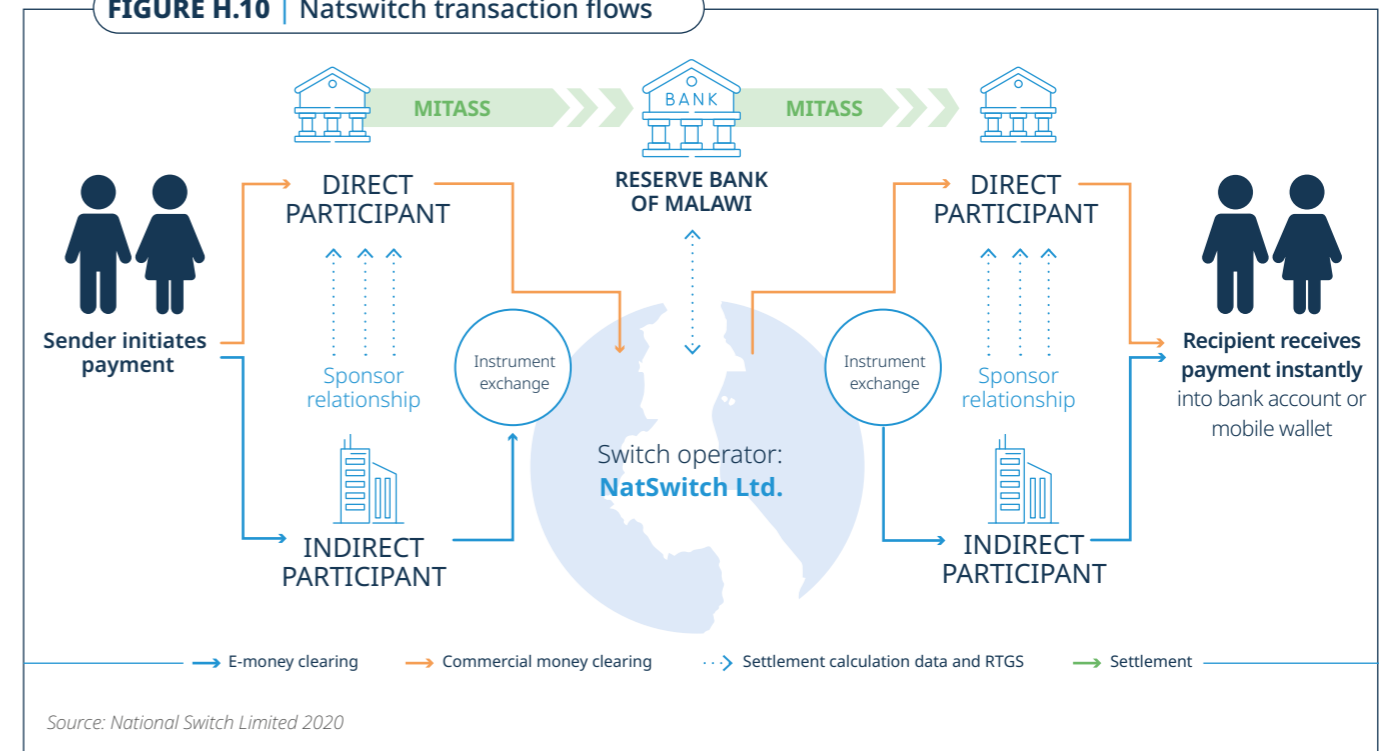
FIGURE H.9 | Natswitch model overview



Natswitch is a shared switch facility used to connect all banks and other financial institutions, including MMOs and MFIs. It operates 24/7/365 with a targeted 99.9% uptime, in line with international card association standards (Natswitch Limited 2020). At the point of authorization, the payer (payee) is debited (credited) in real-time. Settlement of inter-bank transactions takes place between 8:00 and 9:00am of each day on a deferred net basis via the Malawi Interbank Transfers and Settlement System (MITASS) at the RBM. All

banks connect to MITASS directly. Non-bank financial institutions require sponsorship by a bank to settle transactions on their behalf (Natswitch Limited 2020). The system includes eight banks, two MMOs, and the MFI Hub, which houses 20 SACCOs and 19 MFIs (MFI Hub 2023). Natswitch Ltd outsources all technical support: BPC Banking Technologies Group supports the national switch application, Mitra Systems supports computer hardware, and Globe Internet supports networking and telecommunications.

FIGURE H.10 | Natswitch transaction flows



Governance structure

Natswitch, the switch, is owned by Natswitch Ltd, the company, with established consultations with the participants and RBM. Natswitch Ltd is a privately-owned, not-for-profit limited liability company. It sets the scheme rules and technical standards, a process in which all shareholders participate. Natswitch is run by Natswitch Ltd under a defined service-level agreement (SLA) with its members. Owners include all eight commercial banks and two MMOs. Each shareholder has equal voting rights. The Natswitch board is the governing body, with ultimate authority over the system's operations, subject to the oversight of the RBM. The CEOs of all Natswitch

member banks hold board seats. Participants are either members or non-members, according to their ownership role and contribution to the facility's set-up costs. Natswitch's board operates with multiple committees, including a technical committee that creates task forces to deal with technical issues, and a policy committee that considers governance issues related to the national switch ecosystem. RBM has no direct decision-making power in Natswitch beyond oversight and regulation. Natswitch permits fintechs to join, however they first require a letter of no objection from other existing participants. The MFI Hub is integrated with Natswitch as one participant representing the affiliated SACCOs and MFIs.



Functionality

Natswitch offers instant clearing of low-value transactions through ATMs, POS systems, branches, internet-based payments (browser and apps), and USSD (Reserve Bank of Malawi 2022a). There are plans to include a QR code standard and proxy ID guidelines under an e-payments gateway project in development. In the future, mobile numbers and other PSP-maintained proxy IDs will be supported and routed using debit card payment standards combined with institutional BIN routing. Most transactions are single message. The exception are POS transactions, which are dual message and PIN/password authorized. Natswitch similarly provides a range of instruments, including e-money, card, credit EFT, and debit EFT (Natswitch Limited 2020).



Technical standards and use cases

Natswitch supports a set of use cases, including merchant payments (P2B), P2P, and B2B. There are plans to develop a national e-payments gateway that will facilitate social disbursements and government payments (G2P), as well as P2G, G2B, B2G, and G2G payments. Natswitch also plans to develop an e-commerce service that will facilitate B2B, B2P, and P2B payments. The gateway will be

structured such that the agency initiating a payment has a contractual relationship with the RBM or commercial bank through which the funds will be disbursed.

The switch currently runs on the ISO 8583 messaging standard. Discussions are underway regarding the creation of a translation layer to enable the conversion from ISO 8583 to ISO 20022 (and vice versa). Natswitch is also working on an agent banking functionality project to allow participant end-users to process interoperable cash-in/cash-out transactions through the switch.



Business model

Natswitch is set up as a public utility and operates on a cost-recovery basis. The World Bank, through the FSTAP, funded the start-up costs for the National Switch with a five-year loan facility of \$28 million (MK28.7 billion). \$2.2 million (MK2.7 billion) was disbursed to acquire and install the national switch.

The Bankers Association of Malawi supplemented the costs of implementing Natswitch through equity investments (Malakata 2023). To cover operating costs and maintain a not-for-loss business model, all participants of Natswitch are required to pay a joining

fee; only non-member participants pay an annual membership fee (Chiphwanya and Orama 2016). In addition, Natswitch assesses an interchange fee for all transactions. All fees, other than for POS transactions, can be passed onto the originator. The exact amounts are not publicly available. Under the Retail Payment System Interoperability Directive, PSPs cannot charge end-users to initiate POS transactions (Reserve Bank of Malawi 2017). The interchange fee is therefore covered by acceptance fees charged to the merchant. PSPs are required to consult the RBM before raising ATM and instant EFT charges. There is an explicit mandate against fee collusion among PSPs.



Scheme rules

Natswitch Ltd launched the operating guidelines for the National Switch in 2015, with revisions in 2020, to govern the operations of the Natswitch ecosystem and relationships among its members. The guidelines include member obligations, fees, and roles and responsibilities within the switch. To be considered a participant of Natswitch, a PSP applicant must be licensed by RBM as a bank or financial institution, and possess technical infrastructure and the requisite up-to-date security and integration software. The Natswitch board is responsible for formal

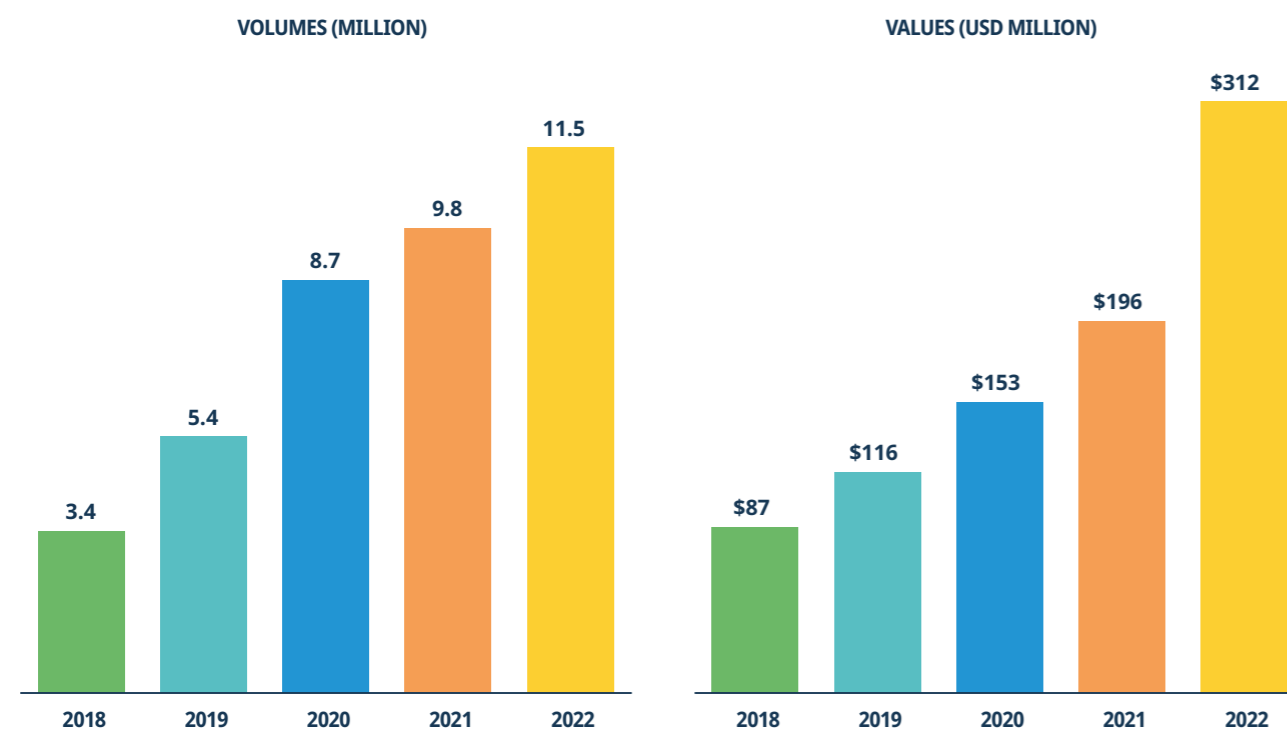
approval of new participants. Non-compliance with the requirements outlined in the guidelines results in penalties or fines. The scheme rules also set out security requirements based on PCI-DSS and EMV standards and SWIFT international security guidelines.

The scheme rules include mechanisms for dispute management between PSPs. Disputes are filed via an online portal available to PSPs. As per the payment systems law, if a dispute is not resolved via the dispute management portal within 72 business hours, the offending PSP receives a penalty (Natswitch Limited 2020). Natswitch follows conciliation, mediation and arbitration processes when resolving disputes between PSPs, in line with payment systems law.



Volumes and values processed by the payments system

End-user transaction volumes between 2018 and 2022 had a 51% CAGR, while values saw a 53% compound annual growth rate (CAGR) (Figure 64). Average annual transaction values were \$17 in 2020 and \$27 in 2022, indicating increased adoption of higher-value transaction use cases. Overall, only around 20% of transaction values that go through Natswitch are off-us transactions.

FIGURE H.11 | Natswitch transaction volumes and values

Source: Reserve Bank of Malawi 2023



Regulation

Prior to the launch of Natswitch, in 2001, the National Payments Council together with RBM and the Bankers Association of Malawi endorsed the Malawi National Payments Systems Vision and Strategy framework. The strategy framework was subsequently updated in 2008 and governed the future of payment systems development until 2013.

The RBM also implemented several laws and regulations targeted at Malawi's payment ecosystem and its

respective actors. This includes the Malawi National Payment System Bill, drafted in 2014 and circulated in the Malawi Gazette in 2015; and the 2017 Interoperability of Retail Payment Systems Directive, which mandated the connection of all licensed PSP's to Natswitch (Reserve Bank of Malawi 2017).³ Other notable regulations include the 2011 Mobile Payment Systems Act, 2016 Payment Systems Act, and 2019 directives around e-money schemes (IFC 2021). Supporting regulations include the AML/CFT/CPF law (2006), and the Electronic Transaction and Cyber Security Act (2016).

Inclusivity learnings

According to the IPS Inclusivity Spectrum outlined in Chapter 2, Natswitch ranks at the progressed level of inclusivity. Natswitch powers inclusive functionality for the most important use cases (P2P and P2B) and meets the inclusive channel requirements. As Natswitch launches

a broader range of use cases, it will further realize its inclusion goals. Adding centralized and transparent consumer recourse channels as well as additional input and equity opportunities for non-bank financial institutions would further raise the IPS's inclusivity level.

The following learnings emerged in the design and rollout of Natswitch:

→ **Demonstrating the business case for interoperability between participants ensures buy-in.** The development of a strong business case for interoperability was key to reduce resistance from the banking sector about integrating with non-bank participants. This was critical to the establishment of a cross-domain system.

→ **A domestic regulator with a payment digitalization agenda sets out conducive regulatory frameworks.** Private association-led payment initiatives that aim to deliver a societal good can be challenged if they lack appropriate oversight and direction from regulatory bodies. Several payments-related laws created the enabling environment for Natswitch and provided clarity to the industry about what is legally permissible within the system's operations. A strong legal framework supports the roll-out of an IPS that can drive inclusion.

→ **Central bank and development partner-led initiatives are key catalysts to driving implementation.** Although private sector-owned and governed, Natswitch was originally led by the RBM with input and funding from the World Bank. The RBM established committees with commercial players to ensure that industry views were incorporated during the system's design phase, ultimately leading to greater participant buy-in.

→ **Including multiple channels, instruments, and participant types enables scale.** An array of payment channels supported by the IPS and facilitated by different participant types, provides end-users with a variety of choices that suit their means and contexts. Natswitch supports important mobile money and banking channels. Further incorporating higher-volume use cases like G2P payments will provide the foundation for a digital value circulatory system. The cycle will only be complete with comprehensive P2B and B2B payments.

→ **Mandated interoperability ensures successful integration of non-bank and bank PSPs, but it is not a panacea.** Commercial bank participants may be reluctant to allow non-bank PSPs to integrate with the system, for reasons of market control and fear of losing competitive advantage. Directives around interoperability in Malawi ensured that private-sector resistance could not override the interoperability goals for the system. Interoperability mandates are effective tools by regulators to bring industry onboard. However, they do not guarantee scale for the switch, especially if there are local dominant PSPs processing a significant volume of on-us transactions. In the case of Natswitch, the switch continues to be under-utilized because most domestic retail traffic is routed as on-us transactions.

→ **An ISO 20022 API integration layer supports inclusion.** The enhanced interoperable technical features and improved governance aspects of ISO 20022 have the potential to enable Natswitch to reach greater scale, but the downside is the cost of system upgrades. An efficient ISO 20022 API layer creates an inclusive compromise, as it does not require an industry-wide upgrade and can support smaller institutions that focus on vulnerable market segments.



Value addition

Prior to 2020, the CEMAC region lacked a reliable and stable payment interoperability platform to facilitate the real-time transfer of funds between commercial banks and mobile money operators (MMOs). EFTs were available through two old structures, the Electronic Banking Office of Central Africa (OMAC), based in Cameroon and the Electronic Banking Office of Central Africa (SMAC), based in Gabon. These two structures managed the Interbank Electronic Payment System.

In 2020, the Groupement Interbancaire Monétique l'Afrique Centrale (GIMAC) was established to consolidate the activity of the two systems. GIMAC launched the GIMACPAY IPS with the objective of providing end-users in the CEMAC region with a low-cost, efficient digital payment option for both domestic and cross-border payments. GIMAC hoped this service would provide end-users with a replacement for cash and ultimately aggregate retail payments. GIMACPAY reinforces the BEAC's mission to create a cashless society and facilitate capital flows in the region (Agence Ecofin 2020).



Timeline

The objective of forming GIMAC was to facilitate regional card payment integration, to interconnect all banks, MMOs, and

microfinance institutions (MFIs), and to promote the development of low-cost digital payments in Central Africa (SONEMA 2015). Prior to the establishment of GIMAC, BEAC made the decision to modernize the interbank electronic banking system, which led to regulatory reform. Activities formerly assigned to the Central African Electronic Banking Authority and the Central African Electronic Banking Company reorganized into one single entity, GIMAC. GIMACPAY complements the existing systems, the RTGS, Système de Gros Montants Automatisé (SYGMA), and the ACH, Système de Télécompensation en Afrique Centrale (SYSTAC).

GIMAC developed GIMACPAY as a regional interoperability platform. It was piloted for 10 months from January 2016 to October 2016 with 14 financial institutions, during which it processed more than 100,000 electronic transactions worth 1.7 billion XAF (\$2.8 million). BEAC had mandated interoperability of all PSPs and in 2018, issued a directive that GIMAC would be the entity to operationalize the interoperability vision. GIMACPAY, the system, was officially launched in July 2020. Twenty-nine participants had undergone the onboarding process by the official launch date. The remaining PSPs in the region onboarded in subsequent years. GIMACPAY introduced the QR code channel, called GPAY QR Code, as a way to boost digital payments in 2021 in response to the region's COVID-19 measures (GIMAC 2021).

CEMAC: GIMACPAY

Origin story

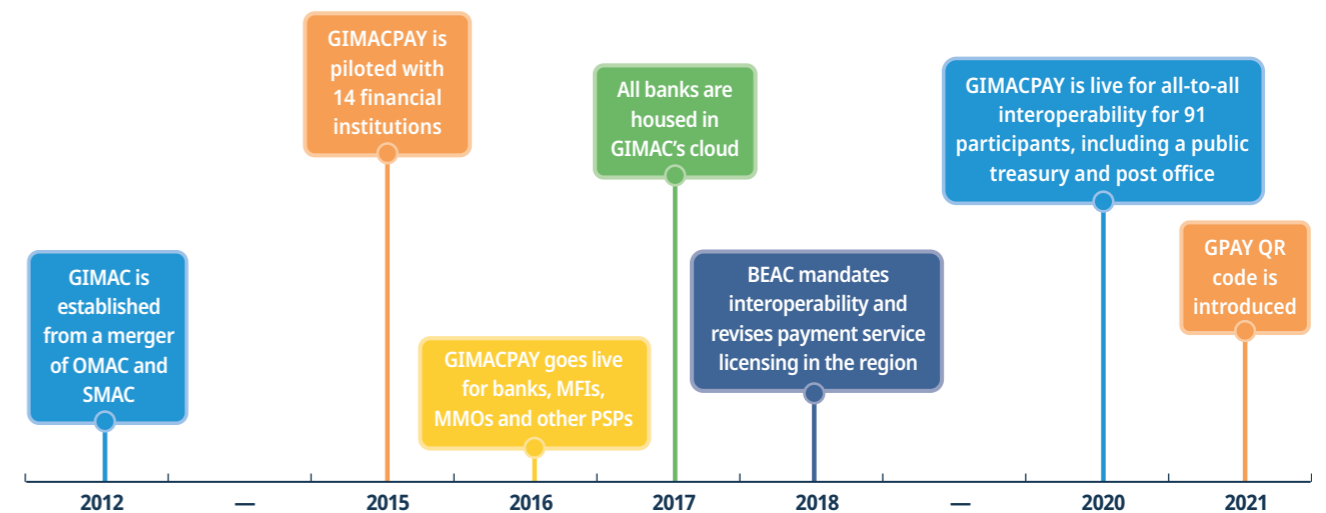


Challenge

The Central African Economic and Monetary Community (CEMAC) includes Cameroon, the Central African Republic, Chad, the Republic of Congo, Equatorial Guinea, and Gabon. The region has a large proportion of financially excluded adults. Only 23% of the adult population in CEMAC had a financial account in 2017 (World Bank 2018). As a monetary union, CEMAC has a single currency,

Central African Franc (XAF), and a single regional central bank, Banque des États de l'Afrique Centrale (BEAC). Given that the majority of retail transactions, both domestically and cross-border, were conducted in cash, the regional central bank faced difficulties controlling capital flows and monitoring money laundering and terrorist financing within the region. Likewise, the reliance on cash constrained merchant retail trade activity between countries within the region.

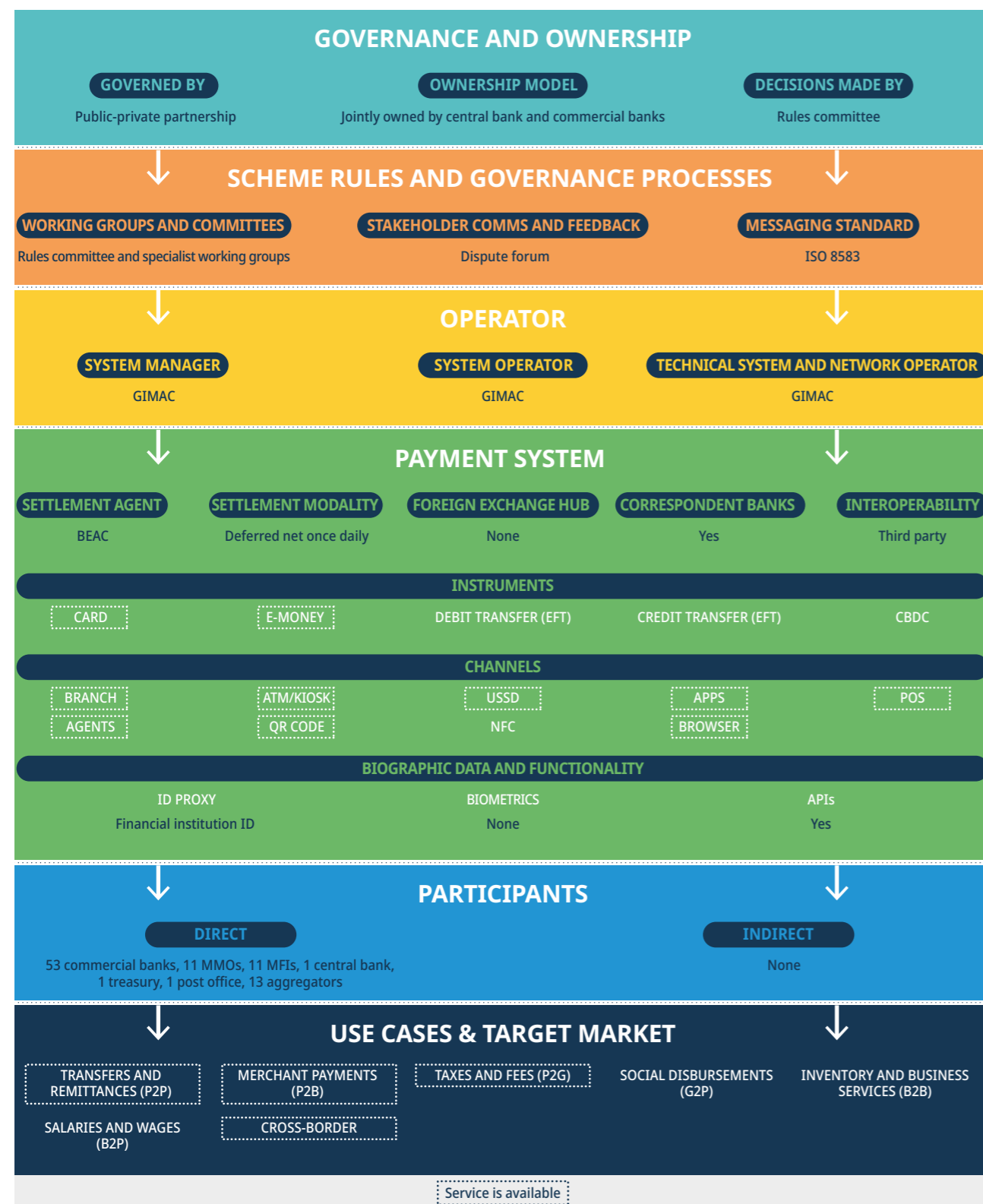
FIGURE H.12 | GIMACPAY timeline



Governance and operations

» Payment system overview

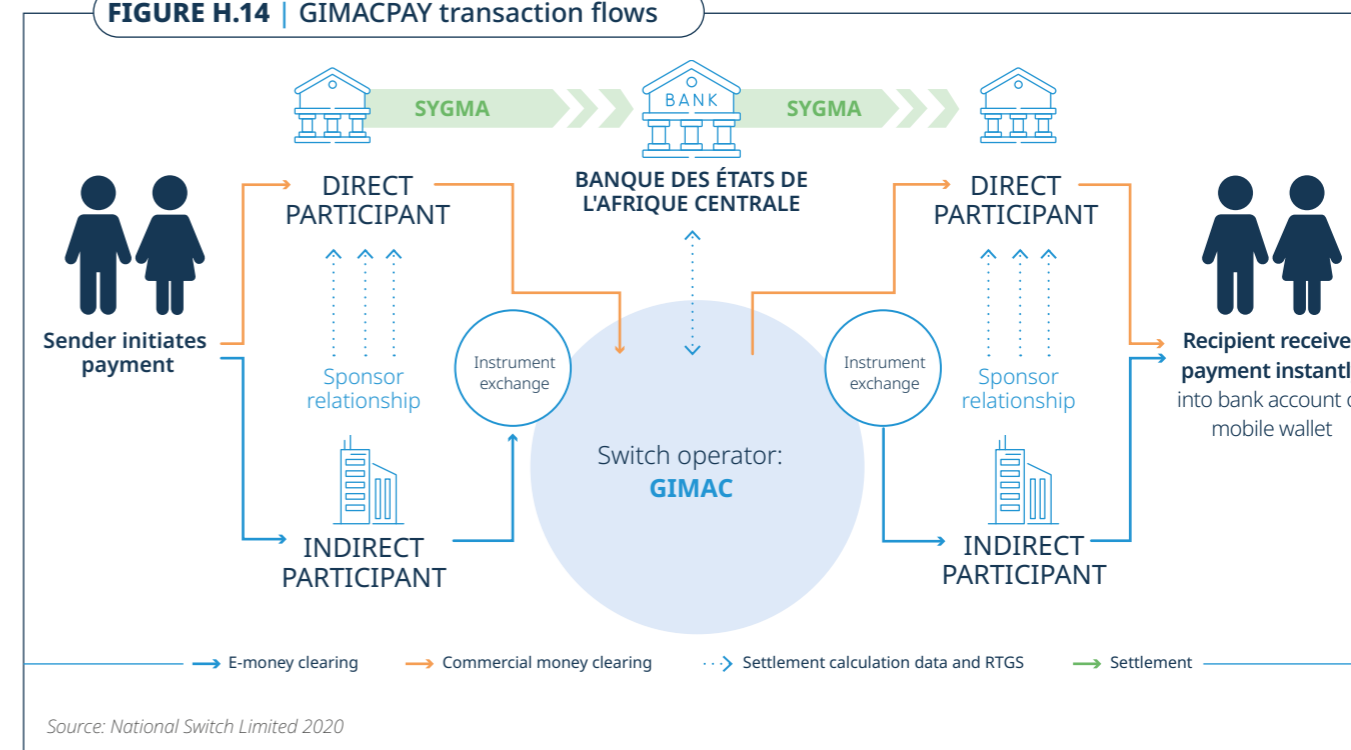
FIGURE H.13 | GIMACPAY model overview



GIMACPAY is an integrated electronic retail payment system that facilitates intra-CEMAC payment transfers, both domestically and cross-border within the monetary union. Interoperable payment services are provided to PSPs in the six CEMAC member countries. The PSPs include commercial banks, MMOs, MFIs, service aggregators, postal administrations, and national treasuries. To date, GIMACPAY has 91 participants, including 53 commercial banks, 11 MFIs, 11 MMOs, 13 aggregators, one central bank, one public treasury, and one post office. Commercial

banks provide settlement services. Non-bank participants are required to have a sponsor bank to settle transactions (indirect participants in the system). Transactions clear in real time using the CEMAC region's common currency (XAF) and settlement is conducted via the SYGMA, the regional RTGS platform (Agence Ecofin 2020), housed within BEAC. Settlement occurs once per day at 2pm on a net basis. Given the single currency regime in place, GIMACPAY treats domestic and cross-border transactions within the monetary union equally.

FIGURE H.14 | GIMACPAY transaction flows



Governance structure

GIMACPAY was established by commercial banks and the BEAC as a private company dedicated to digital payments. It follows a joint ownership model and public-private partnership governance model, where BEAC owns a 99.2% share and the remaining 0.8% is divided between the commercial bank members in proportion to their size. BEAC contributed the majority of the start-up funding, as commercial banks were reluctant to invest in another regional interbank project at the time, SYSTAC. BEAC plans to transfer the majority shareholding to GIMACPAY's members in the future, though no timeline has been set. In addition to owning the system, BEAC is also the overseer and settlement

agent. GIMAC performs the role of system governance and technical operator.

Direct participants include commercial banks, MMOs, MFIs and payment system aggregators, post offices, BEAC, and the treasuries.⁵ The treasury of Cameroon is the only one connected to date. In 2020, at the CEMAC ministerial committee, it was recommended that treasuries be linked to GIMACPAY in order to benefit from secure solutions for expenditure and collections (GIMAC 2021). Participants in GIMACPAY sign membership agreements with GIMAC and BEAC. GIMAC hosts meetings between its members and participants to collect comments and proposals on the adjustments to scheme rules and creation of new guidelines (GIMAC 2021).



Functionality

The system currently supports a range of channels, including apps, ATM, browser, POS, QR code, and USSD channels.

Currently, mobile is the most used channel in the system (Stakeholder interview 2023). As of July 2022, all proprietary bank cards were withdrawn from circulation, and replaced by GIMAC cards (Kamsu kom 2022).



Technical standards and use cases

GIMACPAY includes a broad range of use cases—namely, P2P, P2B, cross-border, and bill payments. Additionally, the IPS enables e-government services, including insurance payments and tax payments. There are plans in the pipeline to roll out further use cases like G2P, which is available but not used to date. Further use cases will be informed by a market study aimed at assessing the needs of the population (Stakeholder interview 2023). For messaging standards, GIMACPAY currently uses ISO 8583, but the ISO 20022 protocol will also be available soon.

As of 2017, all commercial banks in the sub-region were housed in GIMAC's cloud. Cloud hosting was always part of the specifications of the system. For GIMAC, it was important to provide a hosting option for banks and MMOs to facilitate quick integration with the system. Those PSPs that did not yet have the infrastructure could be hosted on the GIMAC platform.



Business model

BEAC put up 99.2% of the initial start-up capital to fund the establishment of GIMAC, and the remaining shareholding is divided between the commercial bank members in proportion to their size. To cover operational costs, PSPs charge end-users a minimum of XAF 500 (\$0.83) and a maximum of XAF 1,000 (\$1.66) per transaction. This amount is based on what the individual would theoretically pay for transport to a bank or ATM (Stakeholder interview 2023). For mobile money transactions, end-users can be charged a maximum of XAF 2,850 (\$4.73) for transactions valued between XAF 500 (\$0.83) and XAF 5,000,000 (\$8,290). GIMAC ensures that all system participants in each member country follow the fee band. GIMACPAY operates on a cost-recovery (not-for-loss) basis.



Scheme rules

GIMACPAY's governance manual defines levels of availability, participant assistance, response time, incident resolution, and an escalation plan, as well as penalties in the event of a service failure (GIMAC 2021). The scheme rules are not publicly available.

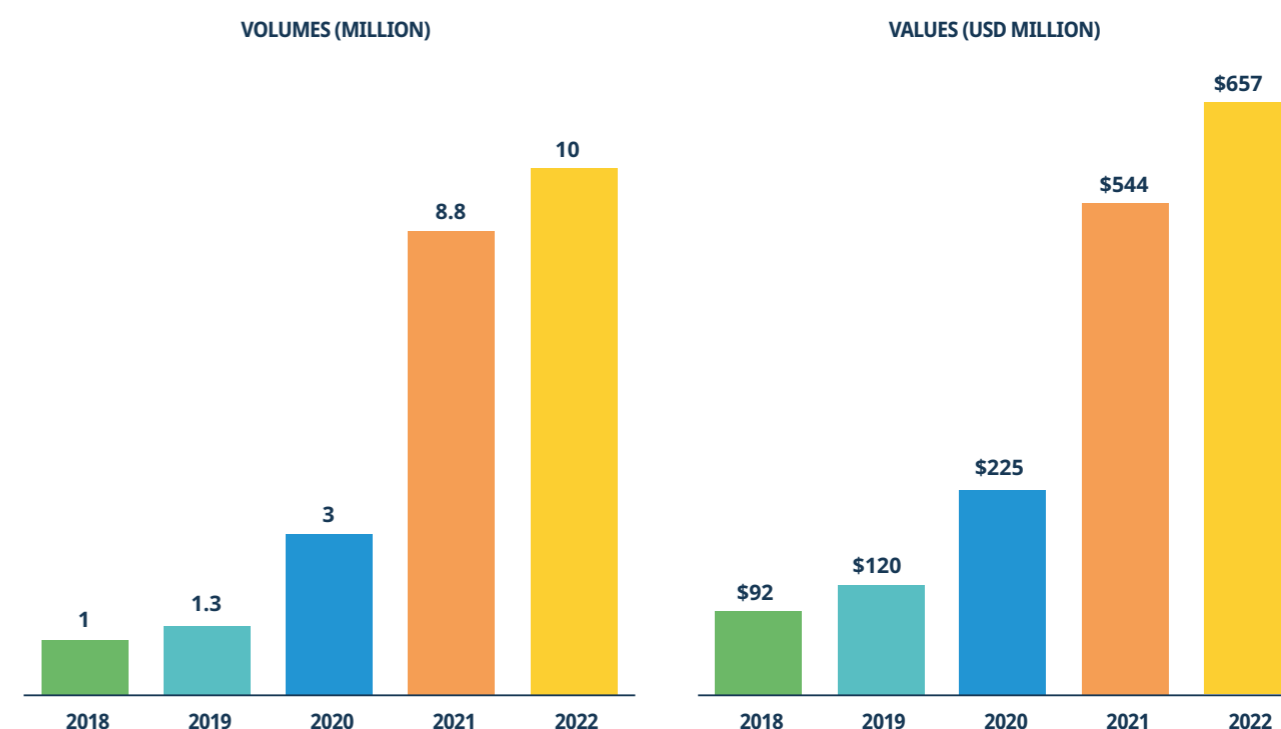


Volumes and values processed by the payment system

Since 2018, GIMACPAY has seen increased uptake by end-users. Between 2018 and 2022, volumes saw a 117% CAGR while values

posted a 93% CAGR. Average annual transaction value declined from \$75 (XAF 45,168) to \$64 (XAF 39,444) in 2022. This shows that end-users are increasingly using the system for lower-value transactions.

FIGURE H.15 | GIMACPAY transaction volumes and values



Source: Stakeholder interviews 2023



Regulation

BEAC fulfills the statutory sovereign function of regulating market structures for payments, including processing technical approvals, requests or authorizations, and payment solutions. Banking regulations set by BEAC apply to the six member states (BEAC 2021). There are four regional institutions that assist BEAC—namely, the regional banking sector regulator (COBAC), the securities regulator, the Central African Financial Market Supervisory Commission (COSUMAF), the task force against money laundering (GABAC), and the Development Bank of Central African States. BEAC's Strategic Plan 2017-2023 included the modernization of the CEMAC's payment system within the framework of policies aimed at increasing the proportion of the adult population with accounts (BEAC 2022). The principal laws on anti-money laundering in the

CEMAC zone are Regulation No. 01/CEMAC/UMAC/CM of 2016 and the CEMAC Currency Exchange Regulation n°02/18/CEMAC/UMAC/CM (BEAC 2016; BEAC 2019). The latter imposed more stringent criteria on the transfer, payment, and settlement of routine business transactions (Norton Rose Fulbright 2019).

In the CEMAC there is a regional central bank, a regional banking sector regulator, as well as country-specific regulations. Although COBAC sets financial services regulations for the region, other regulations, such as data protection and consumer protection regulation, are drafted and implemented at the domestic level by different regulators. This may result in uncertainty, overlap, or conflict between national regulations within the region (Stakeholder interview 2023; Cooper 2018; World Bank 2018).



Inclusivity learnings

Measured by the IPS Inclusivity Spectrum outlined in Chapter 2, GIMACPAY is ranked at the progressed level. In addition to the basic IPS criteria, it enables all-to-all interoperability, and enables access and scheme input by all licensed PSPs. The regional central bank had a

strong positive influence on the creation and roll-out of the scheme and holds a pivotal role in the governance of the IPS. The IPS can advance toward mature inclusivity by supporting the full range of use cases and enabling effective consumer recourse mechanisms.

The following learnings emerged in the design and rollout of GIMACPAY:

- **Conducive regulatory frameworks are key for an inclusive IIPS ecosystem.** The BEAC mandated interoperability and requires all PSPs to connect to an interoperable switching platform to maximize accessibility for users. Moreover, foundational policies, such as BEAC's mission to create a cashless society, play a vital role in shaping the regulatory landscape. Such policies define the regulations PSPs must comply with, and which promote financial inclusion, consumer protection, and innovation. Overall, robust regulatory frameworks are crucial for creating an instant payment ecosystem that is secure, reliable, and accessible to all.
- **The proliferation of multiple overlay services and channel offerings enhance access and adoption of digital payments.** The availability of a broad spectrum of channels owes much to the widespread participant ecosystem. The emergence of GPay QR code overlay service has further streamlined merchant transaction, eliminating the upfront incentives in POS hardware for merchants to accept payments. Moreover, the increase in transactions along with the new additions to the system indicate that end-users are increasingly using the system for lower value transactions.
- **The regional central bank played a critical role in establishing the IPS.** BEAC holds a majority share in the IIPS and largely funded its development. This was necessary given competing payments projects at the time that made PSPs reluctant to contribute. The central bank ownership creates a steady foundation for the IIPS participants across the region and contributes to its status as a public utility for end-users.
- **Providing domestic and regional instant payment functionalities enhances system scalability.** Although termed a regional IIPS, GIMACPAY also provides domestic IIPS functionality to end-users in CEMAC member states. This fills an important functionality gap in the Central Africa region and allows for a consolidation of scale, ultimately leading to the lowest possible per unit transaction costs.

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