

# INTEROPERABILITY IN DIGITAL FINANCIAL SERVICES

Emerging Guidance for Funders

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## **ACKNOWLEDGMENTS**

CGAP is grateful to the reviewers who provided comments on earlier versions of this Technical Note: Amani Itatiro (UNCDF); Anant Nautiyal (GSMA); George Muga (FSD Uganda); Gisela Roth (SECO); Harish Natarajan, Holti Banka, Nilima Ramteke (World Bank Group); Irina Eichenauer and Lisa Stahl (KfW); Kosta Peric, Miller Able, Matt Bohan, Dilwonberish Abera (Bill and Melinda Gates Foundation); Paul Nelson and Taha Gaha (USAID); and Sheila Okiro (African Development Bank). Thanks also go to the authors and contributors to the CGAP Technical Guide “Building Faster Better: A Guide to Inclusive Payment Systems”, which this Technical Note accompanies.

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# EXECUTIVE SUMMARY

**D**IGITAL PAYMENTS—THE TYPE OF SERVICE PROVIDED BY M-PESA IN Kenya, PayTM in India, or PayPal in other markets—can help poor people enter the world of formal financial services. Instant payments are digital payments that are processed in real time, available 24 hours a day and often low in value.

Interoperability increases the value proposition of these payments by increasing customer convenience: it allows customers to make payments and transact more easily with others, no matter which service providers they use. In the absence of interoperability, customers must go through complicated and costly work-arounds when transacting with users of different service providers.

Interoperability may also bring value to providers and the financial system overall by encouraging competition and leading to improvements in the range of payment services, reducing distribution costs and enabling economies of scale that may contribute to the financial viability of the payment service.

However, developing interoperable payment systems is a complex and often contentious process, and interoperability remains largely absent from the digital services used by low-income customers today. A common misperception about payment interoperability is that the only thing needed is the technology infrastructure, or “switch”. In reality, three elements are essential to the success of an interoperable system:

1. A clear and fair governance model that balances cooperation with competition among providers;
2. Economic arrangements that incentivize all stakeholders to fully participate;
3. Operational models, including the technology infrastructure, that safely and reliably connect providers.

There is no one system to enable interoperability. A system that is successful in one market might not work in a different one—and vice versa. Participants may vary, from all payment providers to subsets of them. Economic arrangements may be different, to adapt to providers’ business models. The technology infrastructure may also vary, depending on existing infrastructure and requirements. However, experience shows that a participatory process can help to ensure success. Where providers contribute to defining rules, they are more likely to work toward, rather than against, the goals of the system.

Funders may support this participatory process. Their interventions and partners will vary according to context, from advocating for interoperability to collecting more evidence on its impact, or facilitating the collaborative process to supporting specific financial system actors. Funders may seek to partner with regulators, industry associations, or payment and other financial services providers.

This Technical Note aims to help funders understand the concept of interoperability, how instant payment systems can advance financial inclusion, and what funders can do to support their development. This Note builds off the CGAP Technical Guide, “Building Faster Better: A Guide to Inclusive Instant Payment Systems,”<sup>1</sup> which gives a more detailed perspective of instant payment systems.

1. Cook, William, Dylan Lennox, and Souraya Sbeih. 2020. “Building Faster Better: Instant Payment Systems and Interoperability in Digital Financial Services.” Technical Guide. Washington, D.C.: CGAP

## SECTION 1

# INSTANT PAYMENTS AND INTEROPERABILITY MATTER FOR FINANCIAL INCLUSION

**P**AYMENTS SERVICES ARE AN IMPORTANT PART OF THE OVERALL RANGE of financial services. They can facilitate access to other financial services and be critical to the efficient provision of these services.<sup>2</sup> Many consider payment services, together with accounts, to be the onramp to financial services for poor people.

Payments services have many use cases, including remittances (person-to-person transfers); bulk transfers, such as salary payments or social transfers; merchant payments; and cash deposit and withdrawal (Box 1). They affect the daily lives of poor people in many ways. For instance, they allow migrants to instantly send money to a sick relative in another part of the country. They allow retailers to seize early morning opportunities in the market without having to look for cash. Digital payment services have been developed both to address the limitations of cash as a payment instrument and to provide new opportunities for increased speed, safety, convenience and other relevant features in a rapidly changing world.<sup>3</sup>

Of all the different forms of digital payments, instant payments most closely resemble the experience of cash. Instant payments are digital payments that are processed in real time and are available 24 hours a day, 365 days a year, with funds made available immediately for use by the recipient.<sup>4</sup> They are often low-value, high volume transactions,<sup>5</sup> and allow money to be immediately transferred and received at a retail counter or from a distance.<sup>6</sup> Instant payments often use mobile as a channel, like the services offered by M-PESA in Kenya, bKash in Bangladesh, Movii in Colombia, or the financial institutions that use India's Unified Payments Interface (UPI).<sup>7</sup> These payments occur between two stores of value, which can be deposit accounts issued by banks or e-money accounts issued by banks or nonbanks.

2. CPMI (Committee on Payments and Market Infrastructure). 2016. "Payment Aspects of Financial Inclusion." Bank for International Settlements and World Bank Group

3. CPMI 2016

4. CPMI (Committee on Payments and Market Infrastructure). 2020. "Payment Aspects of Financial Inclusion in the Fintech Era". Bank for International Settlements and World Bank Group

5. Low-value, as opposed to large-value, payments: typically low-value transactions are generated in high volumes, such as for the purchase of goods and services and payments between individuals; large-value payments are typically exchanged between banks and other participants in the financial markets.

6. Instant payments sometimes are called fast payments or real-time payments.

7. UPI is an overlay service that leverages India's interbank payment scheme to enable instant payments by improving addressing and enabling omnichannel transactions and third-party initiation.

### BOX 1. Use cases for payments

Many instant payment systems initially have focused on enabling interoperability for remittances, but there are multiple types of transactions to consider:

- **Remittances** (person-to-person transactions). Domestic or cross-border transfers between accounts owned by individuals, such as payments between family members and friends.
- **Bulk transfers**. Transfers from a single sender to multiple recipients executed at a single time, such as for salary payments or government-run social welfare programs.
- **Merchant payments**. Transfers from an individual to a business account, such as for in-store purchases, e-commerce, or bill payments.
- **Cash deposit and withdrawal**. Transfers via an access point to add or remove funds from an account, such as cashing in or out with an agent.

The value proposition of digital services is improved for customers when these services are interoperable—when they work together rather than in silos. Interoperability allows customers to transact outside the network created by their own financial services provider (FSP). This might mean sending money to a friend who has an account with another provider, paying at a merchant acquired by another provider, or withdrawing funds from the agent of another provider. Absent interoperability, customers create difficult and costly work-arounds to achieve the benefits interoperability brings. For example, they may transact with individuals who are customers of different services by maintaining accounts with multiple providers, using an agent to intermediate through an over-the-counter transaction, or reverting to cash. Customers value the increased convenience that interoperability brings to their day-to-day payments (BFA 2018). Interoperability makes financial services more convenient for customers and encourages them to do more transactions.

Interoperability also could encourage FSPs to innovate and compete on the level of services they offer.<sup>8</sup> Without interoperability, customers often choose the same provider that their friends, suppliers, or clients use so that they

can directly transact with them. This approach has the potential to create dominant players in the market. In an interoperable marketplace, customers are more likely to choose a service provider based on value proposition, quality of customer service, and pricing rather than the provider's customer base.

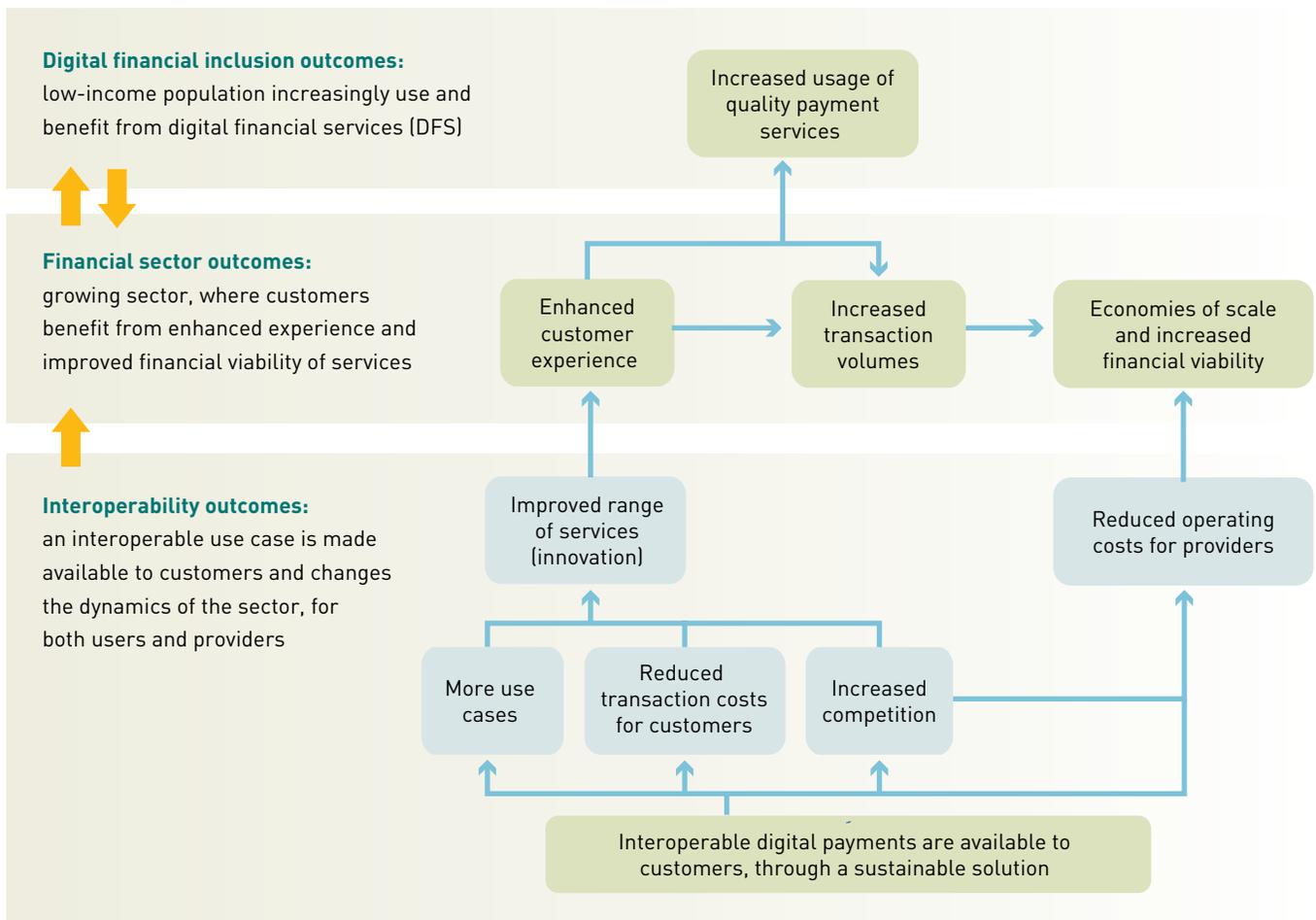
Beyond better customer convenience, interoperability also may generate economies of scale and growth that help ensure the financial viability of the payment service, which may remove some barriers to entry for smaller providers.<sup>9</sup> Interoperability may reduce the need for individual providers to replicate distribution networks where these access points already are in place. Interoperability also may incentivize providers to develop collaborative tools, such as fraud monitoring and anti-money laundering and combatting the financing of terrorism (AML/CFT) checks, thereby lowering operating costs.

For these reasons, instant payment interoperability can promote the availability and use of payment services by low-income customers, thereby advancing and sustaining financial inclusion. The theory of change (ToC) in Figure 1 summarizes the pathway for how an interoperable use case can lead to increased digital financial inclusion:

8. CPMI 2016; World Bank. 2012. "Developing a Comprehensive National Retail Payments Strategy." Washington, D.C.: The World Bank

9. CPMI 2016; World Bank 2012

FIGURE 1. Simplified pathway from interoperability to financial inclusion



- Interoperability promotes competition, reduces provider costs, and leads to improvements in the range of services available to customers.
- This sets the foundation for improved customer experience, sector growth, and strengthened payment system financial viability, delivering financial sector outcomes.
- Improved customer experience leads to increased use of instant payment services or financial inclusion outcomes, and launches a virtuous circle where financial inclusion flows from and reinforces financial sector development.

Parts of this pathway, such as improved customer experience, is evident in markets where interoperability has been introduced.<sup>10</sup> However, there is less evidence that demonstrates the link between instant payment systems and improved competition or reduction in provider costs. Evidence on cost reduction is limited in part because many instant payment systems have started with a focus on interoperability between accounts rather than on use cases that directly affect distribution networks, such as agent networks or merchant acquisition. While anecdotal evidence, such as the increase in the number of third-party payment initiation providers in India, suggests that interoperability improves competition, more research is needed. Funders may play an important role in testing and improving this theory of change.

10. BFA. 2018. "Tanzania Interoperability Post-Implementation Review." Boston: BFA.

## SECTION 2

# KEY COMPONENTS OF INSTANT PAYMENT SYSTEMS

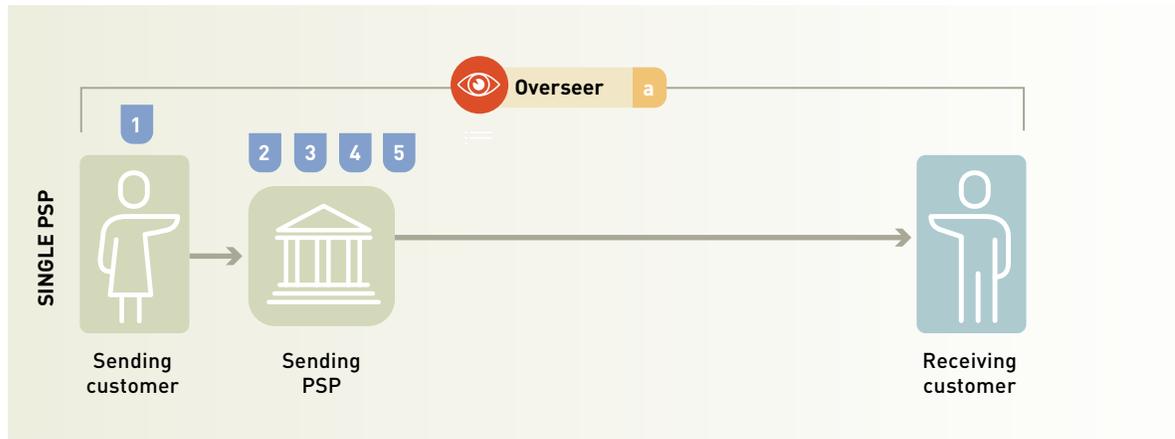
**A** PAYMENT SYSTEM IS A SET OF INSTRUMENTS, PROCEDURES, AND rules for the transfer of funds between participating FSPs. Providers can participate in the system directly or indirectly by passing their transactions through a direct participant.

Effective interoperability requires filling four functional roles. These roles can be performed by a variety of actors depending on the context.<sup>11</sup>

 <b>OVERSEER</b>	Promotes the safety and efficiency of payments through monitoring and assessing the payment system and inducing change when necessary. In addition to the regulator that oversees payment systems, which typically is the central bank, other bodies that regulate, for example, competition, market conduct, cybersecurity, or data protection also may be involved.
 <b>SCHEME MANAGER</b>	A scheme is a set of rules, procedures, and technical standards that define how interoperability will be managed and how payments will be executed. The scheme manager is the ultimate decision maker for the scheme, subject to regulation and oversight. Rules may differ by transaction type. As a result, the scheme manager may maintain separate sets of rules for different transaction types. Scheme managers may be public or private entities, for profit or not for profit, or the regulators themselves. (See Box 2 on roles of regulators).
 <b>SWITCH OPERATOR</b>	The technology infrastructure, or switch, supports clearing—transmission and confirmation of transaction data between providers—in accordance with scheme rules. It also can provide a range of other services to the scheme, such as payment addressing, dispute management, fraud monitoring, and AML/CFT checks. Many different terms are used to refer to the switch operator infrastructure, including clearinghouse, payment system operator and hub. But all describe a similar role. The switch operator owns and operates the switch. This entity may be the same as the scheme manager, a separate for-profit or not-for-profit entity, or it may not exist at all if participants directly connect to each other. A switch operator may serve several schemes, even those in different markets.
 <b>SETTLEMENT AGENT</b>	The settlement agent facilitates the final transfer of the funds according to the instructions received from the switch operator. Central banks are commonly chosen as a settlement agent because they typically provide the lowest risk settlement asset (central bank reserves) and often have mechanisms in place to counteract liquidity issues. However, other financial institutions may perform this function, especially where there are indirect participants in the payment system.

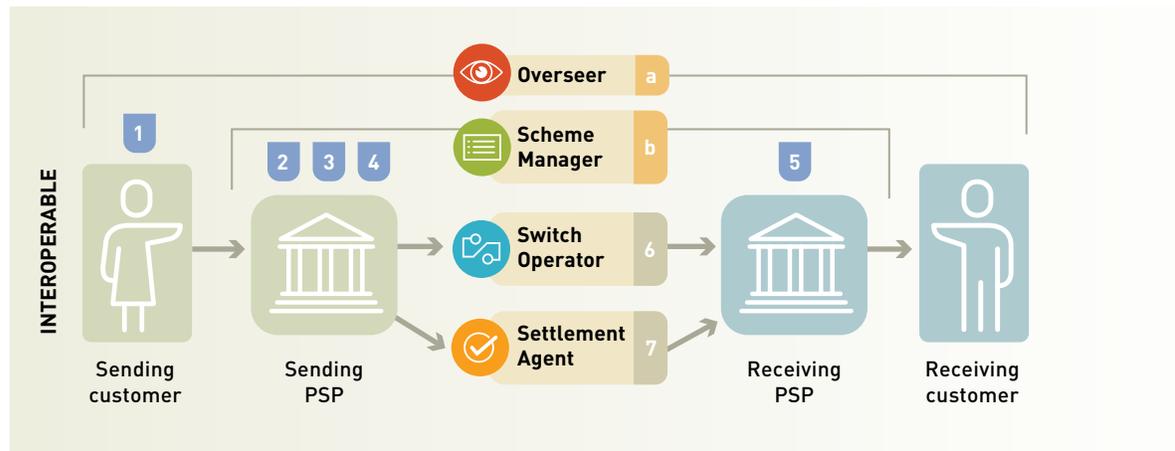
11. For more detailed information on instant payments, including pros and cons of different solutions, see Cook, Lennox, and Sbeih (2020).

FIGURE 2. **Interoperable payment vs. single provider transaction**



Steps in transactions involving a single FSP:

- |                      |                                     |  |
|----------------------|-------------------------------------|--|
| 1 Payment initiation | 3 Authorization                     | 5 Crediting receiving customer account |
| 2 Authentication     | 4 Debiting sending customer account | a Oversight function                   |



Additional steps for interoperable transactions:

- |            |                                    |  |
|------------|------------------------------------|--|
| 6 Clearing | 7 Settlement of funds between FSPs | b Setting and enforcing interoperability rules |
|------------|------------------------------------|--|

## BOX 2. Three key roles of the payment regulator

The Committee on Payments and Market Infrastructure (CPMI) and the World Bank define three key roles for a regulator with respect to payment systems. The regulator's role always includes the oversight function, and it may have an active part in developing or managing the scheme and switch.

- **Oversight.** This is the fundamental role of the payment regulator (the central bank) to promote the safety and efficiency of payment systems.
- **Catalyst.** A regulator may need to encourage industry action in achieving interoperability where market participants have failed to coordinate on their own. This might include initiating a discussion around interoperability or exerting influence to change operating practices where the arrangement has failed to innovate or to be open to other market participants. Many tools—both sticks and carrots, formal and informal—are available to a regulator to help it to be a catalyst for industry action. However, time-bound mandates and other directive guidance should be considered carefully because they may result in suboptimal arrangements. Specific interventions will heavily depend on market context.
- **Operational.** A regulator may need to become directly involved in system ownership or operation. While this may expedite system development, it can introduce new challenges as well, such as lack of buy-in from participants that were not involved in decision-making or less efficiency where the regulator lacks sufficient capacity to operate retail services.

## SECTION 3

# KEY STEPS TOWARD INTEROPERABILITY

**D**EVELOPING INTEROPERABILITY IS A COMPLEX PROCESS, AND THREE elements need to be in place: (i) a clear and fair governance model to balance cooperation with competition among participants, (ii) an economic model that incentivizes all stakeholders, and (iii) an operational model that safely and reliably connects participants.

- (i) Governance model.** To achieve interoperability, competing interests need to be brought together. Competing FSPs will need to clarify and agree on how they will work together, how decisions will be made, and how risks and responsibilities will be shared.
- (ii) Economic model.** Interoperability influences the economics of all stakeholders. Customers might have to pay additional fees, but they should save on costs that they would have incurred had they used work-around alternatives, such as the cost of maintaining several accounts and performing over-the-counter transactions. FSPs will incur new expenses from connecting and processing transactions, but they also should see expanded earning potential (see Box 3). The scheme manager and switch operator will seek to cover their expenses; and if they are for-profit entities, they will want to earn a return. Business arrangements should clarify how cost and revenue sharing will incentivize all these actors to promote, process, and/or use interoperable transactions.
- (iii) Operational model.** Interoperability requires reliable operational models to safely and efficiently transmit information about transactions between participants. This includes the technology solutions needed to support the clearing and settlement functions, as well several services that are needed to run the scheme, from securing office space and administrative support, to questions around marketing and branding, and legal and compliance.

### BOX 3. The impact of interoperability on provider business models

Interoperability can affect a provider's business model—costs and revenues—in many ways. Providers need to have an incentive to participate and to promote interoperability. The following are a few considerations:

- **Impact on revenue.** Interoperability can increase use and bring benefits like new transaction revenues, but these new transactions also may substitute for existing revenues if customers no longer use other products, such as over-the-counter transactions.
- **Impact on cost.** Interoperability may reduce some costs, for example, by decreasing the need to invest in distribution network, but it will increase others, for example, integration costs, changes to core systems, new staff to support the infrastructure, marketing campaigns, enhancing customer care, fraud monitoring, staff training, and switch operator expenses.
- **Impact on liquidity.** Providers will either be net receivers or net senders of funds in that the provider's clients will either receive more payments than they send or send more payments than they receive. While a net receiver of funds might be happy to have the additional liquidity, a net sender can see a shrinking opportunity. Economic arrangements, such as interparty fees between participants, may help balance some of these differences.

In the evolution of instant payment systems, three key steps taken by successful systems have emerged. These steps encourage a collaborative approach among those with a stake in the success of interoperability. Buy-in and consensus are required to establish effective governance, economic, and operational models. These steps may be driven by a variety of market actors from the public or private sectors (see Box 4 for global examples of actors driving the process). But whomever the champion, key issues and milestones are the same.



## STEP 1. Plan

This first step aims to get stakeholders to agree on the problem they are trying to solve or on the opportunity they are trying to seize with interoperability. This is the time to ask: Which use case? Why interoperability? Why now? Instant payment systems are developed for many reasons, including improved competition, market modernization and innovation, and financial inclusion, but underpinning most of these reasons usually is a common goal of improving customer value. One sign that interoperability may sup-

port improved customer outcomes is when market research shows that users maintain multiple accounts or make use of over-the-counter transactions at agents as work-arounds to transact between different FSPs.

Once improved interoperability is deemed to be a relevant and timely answer to the problem, stakeholders should agree on a shared vision, roadmap, and process to ensure they are focusing on the same thing and to get buy in from relevant public and private actors. Market research may be needed to gain a better understanding of market dynamics (e.g., scale, distribution, competition, product diversification, outreach), existing regulations and business arrangements, and how interoperability could affect them.

Despite the benefits interoperability brings, not all market participants necessarily will embrace an interoperability initiative. Dominant players may favor the short-term objective of retaining their market share over the medium- to long-term benefits of growing the overall market. At this point, the aim is to clarify how all stakeholders will be incentivized to take part in the process and actively participate in the eventual solution.

Resources to complete the process also should be identified at this stage. They may include identifying a champion to galvanize stakeholders, a facilitator to broker discussions, and technical expertise (legal/regulatory, business model, settlement, etc.) to assess the situation and propose solutions. The champion often is a market stakeholder, such as the scheme manager, an industry association, or the payment systems regulator. The facilitator could be a market stakeholder, including the champion, or an independent organization, but the facilitator should be a neutral and trusted party capable of helping competitors define how they will work together for the benefit of all.



## STEP 2. Design

In the design phase, the interoperability arrangement is defined, and the connecting technology is selected. The legal entity that will manage the scheme, and possibly operate the switch, will be identified or newly established. This entity will be a vehicle for ongoing changes to governance and the ultimate decision maker on questions related to the scheme, within the guardrails set by legal and regulatory oversight.

Key questions surrounding the scheme governance, business arrangements, and operational model are answered during this phase. Starting with setting basic principles (e.g., is this model for profit-making or costs-recovery?), this phase aims to clarify the governance model (e.g., ownership, decision-making rules, and membership criteria), the economic model (e.g., expected costs and sources of revenue, process to set fees for customers), and the operation model (e.g., branding, clearing, and settlement).

The starting point for design depends on the market and project. For example, a project led by a group of banks that are operating a domestic card scheme may have already addressed questions of legal entity and institutional governance, whereas a project catalysed by a regulator or initiated by a payment association may need to address some of these foundational questions.



## STEP 3. Go-to-market

In this phase, the agreed design is implemented and the service is made available to customers and improved over time. The complexity and the time needed to implement the system will vary. If a new technology is being implemented, it may take more than a year to offer interoperable payments to customers.

Providers finalize their value proposition and seek to maximize the experience of their customers: design a clear and simple process for customers to learn about, access, and use the interoperable service. A complex process may deter customers who have low levels of digital literacy.

The launch date may be based on when all participants are technically and operationally ready or the launch may be staged according to the readiness of different participants. Once the launch date is estimated, stakeholders will design their go-to-market plan and marketing campaigns as needed.

After launch, the scheme owner and participants should track performance closely and make improvements as needed. Are interoperable transactions taking off? Are customers satisfied? Where scale is not being achieved, earlier steps in the process, such as the scheme governance or business arrangements, may need to be revisited. Where services are running smoothly, most successful instant payment systems continue to drive innovation. Expanding services is necessary to remain relevant in a fast-moving payment landscape. Expanding services might mean opening to new types of participants or different transaction types (e.g., cross-border transactions) or connecting to other systems.

#### BOX 4. Global examples

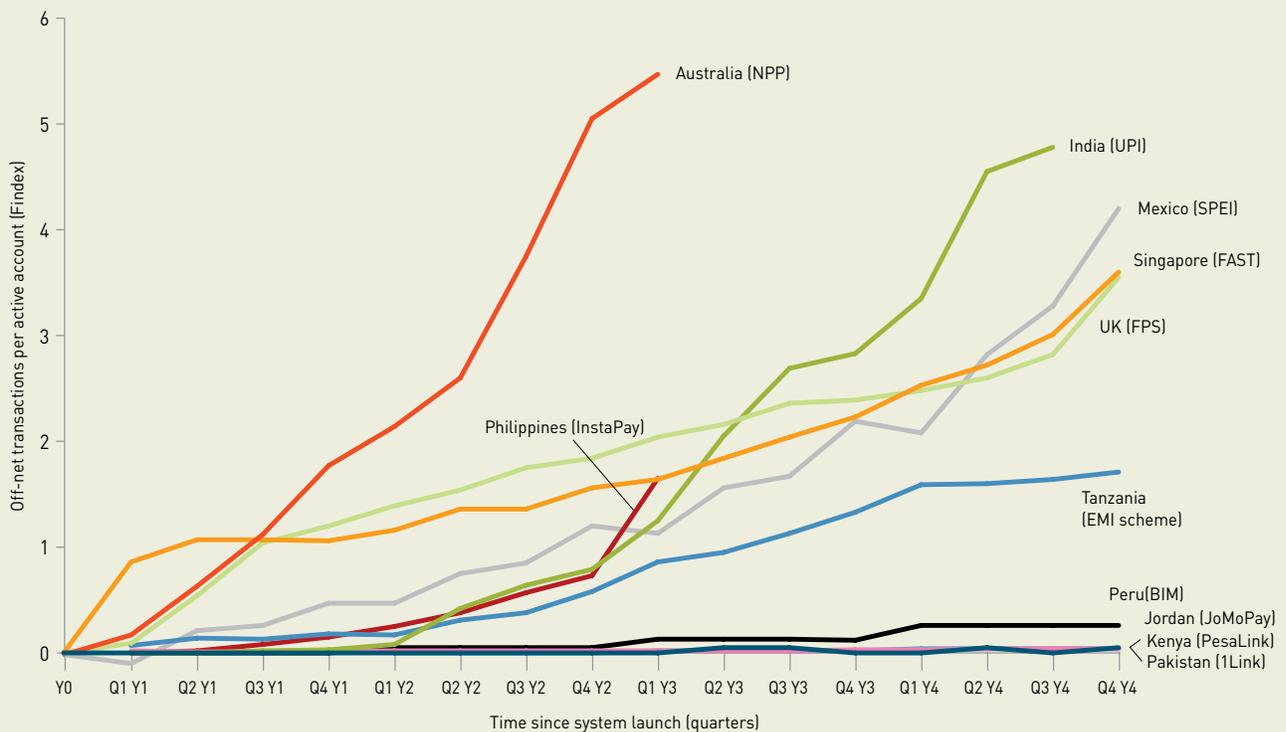
CGAP studied the experiences of instant payment systems in different markets around the world. The following section explores the experiences in Australia, India, Jordan, Mexico, Peru, the Philippines, and Tanzania. These examples were selected because they represent a variety of models and approaches.

The volumes of interoperable transactions in these examples and those of some other popular payment systems are shown in Figure 3 over the first four years of operation. It is important to note that a successful solution in one market might not work in a different one.

#### NEW INSTANT PAYMENT SYSTEMS

- AUSTRALIA: NPP.** An industry-led approach to a new system for instant payments, where the regulator acted as a catalyst to encourage industry action. A new industry-owned not-for-profit entity was formed, with the regulator holding a minority stake. The system adopted a unique distributed architecture with no central switch and settles through a new real-time facility operated by the regulator.
- PHILIPPINES: InstaPay.** An industry-led approach to a new system for instant payments, where the regulator acted as a catalyst but also played a more

FIGURE 3. Instant payment system transaction volumes (interoperable transactions) across countries



Note: This graph shows the evolution over the first four years of operation in each market. Mexico shows new volumes only from the time SPEI began offering near real-time and continuously available payments in 2015.

Source: Cook, William, Dylan Lennox, and Souraya Sbeih. 2020.

direct role in facilitation and governance. A new industry-led payment association was formed to manage aspects of governance not defined by the regulator. A separate switch operator was designated. Settlement is performed on a deferred-net basis through the real-time gross settlement (RTGS) system operated by the regulator.

- **JORDAN: JoMoPay.** A regulator-led approach to a new system, where the regulator acted to develop the solution, manage scheme governance, and operate the switch. The regulator later transferred these activities to a newly created bank-owned entity in which the regulator has a minority stake. Both before and after the system handover, transactions are passed through the JoMoPay switch with settlement on a deferred-net basis through the RTGS system operated by the regulator.

#### **INSTANT CAPABILITIES ADDED TO EXISTING PAYMENT SYSTEMS**

- **INDIA: UPI.** An existing, industry-owned operator that expanded capacity to provide instant payments. The National Payments Corporation of India (NPCI), the industry-owned entity managing retail payment systems in India, began with card operations and soon moved into supporting instant payments through the Immediate Payments Systems Service (IMPS) and later UPI. NPCI used existing technology assets to support UPI, but soon invested in new switching technology. Settlement occurs on a deferred-net basis through the RTGS system operated by the regulator.

- **MEXICO: SPEI.** An existing, regulator-managed system that expanded capacity to provide instant payments. Sistema de Pagos Electrónicos Interbancarios (SPEI) is the regulator-owned real-time gross settlement (RTGS) system in Mexico, which also supports retail payments. Over a series of upgrades from 2005 to 2015, the regulator added near real-time functionality and continuous availability to the retail transactions supported by SPEI. Settlement occurs in near real time on the same system in small batches.

#### **UNIQUE APPROACHES TO INSTANT PAYMENTS**

- **TANZANIA: MNO-led e-money arrangement.** An industry-led approach where a group of e-money issuers created by mobile network operators (MNO) developed a new multilateral arrangement. Terms were defined in a set of shared scheme rules, but no separate legal entity was formed. Bilateral technical connections enabled clearing of transactions, and prefunded positions on counterparty platforms enabled settlement.
- **PERU: Bim.** An industry-led approach to a new arrangement, where a group of FSPs agreed to co-invest and share a single mobile wallet platform. No separate technical arrangements are required for clearing. Settlement occurs on a deferred-net basis on the RTGS system operated by the regulator.

## SECTION 4

# HOW CAN FUNDERS PROMOTE INTEROPERABILITY?

**F**EW DIGITAL PAYMENT SERVICES USED BY LOW-INCOME CUSTOMERS are interoperable today. Funders aiming to support the development of interoperable use cases for low-income customers should start by understanding the state of payment systems in the countries they are involved. Is it clear why interoperability may be a solution? What problem would it solve? Are there market opportunities for making payment systems interoperable? Are relevant actors engaged and committed to a collaborative process (Step One)? Have governance rules been agreed to and business arrangements designed to incentivize participation? Have operations been designed to safely and efficiently connect participants (Step Two)? Answering these questions will help funders prioritize their interventions.

Funders should also start by identifying other funders with whom they might **coordinate**. As payment systems become interoperable, they can contribute to goals beyond financial inclusion, such as financial stability, digital inclusion, government digitization or regional integration. These goals usually are managed by specific teams within funders. Financial inclusion funders may not be the only teams supporting interoperability projects. These other teams may also be working with different market actors, such as different government units, regulators or private sector actors. Collaboration across funders and among various teams within a funder agency can be valuable to avoid duplicating or even negating efforts.

To take on interoperability projects, funders also need to be **flexible** and to make a **long-term commitment** to the project because interoperability initiatives are not simple or linear. Depending on the type of intervention, funders also are likely to need local expertise.

As outlined in “A Market Systems Approach to Financial Inclusion: Guidelines for Funders”,<sup>12</sup> any intervention should be part of a detailed **theory of change** to clarify how the intervention(s) might contribute to the expected interoperability, financial sector and financial inclusion outcomes. Figure 4 provides a generic theory of change for interoperability projects that funders can adapt to specific context.

12. CGAP. 2015. “A Market Systems Approach to Financial Inclusion: Guidelines for Funders.” Consensus Guidelines. Washington, D.C.

Funders can get involved in interoperability initiatives in several ways, including interventions that are described below and reflected in the generic theory of change.

## Support the process

- **Support the cost of technical expertise and convening** (needed for all steps of the process). This typically is in the form of a grant, although some funders might have the expertise to act as facilitator or technical experts themselves. For instance, in 2015, the International Finance Corporation facilitated a process with funding from the Bill & Melinda Gates Foundation that led e-money issuers in Tanzania to create an industry-led interoperability scheme.<sup>13</sup> Technical expertise, convening, and facilitation will be needed all along the process, even possibly when the scheme is launched to improve and scale services.
- **Cover the costs of market research** (Step 1). Research, such as reviews of payment infrastructure, market demand, customer use of interoperability alternatives, and competition, might be needed to assess the situation and better define the problem. Funders could help cover these costs through a grant, for example.
- **Be advocates to initiate the process when appropriate** (Step 1). Funders can advocate for how interoperability might address constraints to financial inclusion, for example, by sharing lessons learned on interoperability with various market actors such as regulators and providers or organizing visits to countries with successful solutions that may offer insights. Funders can be active advocates even when they do not plan specific interoperability projects. For instance, investors with equity stakes in payment providers can actively promote interoperability use cases and encourage their investees to play an active role in testing and assessing interoperability. Donors working with governments or central banks on national financial sector strategies or regulations could advocate for dialogue on interoperability.
- **Support the switch operator** (Step 2). When a scheme design requires a new or improved technology, funders can consider funding the new technology or the upgrade of technology already in place. Equity investments might be an option when the switch is operated by a private sector actor, otherwise grants may be more appropriate. On a global level, funders also can help inform the process of procuring or developing switching technology. For example, in 2017, the Bill & Melinda Gates Foundation introduced an open source switching solution, Mojaloop, as a global reference model and resource to help advance the technology discussion.<sup>14</sup>
- **Promote interoperable services that meet the needs of low-income people** (Steps 2 and 3). An interoperable system needs to be simple and easy to use so that low-income people who may not be familiar or comfortable with technology can have a good customer experience. Funders can work with providers through grants to test different customer experiences. They can work with the scheme owner to emphasize the need to maintain minimum standards of customer experience and transparency. They also can support best practices among participants through training and other resources.
- **Promote customer awareness** (Step 3). Once the interoperable service is available to customers, promotion is key to drive uptake and volume while ensuring that customers understand how the service works and their rights as consumers of the service. The service may be promoted by individual providers, the entity managing the scheme, or independent stakeholders such as civil society and regulators, through nationwide campaigns or through campaigns that target specific groups. Beyond marketing the service, campaigns can promote understanding of fees and complaint and recourse mechanisms. Funders can support these efforts.

13. IFC (International Finance Corporation). 2015. "Achieving Interoperability in Mobile Financial Services Tanzania Case Study." Washington, D.C.: IFC.

14. "What Is Mojaloop?" Majaloop Foundation, [mojaloop.io](http://mojaloop.io).

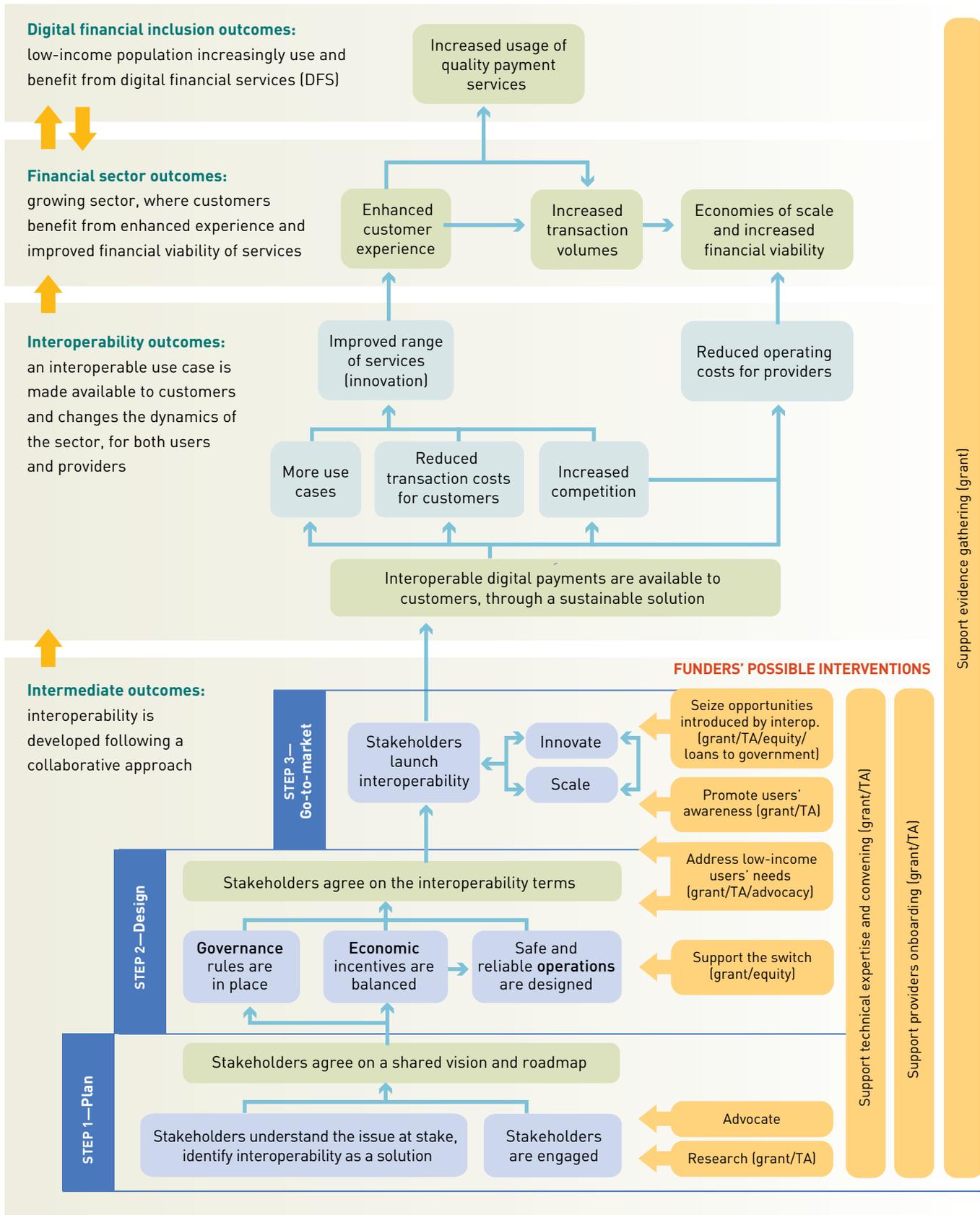
## Support individual actors

- **Support the onboarding of payment providers into the system.** Outside the formal process of developing the interoperability solution, participants will have a lot to do, including upgrading core systems to enable them to connect, updating channels and processes, and ensuring customers are aware of the changes. Funders can support these efforts through grants or technical assistance.
- **Help FSPs and other market actors take advantage of new opportunities introduced through interoperability.** Digital financial services providers and other market actors can build on new interoperable services to improve their own value proposition. For instance, the government might want to take advantage of interoperability to improve government-to-person services and enable recipients to choose how they receive the funds. Funders can support this by helping the government assess needs, set requirements, and digitize its own systems. Funders could offer governments grants, technical assistance, and/or loans. For example, the USAID E-PESO program partnered with local government units in the Philippines to expand the use of e-payments in government-to-person and person-to-government payments, which were operationalized through a separate effort to reform payment systems. Where interoperability arrangements support third-party payment initiation, new fintech models may be possible. Funders can use grants and equity to support fintech costs in testing solutions that improve customer experience while ensuring information security.

## Support evidence gathering

As more countries adopt interoperability, more data will become available and they can be used to analyze segments of the theory of change, such as whether and how interoperability leads to increased volume and velocity of transactions; how it affects operating, capital expenses, and revenues of providers; and eventually whether and how it leads to increased quality, use, and potentially access to digital financial services by low-income populations. Funders can support evidence-gathering by intentionally embedding evaluative efforts in the design of their interoperability interventions and by sharing lessons learned. They also can explicitly commission, through grants, full-fledged evaluations at the country level to assess the impact of interoperability on financial inclusion.

FIGURE 4. A Theory of Change for interoperability projects



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