



# Inclusive Instant Payment Systems

■ An Evidence-based Approach from Design to Impact **AUGUST 2022**

## Executive Summary

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# 1. Executive Summary

Inclusive Instant Payment System (IIPS) have the potential to transform the landscape for consumer and merchant payments in emerging markets and spur the transition from cash to digital. They do so by providing a fast back-end interface between financial service providers' (FSPs) transaction ledgers, allowing clients with different FSPs to transact (send and receive funds) near-instantly. By eliminating the risks of delayed transaction clearance, these systems enable several use cases that can increase the attractiveness of digital payment systems.

While several reports have discussed the optimal engineering, design, and regulation of these systems, relatively little has been written about implementing evidence-based policies to promote these systems. We contribute to the global discourse around IIPS by (1) showing how economic insights can help us form expectations around the potential impact of these systems, and (2) providing guidance on monitoring, evaluating, and generating evidence-based policies. We do so by:

1. Outlining a theory of change for how these systems might impact the payments economy, consumers and merchants, economic efficiency, social welfare, and the broader macro-economy;
2. Providing preliminary hypotheses on how these impacts will play out in practice;
3. Discussing unique issues that may arise when undertaking data-driven research on these systems;
4. Reviewing key policy issues around IIPS and how economic insights can help to guide policy decision-making; and
5. Providing a framework for monitoring, evaluation, research, and learning (MERL) in the context of these systems, which organizations can adapt to their own evidence needs.

The white paper is written in a modular format with largely self-contained sub-sections to enable readers to jump to topics and sections of relevance.

### Why do fast, interoperable retail payment systems matter?

Cash remains the payment instrument of choice in many emerging economies, especially for low-income merchants and consumers, who value its full interoperability, privacy, instant clearance, and zero transaction costs. While mobile money and online banking applications have spread rapidly, many low-income consumers have adopted digital payments for remittances and long-distance transactions, but little else. Legacy payment rails are often still associated with a delay of hours or days to transmit funds between two different FSP accounts or wallets, which can hinder use of digital payments between merchants and suppliers. In contexts with weak identity verification and rule-of-law, the lack of capacity to manage delayed transactions and fraud risk creates significant barriers to several payments use cases.

IIPS have the potential to create a more cash-like experience in at least **three broad use areas**, while simultaneously leveraging the virtues of digital transactions: overcoming distance and enhancing security.

- 1. Person-to-Person Payments (P2P):** In many countries, cross-network payments are not possible for mobile money users because telecommunications-based mobile money systems do not have access to bank-oriented payment clearing houses. Even if they do, transfers through the banking system are often slow and expensive. These off-network payment frictions generate various inefficiencies, leaving users to only transact with clients of the same FSP, or to hold accounts with multiple providers (to “multi-home”).
  - IIPS can reduce the frictions to P2P off-network transfers, making payments more efficient.
- 2. Peer-to-Merchant Payments (P2M):** In many emerging markets, cash is dominant for merchant payments at point-of-sale. Digitizing these transactions is difficult in the absence of interoperability, given the coordination costs merchants and consumers face in jointly adopting a new payment technology.
  - IIPS can enable convenient digital payments for merchants without requiring the payer and payee to have the same FSP. This allows for a cash-like experience through payment technologies like QR codes and smartphone payment scans, along with seamless integration with the emerging online shopping economy.
- 3. Government-to-Person Payments (G2P):** Ideally, Governments would be agnostic to their citizens’ financial service provider when it comes to distributing social protection transfers or bond dividends, or collecting payments from tax to public utility fees. In practice, they often need to sign and manage bilateral agreements with multiple payments providers, or mandate recipients to use one or two FSPs. This can potentially deny benefits to citizens without access to government-approved FSPs.
  - IIPS can provide the infrastructure for governments to be fully provider agnostic, maximizing the efficiency and inclusivity of digital government payments.

### Expect the unexpected: hypotheses about the impacts of fast payment systems

It's difficult to make definitive statements about the impacts of IIPS. Such a fundamental change to the financial system rails is inherently complex, and simultaneously structured by and reshaping several economic, social, technological, and political factors. Keeping this in mind, to advance research and evidence-based policymaking we develop a broad Theory of Change that delineates a *process* of potential impact which includes: 1) switch development and launch; 2) to FSP integration and end-user uptake; 3) changes in financial behavior among consumers, merchants, and FSPs; and 4) efficiency gains and welfare effects through macro-economic change. Of course, the process could stall or outright fail anywhere along the way – e.g., low uptake for any reason would reducing downstream effects and overall impact.

What *should* we expect? Again, it is difficult to say definitively, as evidence on IIPS in emerging markets is scarce. We try to generate insights from payment networks that share characteristics with IIPS. For example, M-Pesa has been a highly successful closed-loop mobile money payment network in Kenya, with such widespread adoption ensuring that nearly all consumers and merchants can transact through the network, proxying an open-loop network with multiple providers. But its strength may also be its weakness – while adoption has been remarkable, M-Pesa's near-monopoly hold on the market may have weakened incentives to drive further innovation and reduce costs. Would an open-loop system with multiple competing providers overcome these limitations? The literature on payments systems in more advanced economies, particularly debit and credit card networks, also provides some lessons. Furthermore, we look to the short history (less than five years in most cases) of IIPS in emerging markets. While there have been some notable success stories, such as the catalytic effects of the Unified Payments Interface (UPI) in India, other IIPS have been slower to scale.

Overall, more research is needed. Many issues are likely to be important:

1. Individual adoption of off-net payments: This gets at traditional questions around technology adoption: e.g., pricing, information, digital and financial literacy, social learning.
2. Network effects in adoption: Off-net payments use cases, such as point-of-sale merchant payments, raise coordination challenges (known colloquially as the chicken-and-egg problem)—both consumers and merchants need to adopt simultaneously. Consumers need to be willing to hold digital wallet balances, and merchants to offer them ways to pay digitally and manage their business finances digitally.
3. Impacts: How much should we expect? On the consumer side, is it possible that reducing multihoming will only yield marginal benefits to consumers? Catalyzing the transition from cash to digital merchant payments has the potential to be transformational, but how much does the lack of interoperability matter vis-à-vis other constraints to digitization? Making government payments more efficient should reduce leakage and exclusion, but how transformative could this be?

4. Pricing: How sensitive are consumers and merchants to prices? What is the price elasticity of demand of consumers? What discount rate will merchants be willing to bear for retail payments?
5. Market structure and innovation: Interoperability has the potential to reduce network advantages of incumbent market players. Does this provide opportunities for smaller FSPs and new entrants, such as financial technology companies (Fintechs), to capture market share by offering innovative services and products? How do larger FSPs respond? Does this drive down prices, improving consumer welfare?

### Key Issues for Policy

We highlight four key policy areas where economic insights and analysis can add value to the discussion around IIPS:

1. What to build and when. Interoperability can level the competitive field between FSPs. In general, more competition should be better for consumers, lowering prices and driving innovation, and for new entrants who could immediately access a large customer base. However, interoperability can act like a tax on the infrastructure of incumbent FSPs, forcing them to share mobile money agents, branches, and other payments processing infrastructure. This can reduce their incentive to expand financial inclusion; for example, they might be less likely to build out mobile money networks in more remote areas if their agents will be processing transactions for all FSPs. Hence, policymakers need to think carefully about when and how to bring about interoperability. Too much, too soon, could weaken providers' incentives to invest in building out financial services infrastructure.
2. Spurring adoption. Once a payments switch rolls out, policymakers want to spur adoption of off-net payments and associated use cases, such as interoperable QR-based merchant payments. Is awareness-raising enough (e.g., public marketing campaigns), or is it better to focus on encouraging providers to use their resources to build out and market use cases? Leveraging the energy of the private sector requires getting the incentives right and giving them real voice in the governance of the new payments system.
3. To price or not to price? A key question for regulators is whether they should control off-net payments pricing (the fee that FSPs charge users to send a payment between two FSPs' user networks) and merchant payment fees. The consumer-centric approach seems to be to cap or even "zero price" these fees. However, by squeezing FSPs' margins, such restrictions can backfire by reducing the incentives of providers to provide and promote payments services, e.g., acquiring merchants in the P2M use case. If consumers are not too sensitive to these fees, restrictions might not even make much difference for financial inclusion. Regulators may need to consider whether they want to encourage a payments ecosystem in which FSPs derive significant revenue from processing payments, or in which low-price or free fast payments provide a platform for other value-added services.

4. Governance. How should power over switch management and development be allocated? Should it be centrally-controlled, like a public utility, or should there be strong financial services industry leadership, with the government mainly providing regulatory guardrails? The answer to this question can vary over the lifetime of a switch.

#### Adding to the Tool Kit: Measurement and Research Design

Research on IIPS adds additional complexities to existing research challenges around digital financial services (DFS) and the market for payments.

Researchers studying DFS are already well-acquainted with the challenges of measuring the usage of DFS. It is typically ideal to receive objective, administrative data on payments usage directly from an FSP, subject to first obtaining informed consent from the respondents. We call this **centralized** data access. However, it can be difficult to access such datasets due to privacy regulations and finding a willing FSP partner. Accessing centralized data can be even more challenging if researchers are provider-agnostic and hence would either need to form agreements with multiple FSPs or access data from a centralized entity that collects data from multiple providers.

Hence, we also discuss potential **decentralized** solutions to collect payments usage data. One approach would be to survey users about their financial transactions, but this might suffer from significant recall error. If we collect data more frequently to mitigate recall error, it is more costly and may bias users' behavior as they are reminded that their digital payments activity is being monitored. We discuss alternative, less invasive decentralized solutions like working with users to download their financial transaction records from their transaction interface, or installing passive data collection apps, though these possibilities need more field testing.

Research on off-net payments sits at a fascinating intersection of research on DFS in emerging markets, and market- and platform-level research analysis that falls under "industrial organization" (IO). We advocate for the use of the best available research methods to address causal research questions – typically impact evaluation methods like randomized controlled trials and quasi-experiments. However, we also recognize that introducing a payments switch is a financial system-level change that is not directly amenable to randomization over individual treatment units. Hence, we advocate for fruitful combinations of techniques from both toolkits. For example, using impact evaluations to tell us about behavioral responses at the individual consumer or merchant level, and then embedding those behavioral parameters into models that can help us analyze market- platform- and economy-level outcomes.

#### If You Don't Measure it You Can't Improve it: Monitoring, Evaluation, Research, and Learning (MERL)

We advocate for every switch implementation to include a suitable strategy to monitor and evaluate progress, learn, and make improvements. While it is easy to get consumed



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with engineering, onboarding, adoption, and governance challenges, we recommend that implementers take time to think through how they define success, potential red flags and early warnings of unintended consequences, and the real-world impacts they would like to achieve, and use that to develop a set of indicators that can be feasibly measured and reviewed on a regular basis. We recommend that the process of creating such a strategy gives voice to all relevant stakeholders.

We provide a template for a MERL strategy, including:

1. An overall workflow to develop the strategy, including workshops with key stakeholders;
2. Guidance on how to develop a Theory of Change;
3. Guidance on how to identify learning questions, key performance indicators, and data collection approaches;
4. While the preceding step can generate a plethora of indicators and possibilities, we recommend using the Credible, Actionable, Responsible, and Transportable (CART) approach to narrow the options;
5. Tips on developing the MERL Plan;
6. Tips on executing the MERL Plan.

Implementers should feel free to use and adapt any of this content to inspire and guide their own MERL journey.

