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Optimizing interoperability:

Lessons from Instant payment systems across 12 Jurisdictions

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Contents

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Executive summary

Objectives: Accelerated by the effects of the Covid pandemic, instant payment systems (IPSs) are proliferating around the world. How do we know when they are effective? And what steps can policymakers and regulators take to ensure that an IPS actually achieves its policy objectives, like advancing greater financial inclusion?

Sample and methodology: BFA examined sixteen IPSs from 12 jurisdictions which represented a diversity of ages, stages of maturity, and regulatory approaches in order to consider answers to these driving questions. The approach included stakeholder interviews and assessments with regulators, system operators and participants in each case.

Measuring outcomes: The IPSs in our sample varied in their outcomes to date, just as they do in their ages and in the motivations for their establishment. Volumes of transactions per capita adjusted for age of the system correlated reasonably well to more judgment-based assessments of outcomes based on opinions expressed by stakeholders and on experts.

Link to greater inclusion: The introduction of IPSs can increase usage of digital payments among existing payment account customers. However,there is no guarantee of this outcome. Rather, greater usage results from conscious decisions to harness the incentives of payment providers to participate and to promote instant payment instruments in ways accessible and affordable to target customers.

Effect on competition: The introduction of interoperability has not (yet) challenged or changed dominant market positions in all the jurisdictions surveyed. However, competition issues in payments go well beyond access to payment schemes and participation in their governance, and may well depend on decisions in other regulatory areas.

Role of the financial authorities in IPSs: Successful schemes demonstrated the importance of the role of a financial authority, often but not always the central bank, both as a visionary (set the guiding star) and as the ultimate enforcer which balances the autonomy and accountability of payment providers to create sustainable solutions. Authorities In markets that met and exceeded expectations took active steps by providing a clear vision or framework, facilitating studies, actively convening players to solve for interoperability, actively monitoring progress and aligning actions by providing nudges, threats and incentives. This engagement process appeared like a dance, where the authorities act like the lead dancers with the participants.

Principled frameworks for IPS: The Level 1 Principles for inclusive digital finance have stood up quite well in the experiences of our sample of payment schemes although there are opportunities to update and extend the original guidance especially in the light of further evidence about governance practices leading to greater inclusion.

Recommendations: First, on the international level, there is a need for consistent tracking of various measures of IPS adoption and traction. Second, we would recommend that donors require an ongoing monitoring process to be built into the design process. for financial authorities considering whether and how to promote the development of an IPS in their jurisdiction: we would recommend careful consideration of the incentives of institutions to participate; and also which institutions are capable of participating. This analysis should certainly happen before issuing any mandate to require participation.

Context

Instant payment systems — real-time and available 24/7 -- facilitate the types of small-dollar, mobile payments most frequently used by low-income customers. The Covid pandemic has accelerated the trend towards establishing instant[1] retail payment schemes around the world. A 2021 ACI report on instant payments (available here) succinctly summarizes the change: "As recently as two years ago, a national real time payments infrastructure was considered a luxury in many markets. That all changed in 2020." In fact, an instant payment system (IPS) is now considered part of a nation's digital public infrastructure, necessary for an equitable recovery from the pandemic.

The BIS released a report in December 2021 showing that more than 60 jurisdictions have now set up an IPS, twenty years since the first one in 2000, with more countries planning IPS implementations. In fact, the shape of the adoption curve for instant payments so far looks similar to that of Real Time Gross Settlement systems twenty years ago: in 2000, around 60 countries had RTGS implementations, but this number has more than doubled such that today, most nations now have one. By 2030, it is plausible that a majority of nations may also have an IPS.

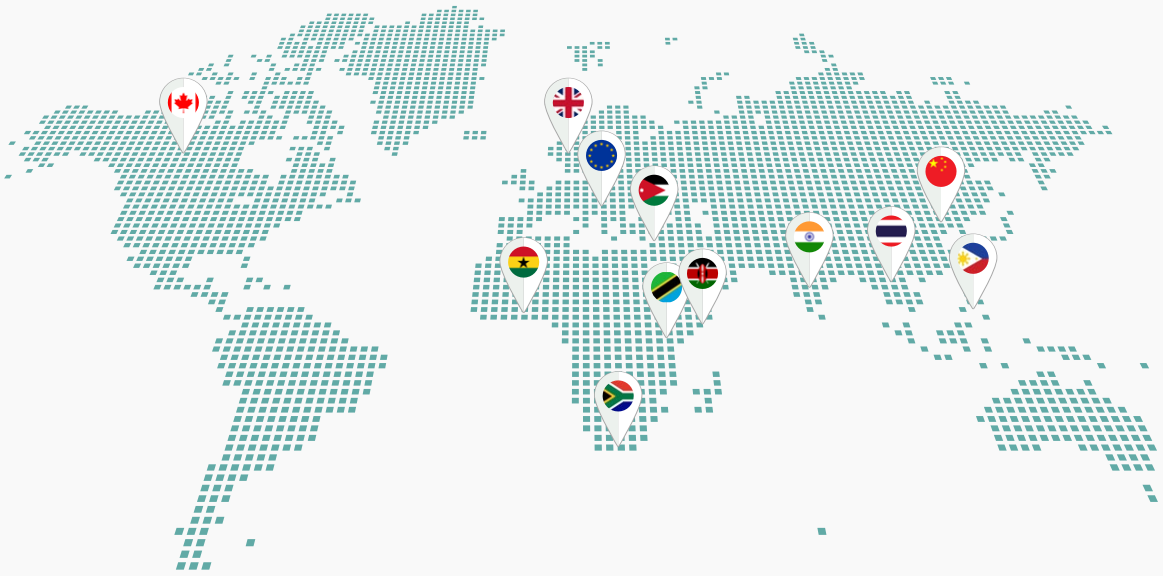
In this context of increasing adoption of IPS, how do we know when they are effective? And what steps can policymakers and regulators take to ensure that an IPS actually achieves its policy objectives, like greater financial inclusion?

BFA Global, commissioned by the Bill & Melinda Gates Foundation, has just spent over a year considering such questions. To get answers, we consulted the burgeoning literature on IPS implementations of this type, including the World Bank's useful 2021 publication on Implementation Considerations available here and CGAP's valuable 2021 Technical Guide to Inclusive Instant Payment Systems. BFA then examined in detail thirteen IPSs[2] as shown on the map Figure 1 below. These IPSs represented a range of older implementations such as the UK's FPS (2008) and South Africa's RTC (2006), and newer ones such as The Philippine's InstaPay (2018) and Thailand's Promptpay (2019). There was also a mix between developed country examples (Canada's RTR & Interac and EU's SEPA ICT) and developing ones (such as India's UPI and Kenya's Pesalink). We chose a diversity of ages, stages of maturity, and regulatory approaches in order to consider answers to these driving questions.

1 In this article, we use the term "instant" to describe the time to clearing being close to instantaneous. Others use the terms 'real time' or 'fast' for retail payments, which we consider interchangeable.

2 While we considered the selected instant payment systems as a whole, we focused our analysis on roles played by different parties in the governance arrangements hence we have followed the BIS convention of naming these schemes in what follows.

Figure 1: Instant schemes included in our study

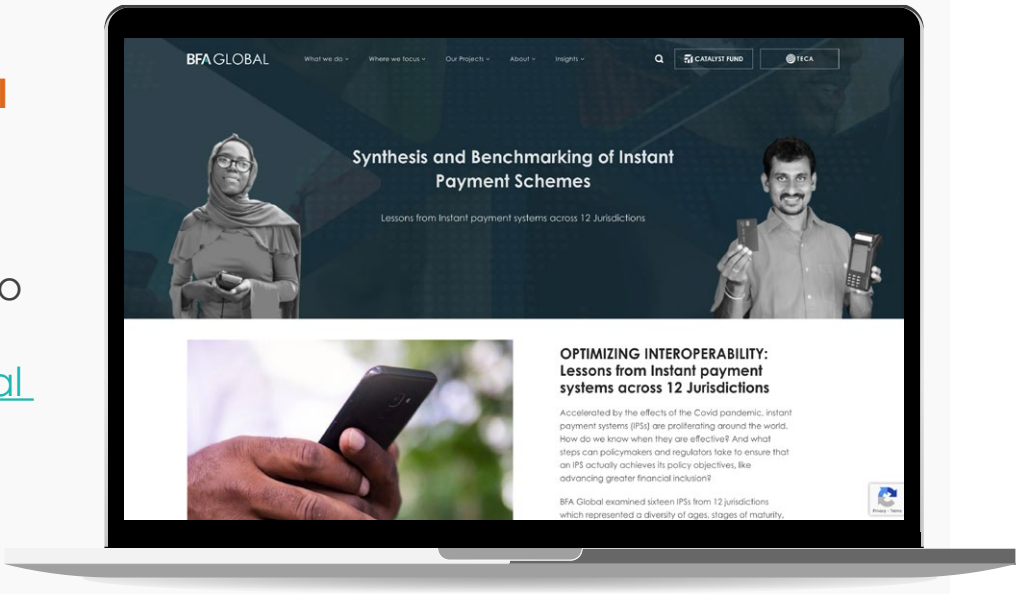


RTR & Intrac e - Transfer **Canada**
UK Faster Payments **United Kingdom**
(SEPA)'s Instant Credit Transfer Scheme **EU**
JoMoPay & CliQ **Jordan**
NetsUnion Cleaning Corporation **China**
Financial Inclusion Triangle **Ghana**
Real time Cleaning **South Africa**
Tarifa Moja Mobile Money Scheme **Tanzania**
Pesalink & Mobile Money Scheme **Kenya**
United Payments Interface **India**
Instapay **Philippines**
PromptPay **Thailand**

The 12 jurisdictations were chosen to **provide diversity** in:

- the national and regional dimension
- financial sector development (market structure and level of digital payments development), and in particular
- interoperable scheme setup e.g objectives, drivers, timing and set-up e.g private led vs public led).

The **individual country case studies** that informed this report are also available on the BFA global website.



SECTION 1

Instant payment systems are proliferating, but how do we know when they are effective?

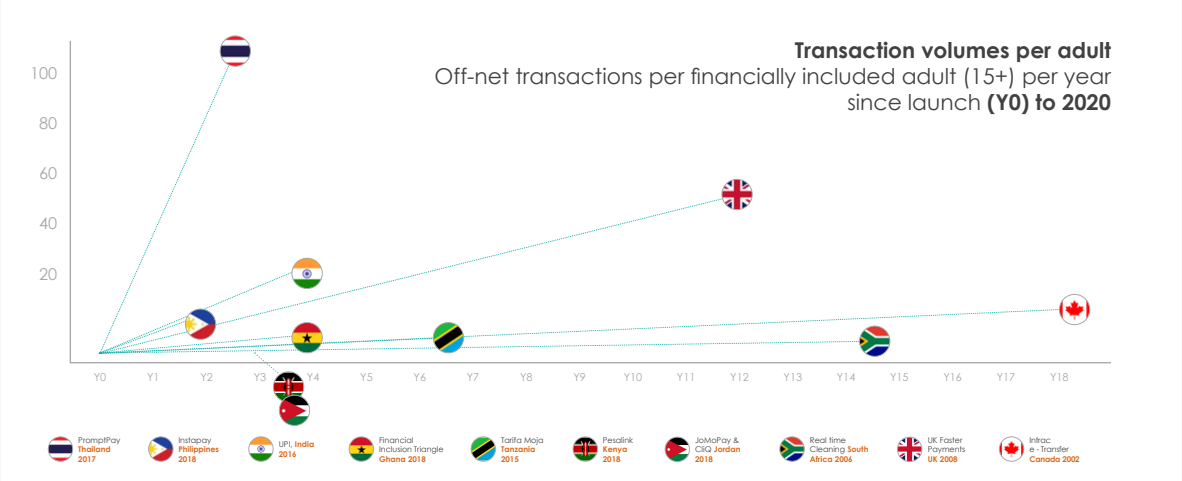
This section focuses on understanding the outcomes so far from the sample of IPSs we studied[3] as a way of calibrating our expectations.

3 We excluded the NetsUnion scheme in China from this further comparative analysis since its purpose was limited and specific; and has not resulted in consumer interoperability in the ways in which the other schemes all intended. China's Netsunion scheme for internet payments in our sample was mandated by regulators to improve oversight. It was meant to reduce the risk associated with the growth of parallel payment schemes by China's tech giants, which previously interfaced with most banks on a bilateral basis.

Judging by their outcomes – focussing on volumes

The most common outcome measure for payment systems, used for example in the BIS report or in CGAP's Technical Guide, is the reported volume of transactions. Volumes are usually expressed per capita for cross country comparison, although not on a consistent basis. In countries with lower levels of financial inclusion, the use of the adult population as the denominator in the measure would tend to underplay the volumes achieved. For that reason, we adopted as the normalizing measure: the number of financially included adults. These adults constitute the addressable market able to use digital payments, making the ratio more meaningful. These per capita ratios are usually depicted with respect to a common 'year zero' start year of the scheme to normalize for the maturity of implementation. In Figure 2 below, we show this measure up until 2020 for the twelve IPSs we considered.

Figure 2: Volumes of payments per included adult from the start



Note: the denominator used here for per capita is: population aged 15+ multiplied by the % included according to the latest Global Findex survey (2017). Note that Euro's SCT Inst and China's NetsUnion are not shown here. With regard to SCT Inst, we obtained reliable data only for 2020 and NetsUnion was excluded for reasons mentioned in footnote 1.

Figure 2 shows the different paths these systems have taken. For example, volumes through the UK's Faster Payments have grown aggressively, while those on South Africa's Real Time Clearing (RTC) have lagged. Among younger schemes, Thailand's Promptpay appears to be a standout success by this measure[4] , together with India's UPI. Early indications from Philippines Instapay are also promising, whereas slightly older schemes in East Africa, the cradle of mobile money innovation, like Taifa Moja or Pesalink have seen far less traction so far.

However, assessing volume outcomes alone do not capture the range of factors affecting performance of the schemes. These factors such as use cases prioritization, participation, and scheme economics can all impact success. But other factors also have an effect, such as existing levels of financial inclusion, market competition, and how directly the policy maker was involved in driving the interoperability conversation.

4 We excluded the NetsUnion scheme in China from this further comparative analysis since its purpose was limited and specific; and has not resulted in consumer interoperability in the ways in which the other schemes all intended. China's Netsunion scheme for internet payments in our sample was mandated by regulators to improve oversight. It was meant to reduce the risk associated with the growth of parallel payment schemes by China's tech giants, which previously interfaced with most banks on a bilateral basis.

Judging by their outcomes – adding stakeholder views

IPSs are set up for different reasons. The World Bank report lists eight potential desired outcomes, ranging from reducing paper-based payments to increasing competition and facilitating financial inclusion . Often, new schemes have a mix of objectives since stakeholders may have different interests as per Figure 3 below.

Figure 3: IPS objectives varied

Alipay 财付通	China - NetsUnion Clearing Corporation (NUCC)	To **strengthen oversight** by mandating that third-party payment transactions involving banks to flow through a centralized clearing platform.
SEPA Single Euro Payments Area SCT INST INSTANT PAYMENTS	Single Euro Payments Area (SEPA)'s Instant Credit Transfer - SCT Inst	Proposed by the Euro Retail Payments Board (ERPB), but, the EPC's key motivation to implement SCT Inst scheme across 36 Euro member states and territories was to **avoid fragmentation of the payments landscape** which had taken effort to harmonise.
UPI UNIFIED PAYMENTS INTERFACE	India - Unified Payments Interface (UPI)	To **promote adoption and usage of digital payments** in the country through an easy to use, mobile-based, instant payment system as digital payments were not taking off despite IMPS.
M-PESA PesaLink airtel money T-Kash	Kenya - PesaLink and Mobile Money scheme	Pesalink set out **to provide more efficient and cheaper rails for the flow of money and a greater value proposition to customers.** Mobile money interoperability was to to **address dominance which was stifling competition in the telecoms sector.**
Taifa Moja Tuma Pesa, Bila Mipaka	Tanzania - Taifa Moja mobile money scheme	The development agencies facilitated it to **promote financial inclusion** while the EMIs latched on to the idea of **sustaining transaction growth** which was beginning to plateau **and increasing digital liquidity** by responding to customer demand.
JoMoPay CliQ	Jordan - JoMoPay and CliQ Instant Payment System	To **enhance the level of financial inclusion** to the underserved through e-wallets and provide a key part of the value proposition for e-money wallets. **CliQ** is the **next step in facilitating broader instant payment interoperability beyond** e-wallet interoperability.
พร้อมเพย์ PromptPay	Thailand - PromptPay	Government aimed to transiton Thailand to an **enhanced digital ec**onomy (Thailand 4.0); BOT looked forward to **efficient flow of funds by moving away from heavy reliance on cash;** and Thai Bank Assoc were motivated by the looming threat of **disruption by the fintechs** and the promise of reduced costs of cash handling.
instaPay mo'yan!	Philippines - InstaPay	To **promote adoption and usage of digital payments**, transition Philippines from **1% electronic payments in 2013 to 20% electronic payments by 2020.**
★ GHANA ★ Financial Inclusion Triangle	Ghana - Financial Inclusion Triangle (GIPs & MMI)	To enable seamless flow of money across the mobile money platforms, banks and E-Zwich thereby **improving financial access by reducing cost and improving convenience of digital payments.**
Interac	Canada - Interac e-Transfer	**Additional** revenue stream for FSPs and more convenience to their customers
PAYMENTS CANADA Real-Time Rail	Canada - Real-Time Rail (RTR)	**Improved governance by the regulator** by bring instant payments under the governance of Payments Canada, **closing a gaps of Interac e-transfer** e.g improved settlement & clearing to manage risk, and **opening up access to foster innovation.**
Faster Payments	United Kingdom - Faster Payment Service (FPS)	**Regulators intervention to increase value for end consumers**. A key motivation for implementation by banks was a directive requiring the UK banks to remove float from standing orders following an investigation by Office of Fair Trading following an investigation into the lengthy clearing cycle for personal payments.
SOUTH AFRICA Real-Time Clearing	South Africa - Real Time Clearing (RTC)	Initiated as a **premium offering, an additional revenue stream** for banks aiming to charge a premium for convenience.

To assess the range of possible desired outcomes beyond volumes alone, we polled a range of the stakeholders in each scheme for their subjective evaluation of several questions:

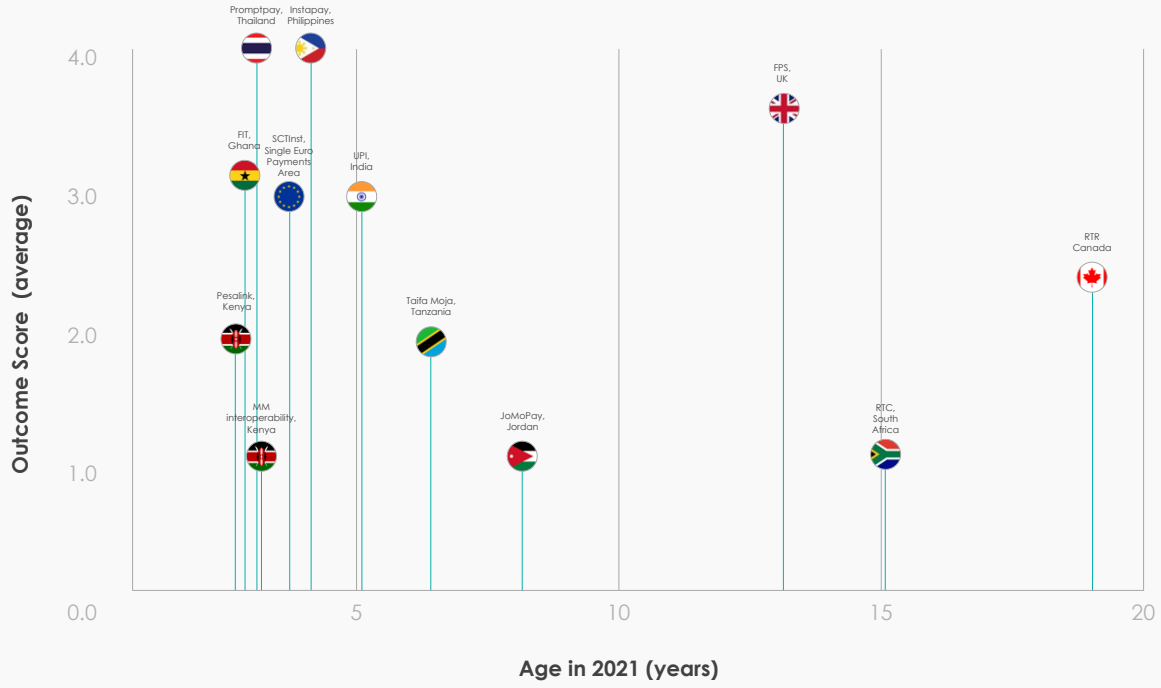
(i) whether the scheme in question had in general met expectations set so far,

(ii) whether the scheme had already provided notable benefits to defined stakeholder groups, and

(iii) whether they expected further benefits in the short to medium term.

The stakeholders included relevant regulators, the scheme managers, scheme operators, direct and indirect scheme participants, as well as local payment experts to provide general context. To standardize, we asked respondents to evaluate the questions through a five-point score and provide explanations for their scores. We then ranked the schemes against each other based on the stakeholder scores, the level of volume achieved, and the effectiveness for users. We sometimes made adjustments to the scoring for some of the schemes to capture contextual issues which we found to be key but which may not have been adequately captured in the three ranking criteria as explained in Box 1 below. The adjusted outcome scoring is tabulated by age in Figure 4 below.

Figure 4: Meeting outcomes–or not?



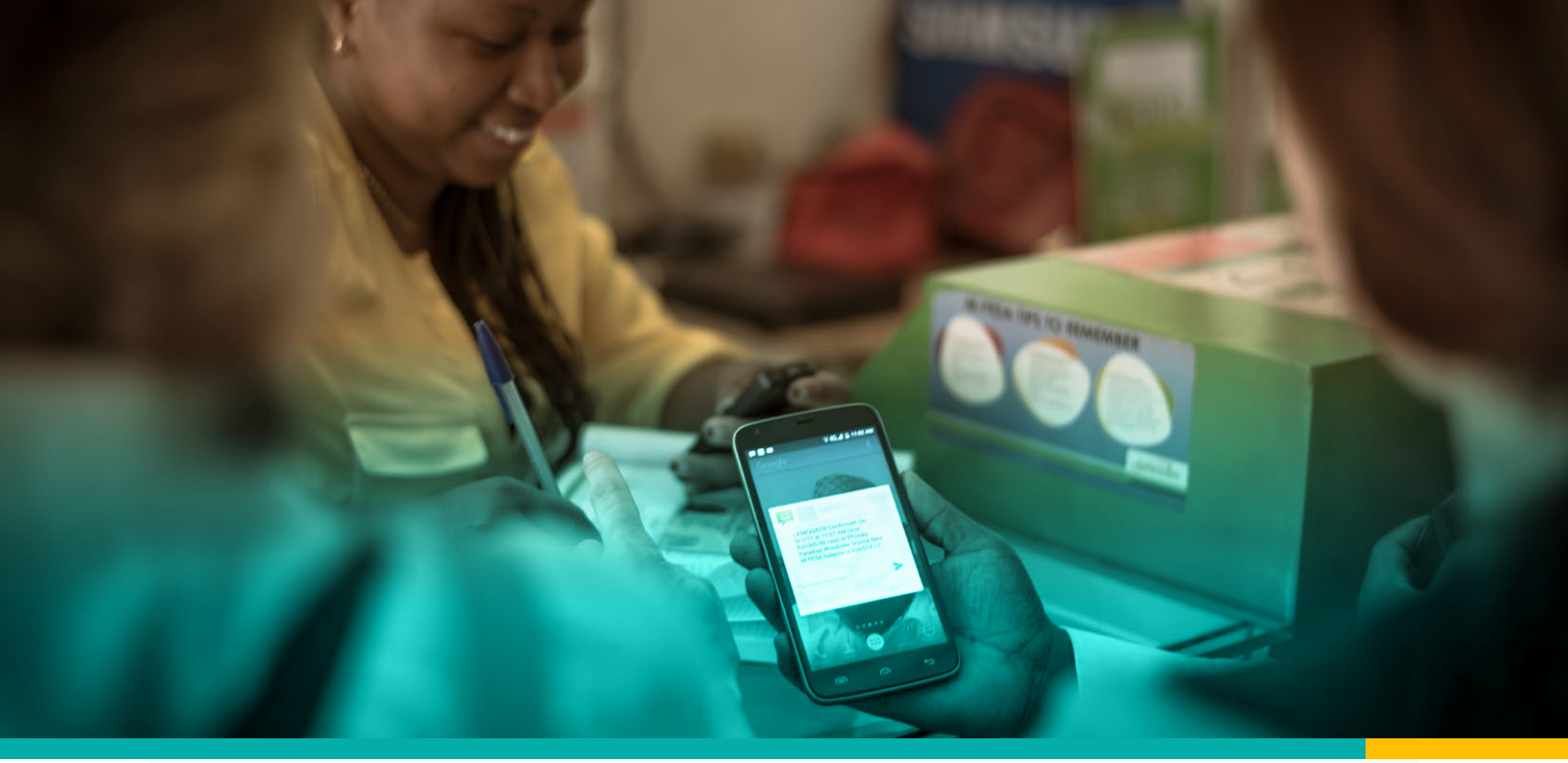


Figure 4 above shows that age alone does not account for meeting expectations or for positive outcomes – two of the youngest schemes, Instapay and PromptPay, score highly so far, only a few years into their journey. Certainly, this more subjective aggregated scoring tends to correlate with the volume outcomes seen earlier, suggesting that standardized, validated volume measures may be a good proxy. This is no wonder, as effective schemes should generate more benefits and value for stakeholders, leading to increased transaction volumes.

Box 1. Adjusted rankings based on contextual issues considered:

A

Schemes we downgraded from average stakeholder scores:

- UK's Faster Payments initially ranked in the same category (4) but was downgraded slightly to a 3.5 ranking as it **had taken four times as long** to achieve the score at half the transactions of PromptPay per financially included adult.
- Taifa Moja initially ranked as having met expectations (3) but was downgraded to needs improvement (2). There was a **notable propensity to include issues** such as the user experience being more difficult for interoperable transactions, and higher pricing being applied contrary to **scheme agreements,** which implied the scheme **governance could be a concern.** Moreover, most interviewees we got access to were involved in early stages of the scheme development and have since moved, which could be the reason stakeholder scores were higher than expected. We also did not manage to obtain the latest volume numbers to ascertain our extrapolation of the early growth trend in volumes.
- Although JoMoPay ranked as needing improvement (3), we downgraded its ranking to 'not effective' (2). Prescriptive technical implementation of JoMoPay became a **barrier to the very same institutions it was supposed to interoperate to promote financial inclusion,** hence limiting its effectiveness. By 2017, mobile money was responsible for including only 1.1% of Jordanian adults aged 15+ (Findex).

B

Schemes we upgraded:

- Pesalink was upgraded from the ineffective bucket (1) to needs improvement (2). It was noted that it provides a better pricing than the competing scheme despite not yet being able to compete. Also it has managed to integrate 29 of the 38 banks and begun to include micro finance banks, which was no mean feat in such a fragmented market and without regulatory action.
- SCT Inst ranked as still needing improvement. It was noted that SCT Inst has performed above expectations in terms of **operational performance and in line with expectations in terms of transactions,** but below expectations in terms of infrastructure interoperability and adherence (number of participants and in terms of geographic diversity). However, we adjusted up the ranking to reflect the mammoth undertaking SCT Inst had managed to pull off by integrating 2000+ FSPs across 26 countries while promoting competition at the infrastructure layer by providing choice
- Although Interac e-transfer was noted as a scheme that needed improvement, we determined that despite its shortcomings, it had **somewhat met expectations.** It had made instant payments in Canada ubiquitous and has recently started to provide features such as request to pay and use cases beyond P2P, following the expiry of a competition moratorium that had curbed its ability to invest in its research arm. However, it was seen as a monopoly solution serving as a barrier to innovation, hence the introduction of the new broader and more open scheme - RTR.

C

Schemes we did not adjust for:

- We did not adjust the ranking for PromptPay and InstaPay which proved to exceed expectations (4), UPI and Financial Inclusion Triangle which proved to meet expectations (3) and RTC in South Africa and MMI in Kenya which scored as ineffective schemes (1).

Our conclusions

The IPSs in our sample clearly vary in their outcomes, just as they do in their ages and in the motivations for their establishment. Volumes per capita adjusted for age correlate reasonably well to more judgment-based assessment of outcomes based on opinions expressed in stakeholder interviews and on expert views. In the next section we aimed to get to a sharper focus: whether the volumes and outcomes also included benefits for financial inclusion.

SECTION 2

The propensity to include in IPSs

In this section, we focus on whether financial inclusion has been advanced through implementation of these IPSs.

Countries implement IPSs for a variety of reasons. Financial inclusion was an explicit objective in only three implementations in our sample: Jordan's JoMoPay, Tanzania's Taifa Moja and Ghana's Financial Inclusion Triangle have made this an explicit priority. However, enhanced financial inclusion could result even if this was not an explicit goal of an IPS. We first need to set out the plausible linkages by which this can happen.

How can payment interoperability lead to more financial inclusion?

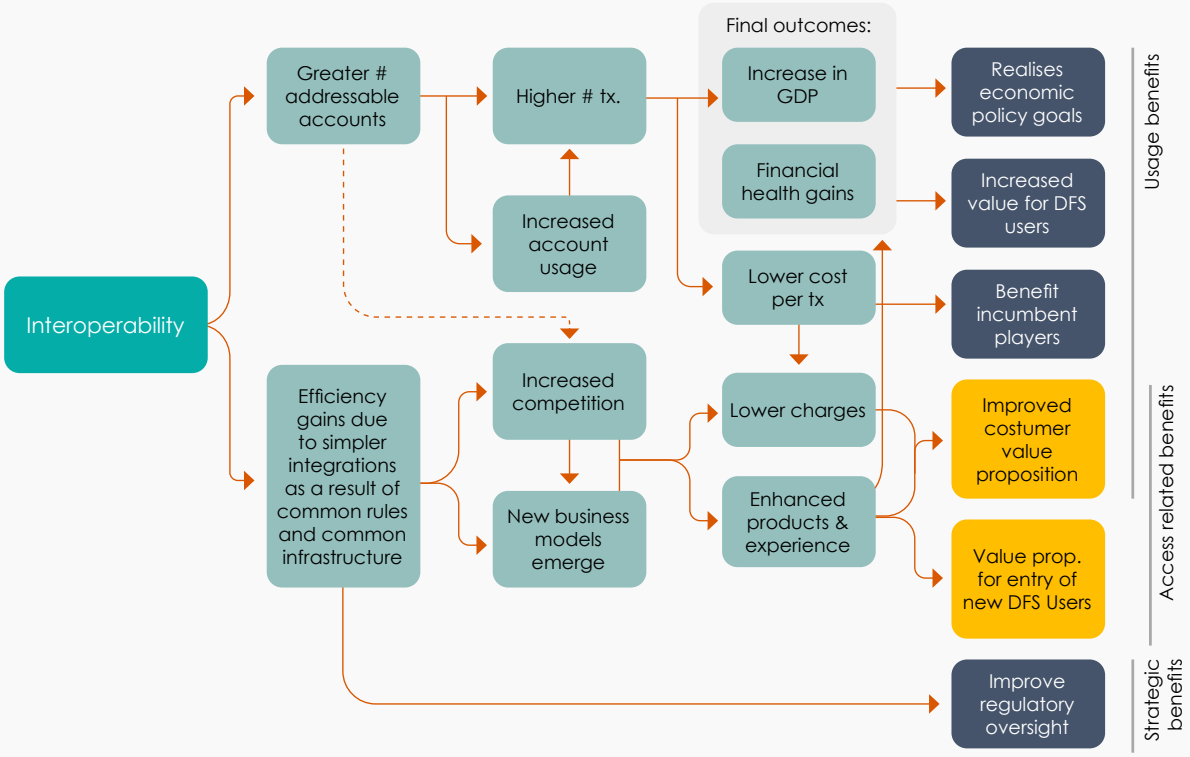
Our theory of change posits that payment interoperability could advance financial inclusion at two levels:

Including more financial service providers as participants in an IPS (broadening reach): Payment schemes which admit payment providers with a business model which incorporates providing payment accounts to excluded consumers are more likely to have inclusive outcomes. And it is more likely that innovative inclusion-friendly providers may emerge in a market in which an IPS removes some of the barriers to entry into the payments market, promoting participation by a diverse set of payment providers. This is therefore an intermediate outcome, required before the inclusion of excluded end users can be considered.

Including more customers with whom to transact (network effects) may further advance financial inclusion: by enhancing the utility of payments accounts, greater digital payment usage may result. Higher usage in turn may make the economics of acquiring new accounts and maintaining lower-cost accounts more viable for providers to serve the excluded.

The steps in this theory of change are shown in the Figure 5 below.

Figure 5. Interoperability and inclusion



Inclusion measurement challenges

While there is therefore reason to believe that interoperability could support inclusion, it is **much harder to judge in practice** for several reasons. First, there is a **measurement issue:** scheme-level payments data does not distinguish among types of end user, (e.g whether recent first time account users or not[5]), and some national payments data does not distinguish 'on us' from 'off us' payments.

Second, there is an **attribution issue:** even if the relevant data were available on usage by first time or low income users, it is not plausible to attribute this outcome to interoperability alone: there are often many other policies operating at the same time which affect the inclusion landscape. In markets like India, large government programs such as PM-JDY have promoted financial inclusion alongside the extension of payment schemes.

Assessing the likelihood of inclusion

In the absence of specific relevant and attributable data , we adopted a different approach: we examined the IPS' features against the four inclusion-friendly attributes identified in other recent research (see *Inclusion* and *your Bottom Line* report here) to determine whether the schemes are more or less likely to be inclusive. These four attributes – accessibility, affordability, value, and reliability – are shown in the table below, with the proposed application to payment schemes alongside and the examples underneath each.

5 As part of this project, we had the opportunity to undertake end user surveys in one country only–Ghana–through which we could explore attitudes and experiences of the instant scheme through the eyes of its end users. We believe that this can be useful and important to do; and we report on the methodology and outcomes separately.

Table 1. Inclusion friendly attributes of payment schemes

Attribute	Meaning	Payment scheme application
Accessibility	Ease of opening and using payment account for representative low income persona	• Whether non-smartphone channels are supported in environments where smartphone penetration is low • Whether the user experience of off network payments has high additional frictions
Practical examples: Although 69% of adults (15+) Filipino adults had phones in 2019, only 53% were using the internet, implying that the use of smartphones may not be as ubiquitous as thought; hence non-smartphone channels should be considered to reach the underserved (BSP, 2019). To overcome this concern, India's NPCI is currently testing a solution to allow UPI-based digital payment without an internet connection, called UPI Lite, to serve the excluded who do not have smartphones and are not accustomed to using the USSD channel. With regards to user experience in Kenya, interoperable mobile money transfers face unique user challenges when compared to on-net transactions, which may deter users from using the service. For instance, the menu for interoperable transfers may be hidden, transfers may accrue astronomical charges if they do not identify in advance that the receiver is on a different network, or minimum transfers to other networks may be set higher.		
Affordability	Fees are not prohibitive for low income use cases, although they need not be zero	• Whether the cost to consumers of sending a small value payment (USD10) was less than a threshold we defined of 2% • Whether regulators cap or restrict consumer pricing on transactions
Practical examples: In India, the regulator requires that there be no fees to the end consumer on all UPI payments. PromptPay in Thailand is also free to the end consumer up to a certain threshold (BHT5000/ USD143), but this came about when larger players made a strategic decision to make the service free (due to the difficulties of implementing regulator sanctioned tiered pricing) and the rest of the players followed suit within a matter of 2 days. In other markets, it is more difficult to assess affordability since transactions are but recovered through charging monthly fees on accounts. This especially happens in developed jurisdictions such as Canada, the UK and in the Eurozone. The African markets we examined tended to apply tiered pricing based on the value of the transaction while PSPs using InstaPay in The Philippines charged a fixed fee per transaction. Across all the schemes that charge for transactions, the fees also vary across the different participating providers. Cost as a fraction of the median transaction may be a more reliable measure for comparing affordability than the fixed value we chose. However, most schemes could not readily provide the median transaction figure for the evaluation.		

Value	The relevance of the services provided to the life circumstances and needs of representative low income persona	• Whether inclusion-friendly additional use cases like P2M and G2P are supported
Practical examples: All schemes began by implementing P2P as the low hanging fruit, but the majority struggled to progress to P2M, which was identified as a key use case to maximize acceptability and network effects, elevating the value of instant payments when compared to cash. E.g According to BTCA payments diagnostic, P2M transactions in Ghana represent 94% by volume of all payments in the ecosystem, yet interoperable P2M transactions are yet to take off more than three years down the line. We identified that determining the appropriate business model for P2M may be one of the key challenges why many of the schemes are stuck. In Thailand Standardized QR codes significantly increased merchant payments, especially in rural areas/ for SMEs, thereby achieving higher adoption. Some schemes have additional functionality such as request to pay, proxy addressing, and the use of QR codes to make payments more convenient. However, in Thailand, the request to pay function is not used by many because it is associated with debt collection while in the Philippines users prefer using bank account numbers to using telephone numbers because of privacy concerns.		
Reliability	The extent to which a service performs as it claims to or is known to	• Whether the off net functionality is generally available • Whether disputes or complaints about payments are handled in a consistent and fair manner
Practical examples: Through stakeholder interviews, our research was able to pick up anecdotal evidence around reliability when concerns were apparent, but measuring this particular attribute on a consistent basis would need a different approach.		

We assessed the extent to which these attributes were present in the schemes using information obtained during the detailed interviews. To summarize a mass of underlying information in a simple way, we assigned a score of 1 for the presence of each desired attribute indicated above. This aggregate number can be understood as a rough measure of the propensity to include–it predicts that a scheme with a higher score would be more likely to include more people over time than one with a lower score. This was normalized as a percentage, hence the maximum possible score was 100%. Figure 6 below shows the scores across the schemes.

Figure 6. Propensity to include rating of the schemes

Scheme name:	Interac e-Transfer, Canada	RTC, South Africa	Faster Payments, UK	JomoPay, Jordan	Taifa Moja, Tanzania	Unified Payments Interface (UPI), India	PromptPay, Thailand	InstaPay, Philippines	FI Triangle, Ghana	SCT Inst, EU	Pesalink, Kenya	MMI in Kenya
Date schemes became functional:	2002	2006	2008	2014	2015	2016	2017	2018	2018	2018	2018	2018
Proposed Propensity For Financial Inclusion (PFI) score:	**33%**	**0%**	**67%**	**67%**	**50%**	**83%**	**67%**	**67%**	**100%**	**50%**	**33%**	**50%**

Effectiveness for users based on inclusiveness product criteria (TPP and BMGF):

1. Entities with business models suitable for low end segment **participate**
2. Entities with business models suitable for low end segment involved in **rulemaking**
3. **Accessible:** USSD/ alternative for non-smartphone users
4. **Valued:** Use cases beyond p2p e.g P2M (Standardized merchant ID/ QR code)
5. **Accessible:** User experience & Additional functionality e.g Proxy addressing, request to pay etc.
6. **Affordable:** Fees are not prohibitive (<1% on $10))

UPI and FI Triangle both scored well in terms of stakeholder outcomes reported earlier, and UPI, in particular, showed traction in terms of volumes so far. Interestingly, four IPSs that have seen rapid adoption (PromptPay, Instapay, UPI, and Faster Payments) score similarly in the mid range of this propensity score (67%), but diverged in terms of more general outcomes reported earlier. Of course, in the long run, we would expect high volumes and greater financial inclusion to correlate since having more users would likely also drive higher volumes than would a static user base. These IPSs are all too recent to yet see this reinforcing effect. However, a higher propensity to include from the outset means that it is more likely to happen.

Our conclusions

The evidence clearly illustrates that the introduction of IPSs can increase usage of digital payments among existing customers. However,there is no guarantee of this. Rather, greater usage results from conscious decisions to harness the incentives of payment providers to participate and to promote instant payment instruments in ways accessible and affordable to target customers.

The propensity to include measure can be seen as a simple aggregate measure of those characteristics most likely to lead to greater inclusion over time. We would welcome the collection of more end user data which could confirm and calibrate the extent to which this is so. This list of characteristics could then be refined as those most likely to optimize inclusive outcomes.

SECTION 3

What role should financial authorities play and when in promoting inclusive instant payments?

In this section we assess the roles of financial authorities both in the set up of a payment scheme and in its subsequent operation. We use the broad term **'financial authorities'** deliberately, rather than the more narrow terms central bank or even payment regulator. While it is true in most cases in our sample that the central bank plays the role both of payment regulator and overseer, it is not true in all - the UK, for example, has a specialist Payment System Regulator under the Financial Conduct Authority. Also, in some of the countries, other authorities such as Competition Regulators or Finance Ministries also played an important role in the design and setup, and even in the funding of new schemes.

A series of publications in 2021 provides useful perspectives on the role of financial authorities in the setup and operation of IPSs. Some of the countries in the evidence base of these other studies overlap with those in our study[6], they also bring the experience of additional countries. The Box 2 below summarizes their findings.

Box 2. Findings of recent reports on IPSs

A recent CPMI report on developments in retail fast payments distinguishes three possible roles which central banks specifically (the focus of CPMI) typically play in a payment scheme:

- **Catalyst:** which refers to an active upfront facilitation role, after which the central bank may step back;
- **Overseer:** usually derives from powers in relevant laws which may vary according to the size and scale of retail payment systems; and
- **Operator:** the ongoing role in ownership, governance and operations which ranges from fully active (where the central bank owns and operates a scheme), through intermediate (where the central bank has direct involvement in some aspects of governance), to limited where it has no ownership and is only marginally involved in governance.

Based on a survey of its members (some of which were also in our study–South Africa, UK, Canada and EU), **CPMI observed that central banks played a wide range of up-front roles, from no active role influencing setup, to highly active, with no clear trend.** Their oversight role depended on powers assigned in national laws–which in some cases assigned these powers to other authorities: in the UK, a specialized Payments System Regulator outside of the central bank has the mandate to oversee payment systems including Faster Payments. **In terms of operations, the central bank most commonly had a limited operational role, restricted to acting as the settlement institution through the RTGS.** Where central banks or other financial authorities played an active role, this was usually an extension of payment services already offered to financial institutions or because of a wider policy objective.

In its chapter on oversight, **CGAP's 2021 Technical Guide adds further perspective on the differing motivations shaping the roles played by the central bank and mentions briefly how these positions may link to outcomes:** : for example, the Mexican central bank aimed to use excess capacity in its RTGS when it decided to act as owner-operator of the instant payment system SPEI. This was not common, however. The Guide also notes the existence of different

6 Our scheme sample overlaps with: CPMI study in 4 countries (UK, EU, Canada, SA); World Bank in 3 (Thailand, India, Kenya (Pesalink only)) ; CGAP in 4 (Tanzania, Philippines, Jordan (JoMoPay only) & India))

'shades' of ownership: for example, the Bank of Ghana has established a separate specialized subsidiary called GhIPSS which operates various schemes including Ghana's Instant Payment Scheme. This type of structure may help to create some autonomy for operating the new infrastructure, even while the central bank retains full control. **CGAP goes beyond merely mapping regulator positions, however, to mentioning briefly how these positions may link to outcomes:** "Regulators overseeing many of the most successful instant payment systems by transaction volumes (India, Australia, and the Philippines, among others) have focused on driving consensus among industry participants rather than on directly operating the scheme or switch." (CGAP 2021 p.19).

The World Bank's 2021 Report on Implementation Considerations for Fast Payment Systems lists examples of fast payment systems across the range of ownership options. Two of the schemes in our sample–Kenya's Pesalink and Thailand's PromptPay–fall under their privately owned category. The World Bank authors go on **to correlate the observed ownership structure with the level of country readiness for real time retail payments.** They propose that readiness can be measured effectively by the size of the addressable market, which is a combination of market size and the usage of digital payments. In markets with low readiness, they see more evidence of central banks playing a direct role in implementation and operation than in medium or high readiness markets where private sector ownership and operation is more common.

The World Bank's perspective may well be related to a weaker business case in low readiness countries, hence the need for more public intervention to get started. **However,** interestingly, the converse (i.e. that high readiness leads to market solutions predominating) is not always true: the CPMI report lists examples of countries or currency regions in which there is a co-existence of both public and private faster payment schemes–and these are all high readiness countries: the Eurosystem, USA and Sweden.

Although the These three reports therefore provide various perspectives on useful additional examples of how a particular approach to the role of authorities in ownership and operation of a interoperable instant payment systems scheme, evolves out of a country's specific context; but in general, they provide few insights as to how the regulatory authority's role is choice links to the outcomes observed.

Our approach to describing the role of financial authorities

What did we find in our study? Like the CPMI report, we also separated out the various roles of national financial authorities in setup and operations, apart from any role as supervisor or overseer of licensed retail payment schemes.

Within the **setup stage,** we identified four potential gradations of intensity of authority involvement, ranging from

- low (scored 0), where the authority played no active influencing role though it may have participated in conversations, up to
- high (scored 3), where the authority mandated participation and went further to prescribe operational aspects such as the switching platform, or prescribed standards and/or pricing arrangements for inter party and/or end user fees.

Between these extremes, authorities may have:

- encouraged participants through moral suasion (scored as 1), and
- played an active role in influencing the design and implementation while not directing it (scored as 2).

In the subsequent **operational phase,** we distinguished three levels similar to those of CPMI: from no direct role in operations (other than oversight) to fully owning and operating, with a middle level in between. See the mapping in Figure 7 below.

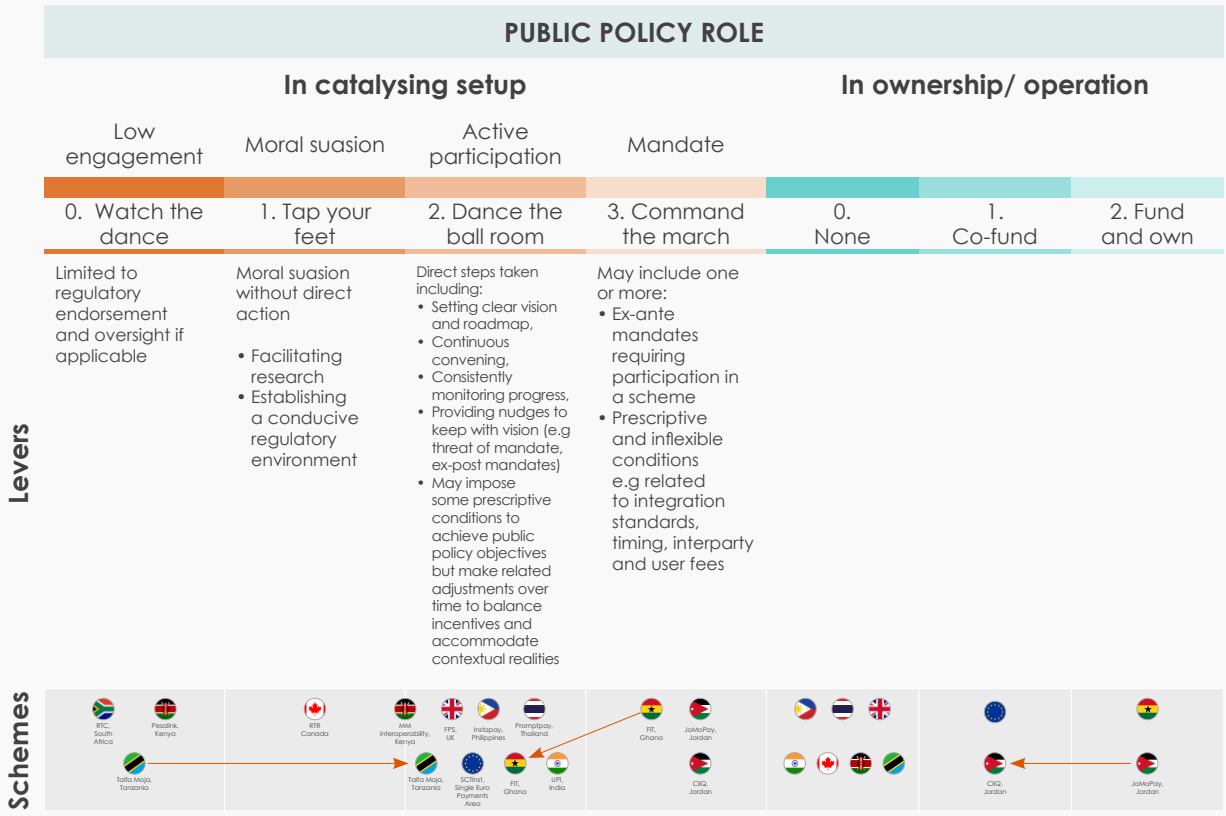
In common with the CPMI and the other reports, we observed considerable heterogeneity of roles during the **setup phase.** However, in our sample, there was a tendency towards authorities playing a more active role; and in five of the eleven markets, the authorities instituted mandates requiring participation. This finding was in line with the World Bank's inference that regulators may be more active in countries with lower readiness.[7]

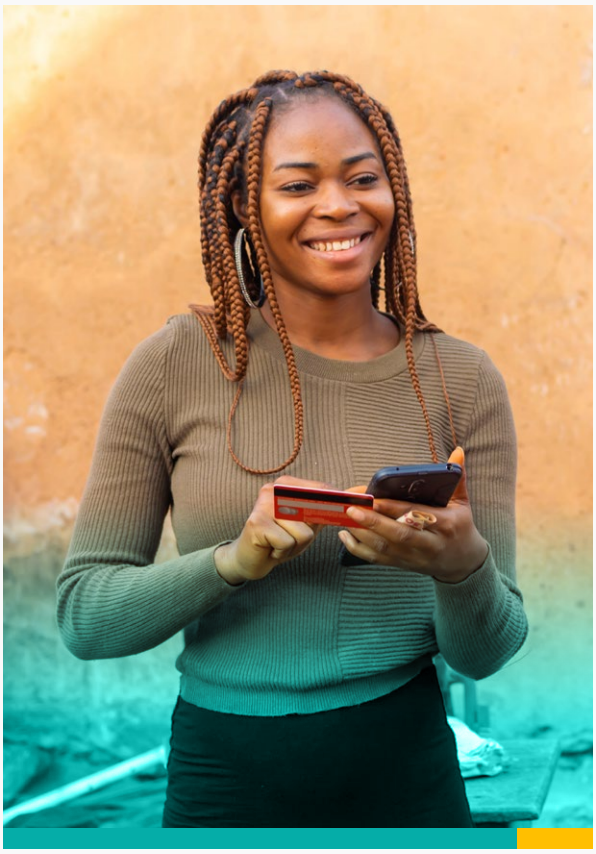
However, it is also important to note that roles can and may change over time. We observed movements reflected in the arrows above. For example, the Bank of Tanzania played a limited role in the Taifa Moja scheme initially, but it has mandated participation in the next generation scheme due to start with the launch of a centralized switch TIPS which it will also operate in 2022.

Observing the range of roles, we found a musical metaphor to be apposite: the authority can act like an **observer** at a dance or ball, or may engage as a **dance partner,** either following or leading participants. However, the authority can also act like a **'drum major'**, commanding a step more akin to a march than a dance, and did so in some cases.

7 The World Bank report essentially defined readiness by a measure of addressable digital payments market size as discussed in Box 1.

Figure 7. The differing roles of the central bank





In terms of the operational stage, we also observed heterogeneity in roles. It was rare for a financial authority to operate a retail instant scheme exclusively owned by it, with only Ghana as a current example in our sample. However, there are examples of co-funding through contributions in kind or cash to the payment management bodies implementing the schemes. The role, too, could also shift over time: as shown with the arrows, the Central Bank of Jordan owned Jomopay at first, funding its initial costs, but was willing to dilute its stake over time.

Regulatory levers under the different roles

We summarize below a list of the different levers which regulators in our sample pulled at different levels of intensity of authority involvement.

Figure 8. Regulatory levers used at different levels of intensity of engagement

The choice of the set of levers used in a particular setting is influenced by:

- The powers accorded to authorities to intervene in terms of the national payment system or other laws;
- The regulatory culture prevailing in a jurisdiction: in some, the culture does not naturally provide for consultation and defaults to the issuing of decrees or mandates; and
- Wider policy objectives outside the payment system alone.

While the choice will be shaped by factors relating to the legal and operational environment for financial regulators, the outcome from applying these levers will be likely be influenced by:

- The stage of market evolution, which we will discuss further below; and
- The capacity within the central bank in particular to engage with, influence and even lead a multi-party process– what we have previously described as the ability to dance.

The question of pricing mandates is often especially sensitive and controversial, and also more common among more recent IPSs in our sample. Among the more recent shemes, often this was in response to wider policy objectives. For that reason, we call out examples in the Box below.

Box 3. The role of pricing mandates

Regulatory mandates vary in their scope and timing, and therefore also in their implications for payment schemes. In traditional interoperability mandates, the regulator issues a rule or decree that a defined class of players must connect to a named switch; or else must participate in a named scheme, usually within a stated time frame. However, some of the more recent IPS implementations in our sample in India and Philippines included **restrictions on scheme** pricing–both at the level of inter party fees and/ or end user pricing of the service. Note that mandated pricing is a particular feature of both of these schemes, while participation is not mandated in India although it is in the Philippines. There, the mandate to participate followed industry engagement and aimed to consolidate agreement, rather than to force action, which is why we assessed the substance of the actions in these cases as active participation in the figure above.

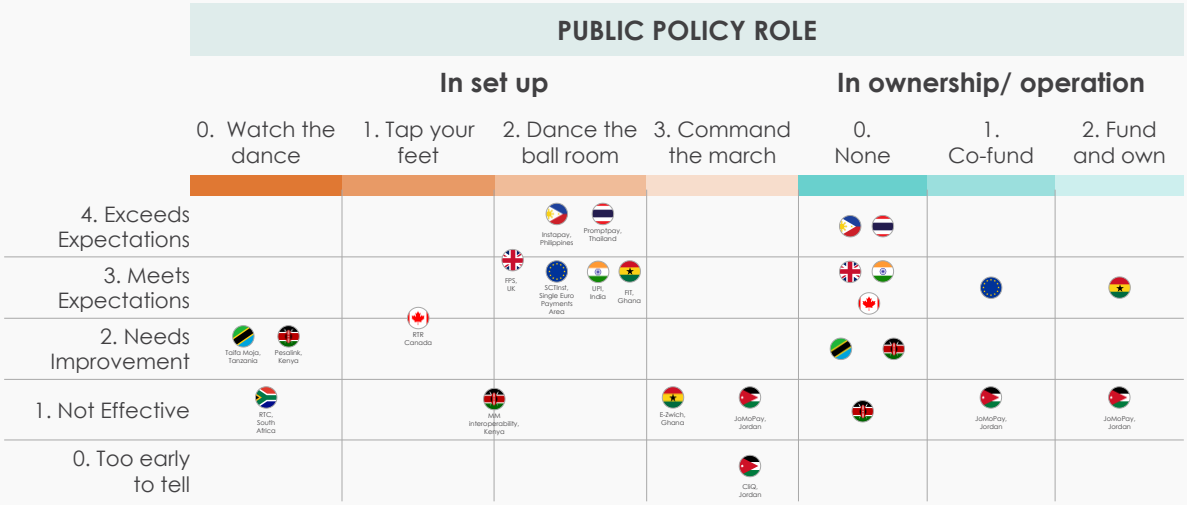
On pricing specifically, financial authorities in **India** mandated initially that all P2P transactions on UPI be free to customers, in part as an incentive to adopt it after the demonetization of banknotes announced in late 2016. Then in December 2019, they also set the merchant discount rate on P2M transactions to 0. The general approach to restricting the charging of fees created incentives for large tech platforms including Googlepay, Flipkart (Walmart) and Whatsapp (Meta) to promote usage of UPI since they could monetize client activity in other ways. Since traditional financial service providers lacked the same ability, these Third Party Application Providers (TPAPs) have come to dominate UPI volumes. To mitigate this, Indian financial authorities introduced additional measures to restrict the market shares of participating TPAPs to 35% of UPI volumes. In addition, to ameliorate the disadvantage for banks, the Government of India introduced a scheme in 2022 to reimburse the equivalent of the discount rate to banks on UPI transactions below a defined threshold (Rs2000/ approx. USD26).

In the **Philippines,** banks waived transaction fees on Instapay during the worst of the Covid pandemic in 2020-2021. When banks moved to reintroduce customer fees in 2022, the BSP mandated that these fees could be no higher than they were before the waivers. Our interviews confirmed that post the waiver, many players hiked consumer fees in line with the increased switching fee they had to pay following a migration to the new Vocalink switching platform in 2021 that offered additional capabilities at a higher cost.

Linking roles to outcomes

Figure 1 below depicts the spectrum of roles of financial authorities in the setup and operation across its columns, and the four stage composite measure of outcomes in the rows.

Figure 9. Role and outcomes: any link?



The Figure above reveals some patterns in several clusters which are circled. **Cluster 1** includes several underperforming schemes (Pesalink, RTC, Taifa Moja) in which the authorities played a very limited initial role. **Cluster 2** contains the largest number of schemes in our sample. These have largely so far met or exceeded expectations and in them, the central bank has played an active role in setup, but stopped short of issuing mandates ex ante: mandates were issued following consultation to give effect to what was already decided agreed upon. And a final **Cluster 3** shows some schemes in which a mandated role was often associated with low performance.

While this analysis covers only IPSs in eleven jurisdictions, these findings allow us to suggest that authorities which engage actively in support of setup but fall short of imposing ex ante mandates are most likely to support high performing schemes. And also that there is evidence in this sample of schemes that too little or too much intervention leads to suboptimal outcomes. However, in regard to ownership and funding there are no obvious correlations with performance.

In general, from this sample, we have to conclude that the **role of the central bank does affect outcomes–but that the effect could be negative or positive.** There is little evidence that mandating ex ante improves outcomes–in fact, evidence from most of these schemes suggests the contrary. The examples of JoMoPay in Jordan and eZwich, an early precursor to the IPS scheme in Ghana, caution that if the regulator does not adequately consider participant incentives, the result may well be limited market traction. This is another way of saying, using the dance metaphor, that engagement works best when the regulator recognizes that the scheme building process is in fact like a dance which relies on willing partners, rather than a forced march.

The timing of instant interoperability

The 2021 World Bank Report on Implementation Considerations sets out an interoperability readiness framework and recommends caution in proceeding with

IPSs at lower stages of market maturity. At the earlier stages of development, to be sure, both the incentives of financial providers and the capacity to implement new payment schemes may be more limited and fragile, and it is therefore more likely, but by no means certain, to result in suboptimal outcomes. However, The Philippines serves as a counter-example where the financial authority championed interoperability across banks and e-money issuers and where the IPS has so far achieved considerable success despite the addressable market being low: formal account ownership stood at 22.6% of adults before launch of the scheme as per the BSP 2019 Financial Inclusion Survey.

The World Bank framework proposes interoperability is far more likely to evolve naturally in more developed countries with larger addressable markets, where competition no longer is rooted on the deployment of infrastructure or even the acquisition of new accounts. However, there are certainly examples even within our sample which challenge this view of natural evolution: in Australia, EU and Canada, real time schemes have been slower to emerge than was originally hoped by regulators. In the UK, which developed its Faster Payment Scheme early on, it is questionable whether it would have evolved as it has without some pressure from the authorities in the earlier stages. In our view, **regulatory pressure towards effective interoperability may be needed at any stage** of market evolution.

Moreover, the financial authorities need to read and understand their own market trajectory in order to decide the ideal tempo for the 'dance' of interoperability. This assessment of 'tempo' involves far more than simply publishing a vision document which merely states interoperability as a goal: it requires developing a road map on which there is extensive market consultation to set out route to get there. To be credible, the process needs to harness incentives as well as provide for the threat of mandates and/or penalties. This finely balanced mixture of incentives and penalties where necessary is the essence of the approach called 'managed interoperability' which was first advocated in a report published in 2012.

Conclusions: Financial authority as dance partner and tempo setter

Successful schemes have demonstrated the importance of the role of the financial authority, both as a visionary (set the guiding star) and as an ultimate enforcer which balances the autonomy and accountability of payment providers to create sustainable solutions. Authorities In markets that met and exceeded expectations took active steps by providing a clear vision/ framework, facilitating studies, actively convening players to solve for interoperability, actively monitoring progress and aligning actions by providing nudges, threats and incentives. This appeared like a dance between financial authorities and participants, where the authorities are the lead dancers.
Setting a tempo or rhythm usually requires a central conductor, or coordinator, to enable diverse partners to synchronize complex activities over the protracted period of time usually needed to set up a new IPS. By default, this role could fall to a central bank, which among financial authorities may have both the capacity and the authority to do so, but a private body could also play this role. However, we observed that when the industry body coordinates the timing, as for example in the case of Pesalink in Kenya or RTR in Canada, it often takes longer to get to an outcome acceptable to all members. In particular, the authority may be helpful when schemes aim to bridge across multiple types of providers–banks and non-banks for example–with no natural central convening point like an association. We have also seen examples (in Tanzania and Kenya for example) where development agencies can step in to play a catalyzing role; but, unless there is the capacity to enforce commitments and to facilitate changes over time, the early traction gained from these catalysts may dissipate.

Where a financial authority is both empowered and capacitated to play a more active role in the setup of an IPS, this can assist in overcoming barriers impeding the process of scheme design and implementation.

SECTION 4

Competition linkages

We have assessed so far the outcomes relating to policy objectives like financial inclusion. But to what extent does **interoperability improve market contestability?** Improved competition is part of the theory of change enunciated above.

Concerns about lack of competition are sometimes a motivator for financial authorities to require greater interoperability. For example, competition concerns motivated the Central Bank of Kenya to mandate mobile operator participation in the Mobile Money Interoperability scheme in Kenya in 2018. Similar competition concerns also motivated changes in markets such as Canada and the UK. The initial results from our eleven jurisdiction sample seem to suggest, however, that regardless of whether competition was a primary motivation for the introduction of interoperability, interoperability so far has yielded mixed results for the contestability of the payments market. In some markets, we have seen some encouraging signs: an increase in the number of players (Tanzania, Jordan, Thailand, Philippines), a decrease in consumer pricing fueled by market dynamics (EU, Thailand, Philippines), and the introduction of new types of entrants (such as "over the top" players in India).[8]

However, the introduction of interoperability has not (yet) changed dominant market positions in all markets surveyed. Although smaller mobile money players in both Ghana and Kenya noted that interoperability gave consumers one less reason not to subscribe to them, in Kenya the market share of the incumbent (Safaricom) actually increased with the introduction of interoperability, while in Ghana the market share of the main mobile money player (MTN) has so far remained stable. The market share of South African banks has also remained stable since the introduction of mobile money. In Canada the introduction of Interac e-Transfer actually reduced the number of market players by eliminating Visa and Mastercard. And even in a market such as Thailand that has shown some clear signs of greater market contestability following the introduction of PromptPay (with lower consumer prices and an increase in number of non-bank players from 16 registered e-wallets in 2018 to 29 in 2021), there has actually been a decrease in usage of non-bank payment instruments.[9]

These contradictory results result from: (i) a lack of direct participation e.g although certain jurisdictions (EU, Philippines, Ghana) do allow non-banks to participate directly in the IPS , others (Thailand, South Africa) allow only indirect participation by non-banks ; (ii) a lack of representation by non-bank players in the governance structures of the IPS; (iii) lack of clarity in tradeoffs, resulting in misaligned incentives to participate. These factors often lead to poorer terms for the neglected segment of payment providers which can serve as a barrier to effective participation.

Conclusion

Of course, competition issues in payments go well beyond access to payment schemes and participation in their governance, and may well depend on decisions in other regulatory areas. For example, the creation of modified or new authorization regimes which encourage the entry of new types of entities like digital banks (in the UK, for example) or payment banks (in India). But once financial authorities allow the set up of new types of competitors to incumbents, then it also matters that these new entities have fair access to the IPS so that they can offer their clients that functionality from the start.

8 This analysis is based on stakeholder interviews and publicly available data. We do not have sufficient data to support any direct causal link between interoperability and increase of competition in these countries, and recommend further research be undertaken.

9 With an overall decrease of 25% in ewallet transactions from 2017 to 2019 while mobile banking/ internet banking transactions had doubled over the same period

SECTION 5

Evolving principle frameworks for IPS

IPS design is informed by evolving sets of frameworks and understandings of good practice. In this section, we revisit one such set, the L**evel 1 Principles,** issued by the Gates Foundation, which were first introduced in 2014 and were most recently set out in a 2019 edition of the Level 1 Guide. They were intended as a codification of the high-level design principles for digital financial services which seek to serve low income people successfully–that is, for financial services to result in greater inclusion in practice. The Level 1 principles were not only about payment schemes, to be sure, but they did define some of the core elements informing the choice of schemes in our sample for this study–that is, real time, interoperable payments offered through what we have termed IPS. It is therefore a relevant exercise to revisit the Level 1 Principles eight years after their introduction and to consider whether the evidence of practices and outcomes from the IPSs in our sample have a bearing on how they could evolve.

Assessing Level 1 principles

In the table below, the Level 1 principles are listed in the left hand column, and the right hand column assesses the extent to which the schemes in our eleven jurisdiction sample followed the principle, whether or not they set out to do so.

Figure 10. Assessing Level 1 principles

Level 1 principles as stated in 2019 version of the Guide	**Assessment from our sample of schemes**
Real time	**Yes**–by definition of how this sample was chosen
Open loop (meaning available to any licensed Digital Financial Service Provider - DFSP)	Yes, at least for newer schemes and directionality–however, of our sample of 11, five are restricted to banks or MNOs only. However, of these five, one (CliQ) intended to admit non-banks; and with another (UPI), the range of authorized banking licenses available in the country is already quite broad: it includes payments banks which are equivalent to EMIs in many ways.
Push payments only	**Yes**–although a number have instituted 'Request to Pay' as a simulated pull for particular use cases
Pro-poor governance including: • Equal ownership and engagement opportunities for DFSPs	**Varies:** the degree and form of ownership and engagement of different types of DFSPs varies; but equal ownership in the scheme may matter less than whether the scheme allows voice for DFSPs with inclusive business models and from users like merchants and consumers; and allows for innovations.
• Supported and regulated by financial authority	**Yes, although the intensity of oversight varies widely:** The role of the authority often goes beyond support and regulation alone; in particular, a catalyzing and guiding role which is more than support only, appears useful.
Leverages tiered KYC	**Not considered:** This is not directly an issue of scheme governance, but will affect the ability of issuers to open new accounts
System operates on not-for-loss basis	**Yes** for scheme operators **Varies** for infrastructure operators which may be for profit
Shared services are available to reduce costs e.g. fraud detection	**Yes:** in general, payment system management bodies evolve to add new value added services over time (especially addressing)

The Table above reflects the fact that many, even most, of the schemes in our sample have satisfied most of the Level 1 Principles, though not all. This outcome suggests that the Principles indeed set out good practices observed widely in instant payment schemes in the past decade.

Building towards 'Level 2'?

The Level 1 Principles aimed to be more than just a summary of good practice at the time—they were also a pointer to attributes likely to deliver inclusive outcomes over time. Drawing on the range of observed practices and outcomes in our sample, we see several areas in which it is possible to extend or nuance the Level 1 principles further to guide the next generation of IPS development.

First, newer IPSs are more likely to embrace all types of payment service providers, not only one category such as banks, provided regulatory authorities authorize and oversee the additional categories. This official recognition and oversight reduces risk for IPSs since they typically have limited contractual powers to intervene with a member in event of non-performance whereas regulators typically wield wide ranging enforcement powers. This trend seems positive for future uptake–some of the recent high performing IPSs in our analysis like Instapay and SCT Inst exemplify this. However, our study suggests that the real focus here should be less on achieving institutional diversity in scheme membership per se, and more about ensuring a scheme is attractive for financial service providers which have an underlying business model which is inclusion friendly. For example, in some jurisdictions, newer institutional forms like EMIs struggle to sustain a business case, whereas the evolution of bank licenses to admit digital only banks shows signs of greater success.

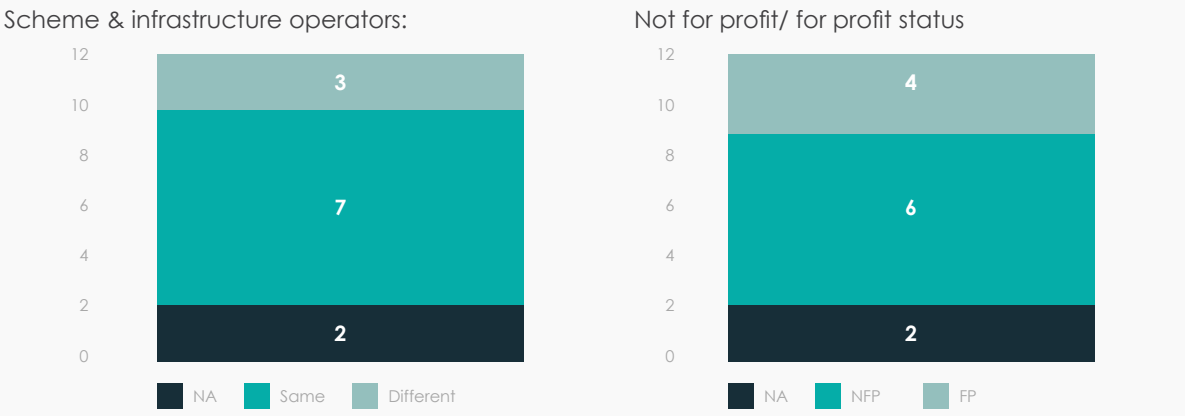
Second, "pro-poor governance" is named but is left quite vague in the current Level 1 Principles: it amounts to allowing equal ownership and engagement opportunities for FSPs; and operating on a "not-for-loss" (i.e. not profit maximizing) basis.

The issue of ownership and engagement varies widely across our sample. In most, members appoint directors on scheme governing bodies, but the voting influence of members usually varies according to a measure of their volumes. This is also the basis of levying contributions to fund capital expenditure when required. Smaller members inevitably have less influence, although some schemes (for example Pesalink in Kenya) recognize different categories of members by size and allow each to appoint a director, increasing the voice of smaller providers. Perhaps most interestingly, there is a clear trend towards the appointment of more independent directors to the governing bodies of schemes. This has been the case for a while with more established management bodies like South Africa's PASA and was introduced more recently in 2019 for the operator of Kenya's Pesalink scheme, IPSL.

The majority of the scheme operators in our sample can indeed be considered as **'not-for-loss'** in Level 1 terms, either in their legal form or in expressed intent, complying with that principle. However, Canada's Interac is an example of moving in the other direction: an earlier court order requiring it to operate on a not for profit basis expired in 2020, widening the choices for the operator; at the same time, the new national Real Time Rails (RTR) scheme was still under development.

However, we increasingly see divergence in the way infrastructure services were provided. As shown in Figure 2 below, three of the schemes outsourced infrastructure operations to a third party operator. The operators of these three, together with Interac, operate like utilities but are able to make and distribute profits to shareholders; and indeed some aim explicitly to. For example, Instapay in the Philippines contracts Vocalink, a private switch operator ultimately owned by Mastercard Worldwide, a publicly traded company. Vocalink is also contracted to NITMX in Thailand, the scheme operator of PromptPay, and will be a solution provider for Canada's upcoming RTR. Bankserve in South Africa is owned by a consortium of South African banks. At one stage under competition authority pressure, the banks considered selling it to First Data, a large listed payment tech company, but instead have retained their ownership while marketing its services more widely.

Figure 11. Status of scheme and infrastructure operators



Source: BFA interviews for each scheme

As IPSs proliferate, it is likely that the trend towards the greater use of outsourced private infrastructure operators will continue. This move may enable new schemes to set up faster and also to scale more easily. Outsourced contracts likely reduce the upfront capital expenditure required. They may also benefit in pricing terms from economies of scale in the deployment of technology, and in terms of capacity, from easier access to enhancements over time than self-operated infrastructure. Schemes can manage the pricing and delivery of outsourced infrastructure services by contract, though like any outsourced contract, this must be carefully structured to avoid surprises. For instance Philippine's InstaPay clearing fee increased to PHP 3 per transaction from PHP 1 in January 2022. Many stakeholders remarked that the increase in cost was a surprise to the scheme management body, although BancNet the operator claimed that it had given ample time to respond to the proposal. The real point here is that the choice of the best infrastructure provider for a new scheme to use clearly involves more important considerations than their profit making status.

Our conclusions

The Level 1 Principles have stood up quite well in the experiences of our sample of schemes. However, there may be opportunities now to update and extend the original guidance in the light of further evidence about practices leading to inclusion since they were introduced. Our work has suggested a few areas in particular related to product features described more fully in the second blog in this series and to scheme governance.

Pro-poor governance has to mean more than simply allowing different types of payment providers to participate in ownership of a scheme, even though a diversity of regulated entities may be necessary to create cross-business model competition. Rather, it also requires a clear commitment by the scheme, entrenched in a purpose statement, that it intends to enable the reach of digital payments to all. A statement like this would effectively recognize users as identified stakeholder groups of a scheme. Appointing independent directors who bring a voice more aligned to end users to the governing body of a scheme may be helpful, but this is unlikely to be sufficient to entrench purpose. Rather, a scheme with pro-poor governance would regularly seek to measure the extent to which it was fulfilling its purpose and to understand why and how it was falling short. This would require investment in monitoring capability and in governance structures. Monitoring would involve measures to assess the take up of the scheme as we have discussed in other blogs in this series. And within governance structures, there may be value in setting up subcommittees with a mandate for Innovation and Inclusion, which would maintain the focus on these issues over time. These are all innovations which we believe are worth trying especially in the newer schemes now under design.

SECTION 6

The changing landscape for instant payments

In this final section, we take a brief excursion to consider how two recent trends may affect the deployment of IPSs– the rise of central bank digital currencies (CBDCs) and of private stablecoins. We consider each in turn below.

The rise of Central Bank Digital Currencies

Even more rapid than the acceleration of countries considering instant payment systems has been the increase in the number of central banks exploring the issuance of digital currencies or CBDCs. According to the Atlantic Council tracker, 87 countries were exploring this approach in late 2021, more than double the 35 countries reported in 2020. However, of this sizable number, only 7 had launched and 17 were at pilot stage in December 2021.

The countries considering CBDCs have varying motivations–from maintaining the strategic relevance of the central bank after cash usage has declined materially (Sweden), to efficient replacement of high cost cash (South Africa) to financial inclusion (for example, in the eastern Caribbean countries like Bahamas). The Atlantic Council tracker also shows the great heterogeneity in: market focus (some are intended for retail usage, others for wholesale); architecture (direct vs. indirect issuance through the banking system); and the infrastructure used (whether distributed ledger or not).

What does this mean for the development of instant payment schemes? First, they may consume the capacity and focus of financial authorities. A recent BIS report stated:

"Regardless of the design, developing and running a CBDC system would be a major undertaking for a central bank."

For central banks that are mandated to regulate instant payments schemes, this may divert valuable resources. Similarly, CBDCs will likely also consume private sector resources since banks would have to divert attention from other payment modernization efforts to be able to handle CDBCs in some form–whether as issuers or simply to be able to receive in the way they take cash deposits today. There is also a risk that the variety of different approaches under development may fragment the ability for CBDCs to be widely accepted. The Atlantic Council has warned:

"Without new standards and international coordination [around CBDCs], the financial system may face a significant interoperability problem in the future."

CBDC issuance is still at an early stage in practice and the implications remain uncertain. However, the irony seems to be that where effective digital currencies are most needed to provide a trusted medium of exchange and to improve the efficiency of digital payments, they may be hardest to implement. And they may draw attention away from account-based payment schemes like IPSs.

The rise of private stablecoins

A second related trend accelerated by the effects of the Covid pandemic has been the rise of private stable coins. That is, token-based stores of value which are pegged to fiat currencies through a variety of methods – from maintaining matching reserves akin to e-money issuance, to incentives for arbitraging any pricing differentials. The 2021 McKinsey Global Payment Report reports that monthly volumes of stable coins traded in 2021 averaged over $300 billion, many times higher than in 2020. Much of the increase has been linked to activities related to decentralized finance platforms and contracts; but there has also been rising acceptance of the potential benefits of programmable 'smart money' for certain use cases. The 2021 Citi GPS Report on the Future of Money states that "the story of digital money in the 2020's will be the growth of tokenized money."

Central banks differ widely in their regulatory view of private tokenized money. Some like those in China and India prohibit it – in part to prevent abuse and in part to clear the way for issuance of their own tokens. China is already rolling out its eYuan and India has announced plans for an eRupee to debut in 2023. Even if central banks prohibit private stable coins, they may struggle to enforce this prohibition outside the banking sector since their powers over non-bank players are usually lower, both de iure and de facto.

The leading contenders to roll out new forms of digital money include non bank tech companies. Acquirers like Stripe or Paypal are already integrated into merchants' systems and may find the ability to clear and settle international e-commerce in this way attractive from a cost and risk point of view. Indeed, the potential implications of a rapid, large scale rollout of the proposed Libra stablecoin (subsequently renamed Diem) by an association largely of non-bank companies led by Facebook created regulatory impetus to respond both in terms of new regulation and issuing CBDCs as countermeasures. The Diem Association in fact disbanded in early 2022 after finding its path to market blocked by regulators; but there has been a proliferation of other alternative stablecoins. For example, Hedera which launched in 2017 claims among its Governing Council big tech companies like Google, acquirers like eftpos, and regional banks like Standard Bank of South Africa. Use cases on offer include cross border remittances, with a proof of concept demonstrating this announced in November 2021.

What does this trend towards increasing use of private stable coins mean for the development of IIPS? On the one hand, this may be **a spur for incumbent financial institutions to accelerate their moves** to create faster payment networks in order to keep bank account-based payment systems relevant. However, it is also increasingly likely that token-based networks may function alongside instant payment networks as complements rather than rivals in some countries.

The Philippines provides an interesting example of growing complementarity. UnionBank, a domestic bank which is a member of Instapay, the IPS started in 2018, has launched a blockchain based real time payment service called i2i. i2i connects rural banks to each other and through Union Bank to other national commercial banks, in this way extending the reach of the instant scheme to achieve greater inclusion.

Even when Central Banks do not encourage or allow developments like these, it seems likely that issuance of

private stable coins will continue to rise, as they provide features which account-based bank currency does not yet do, such as supporting payments under smart contracts.

For financial inclusion, the more important dynamic around tokenization is whether it will open opportunities for new categories of issuers of low cost digital wallets able to hold and transfer these tokens. Ecommerce platform providers from Amazon to Jumia have already become players in the merchant payments space because of their ability to use information about clients to manage risk and their ability to offer low cost, effective solutions because they can monetize their offering through other ways than fees charged on the payment service alone. Offering additional financial and non-financial software solutions to small businesses can raise the share of merchant wallet from 4% to 30% or more, according to the 2021 McKinsey Global Payment report. This makes it viable to serve clients in ways that financial institutions offering financial services alone may struggle to do.

Drawing conclusions and making recommendations

In line with the other reports on instant payments we have highlighted, our project has found a complex relationship between the role of financial authorities and IPSs. We found evidence that interoperability mandates alone, when not backed by other supporting measures or not proceeding from a process of engagement and negotiation with participants, seldom achieved positive outcomes–either in terms of volumes or of reaching their inclusive potential. But equally, schemes in our sample which lacked clear guidance and direction from regulators also struggled to achieve traction.

The diversity of roles assumed by financial authorities reflects the reality that payment schemes operate as specialized ecosystems within the wider financial ecosystems in an economy. In the face of this complexity, any attempt to apply a rigid template for building new IPSs will likely struggle. While the software and hardware infrastructure required for digital payments becomes more standardized, the soft institutional infrastructure which defines the incentives and roles of participants is much less so. Optimizing payment schemes for financial inclusion will always be a journey: factors like those identified in this project may make it more likely to happen, but achieving this outcome requires active and ongoing engagement.

Returning to our musical metaphor, there is a need for music which attracts the appropriate players to join the dance, since forcing them will usually result in awkward or half hearted steps. The tempo, and even style, of the dance may change over time, but wise policy makers can play the role of conductor, orchestrating harmonious outcomes rather than forcing discord which leads to missteps.

Recommendations

Coming from this research, we highlight here several recommendations directed to some of the different stakeholders involved in IPS establishment.

- First, on the **international level,** there is a need for consistent tracking of various measures of IPS adoption and traction. Per capita volume measures (whether per adult or per included adult as we have shown) are helpful and should be collected annually on a standardized basis across countries. Other outcome measures could include off-net transactions overall, which were hard to come by in some markets; and breakdowns of usage by use cases in key areas like P2M. International standard setting bodies like the CPMI have already played a role in tracking such measures as we saw in their 2021 report; but they and others may need to play a greater role in collecting standardized data from IPSs beyond those in their members alone.

- Second, especially when new schemes are financed by **donors, we would recommend that donors require an ongoing monitoring process to be built into the design process.** There are already steps in this direction: through support from the Gates Foundation, IPA is undertaking an impact evaluation project to rigorously measure the impact of IIPS on a range of indicators. This process should seek to track the profile of end users over time and enable scheme governance to determine the extent to which the scheme is meeting end user needs. This could take place through bespoke surveys or through incorporating more targeted questions into national surveys like FinScope. However, in this area too, there would be benefit in creating a standardized set of questions for greater comparability across schemes.

- Third, we have seen how our sample of IPSs has broadly validated the principles outlined in the Level 1 framework for inclusive digital finance. There is an **opportunity to update and extend these principles into a next generation format,** especially in those areas which are vague like governance, so as to guide the next generation of instant payment system deployments.

- Fourth, and finally, **for financial authorities** considering whether and how to promote the development of an IPS in their jurisdiction: we would recommend careful consideration of the incentives of institutions to participate; and also which institutions are capable of participating. This analysis should certainly happen before issuing any mandate to require participation. Otherwise, the financial authorities may end up 'pushing on a string' in terms of achieving the outcomes they desire. But an IPS is only one part of the wider evolving national payment system. Financial authorities should publish and update a relevant vision document setting out the directions in which they would like to see the overall payment system evolve. The very act of publishing such a document will require consultation and engagement with stakeholders. If clear enough, the vision document can function as a roadmap for change. This is one way for financial authorities to set the tempo or rhythm of the payment system 'dance'.

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