G20 ARGENTINA 2018
BUILDING CONSENSUS FOR FAIR AND SUSTAINABLE DEVELOPMENT

GPFI Global Partnership for Financial Inclusion

ACHIEVING DEVELOPMENT AND ACCEPTANCE OF AN OPEN AND INCLUSIVE DIGITAL PAYMENTS INFRASTRUCTURE

Guidance Note for the G20/GPFI Markets and Payment Systems Subgroup

BETTER THAN CASH ALLIANCE

ACKNOWLEDGMENTS

The primary authors of this note are Carol Benson from Glenbrook Partners, Roelof Goosen, former Director of Financial Inclusion at the National Treasury of South Africa, and Camilo Tellez, Head of Research and Innovation at the Better Than Cash Alliance.

The Better Than Cash Alliance is an implementing partner of the G20 Global Partnership for Financial Inclusion (GPFI).

Inputs and guidance were received from Co-Chairs of the Markets and Payments Systems Sub-group of the GPFI, Australia and Mexico. In addition, other G20 GPFI members and Implementing Partners also provided valuable contributions including: Argentina, Canada, Germany, Italy, Singapore, the European Commission and the World Bank.

ACHIEVING DEVELOPMENT AND ACCEPTANCE OF AN OPEN AND INCLUSIVE DIGITAL PAYMENTS INFRASTRUCTURE

Guidance Note for the G20/GPFI Markets and Payment Systems Subgroup

July, 2018

Contents

OBJECTIVE

This guidance note serves as input for the GPFI Policy Guide developed under Argentine Presidency 2018 with the overarching topic of digitization and informality.

Developed for financial inclusion policymakers and payment service regulators, this note proposes policy options and practical actions that can help moving toward developing open and inclusive digital payment infrastructures, while also incentivizing the acceptance and use of digital payments.

The note outlines the role of such infrastructures in the evolving financial services landscape, along with the issues in the establishment and beneficial use of such infrastructures. Additionally, a set of practical options is included to help guide government officials in crafting policies and actions for the progressive development of their national payment infrastructures.

It is important to note that any suggestions given in this document are not intended to be directed to nor provided on behalf of the standards setting bodies (SSBs).

Building directly on the work of the Global Partnership for Financial Inclusion (GPFI) over the last few years, this note also leverages the substantial work done by implementing partners and other interested parties in analyzing and understanding the ever-changing world of digital payments and financial inclusion.

AUDIENCE

The primary audience of this guidance note is government officials with responsibility for and an interest in the development and use of digital payment services to increase financial inclusion. However, payment service providers, both traditional and emerging, would benefit from taking note of the proposed policy options and practical suggestions in this note and the context in which they are being made.

Executive Summary

Building a more open and inclusive digital payments infrastructure can significantly boost financial inclusion and economic opportunity. Such infrastructure can increase levels of digital payment usage, and hence economic activity in the formal economy, particularly for formerly excluded populations. Whether in emerging or developed economies, moving toward open and inclusive payments infrastructure is a vital foundation for an inclusive and growing economy.

Governments that invest in this infrastructure – both in terms of resources and political capital – are likely to see returns on those investments that outweigh the costs of those investments.[1] Moreover, as knowledge continues to grow about the most effective ways to make those investments – and is shared among policymakers and other stakeholders – successful policy outcomes, and lower-risk implementation, are becoming more achievable.

Digital financial services have been a focus area of the GPFI since its formation in 2010. The G20 High-level Principles for Digital Financial Inclusion, published in 2016, and the work under the German Presidency in 2017 significantly heightened this focus, particularly through guidance notes such as Building Inclusive Digital Payment Ecosystems. In addition, in 2016 the Committee on Payments and Market Infrastructures (CPMI) and the World Bank released a report which analyzed how payment systems and services promote access to, and use of, financial services; that report also examined the elements of retail payments critical to financial inclusion and proposed ways to improve payments infrastructure to accelerate access and use. The Argentine Presidency is providing additional impetus with its focus on achieving greater use of digital payments, particularly for individuals and enterprises in the informal economy. It aims to enhance implementation by producing policy options or actions for a more open and sound digital payments infrastructure and through sharing policies that incentivize increased acceptance and usage of digital payments.

By way of general definition, an **open payments infrastructure** can be accessed by all providers of transactions accounts within the regulated realm.[2] Ideally, that results in an **inclusive payment infrastructure** that can reach any person or enterprise in the system. When the payment infrastructure is both open and inclusive it drives digital payment volumes. This in turn can reduce unit costs and hence end-user fees, while encouraging competition among payment service providers. An inclusive payments infrastructure can also help increase small retailers' acceptance of digital payments. This helps to extend the digital ecosystem by giving consumers and suppliers more alternatives to cash transactions and, hence, keep funds digital. Open and inclusive payments infrastructures could enable direct economic participation for more than 1.7 billion people worldwide, most of them women, who currently lack access to formal financial services. While some countries have made major progress in establishing more open and inclusive payments infrastructures, the task is not easy and requires ongoing effort to accommodate new developments. There are often other issues to consider in such an approach, and coordination among all role-players is essential.

Progress toward open and inclusive payments infrastructure has, in some cases, been impeded by three main factors: utility, cost, and trust. These issues manifest themselves in various forms, e.g., the (perception of) high costs, the fear of entering the "formal" system and the associated obligations of this system (particularly among informal retailers), and a lack of trust among users, particularly small merchants and individual users, due to inadequate or poorly communicated consumer protection or non-existent data protection mechanisms.[3] While governmental use of digital payments has had a positive effect on the acceptance and use of digital payment platforms, progress is uneven and has also been hampered by issues related to basic access.

This guidance note recognizes that further sustained efforts can help realize the potential of digital payments. The note first describes the key issues to be addressed for inclusive and open digital payments infrastructures. The note then lists various policy options that countries could consider in taking formal digital payments forward toward making the payments infrastructure more open and inclusive, and therefore useful and affordable for its end users. It is important to note that any policy options proposed in this document are not intended to be directed to or provided on behalf of the standards setting bodies (SSBs).

In the description of the digital payments infrastructure there are two parts: the development toward an open and inclusive payments system, and the utilization of the incentives for the acceptance and use of digital payments. The note is intended to help policymakers address, in a practical way, these and other challenges, including economic and regulatory issues, when planning the further development of their payment infrastructures. It is important to note that the implementation of the various policy options in this guide will need to explicitly consider the country context, such as the particular stage of development of the payments infrastructure. Whilest the note considers the issues and policy options around modern inclusive payment systems in general, it emphasizes the key potential of real-time retail payments systems (RTRPs), or "Faster Payments." An interoperable "Faster Payments" system[4] can significantly boost financial inclusion and increase the utility of digital payments. This note provides policy guidance to help realizse this potential.

The key policy options or actions can be summarizsed as follows:

Supporting a more open and inclusive payments infrastructure

This note recognizes that the role of government is primarily to provide policy guidance, to enable, regulate, and promote efficient, safe, and inclusive payment systems. The country context will determine which actors provide and operate payments infrastructure and payment services. An open and inclusive payments infrastructure can help drive financial inclusion by expanding digital financial ecosystems, making them available to more users. To achieve this, a common approach implemented by a range of countries is Faster Payments. Possible policy options to reach the objective of safe, efficient, and inclusive payment systems could include the following:

- **Enabling the development of interoperable payment systems, including Faster Payments.** This approach will substantially expand digital payments ecosystems, making such systems more open and inclusive. It will contribute to increasing payments services´ affordability and utility for the underserved. In moving toward an open and inclusive payments infrastructure, financial stability risks and operational risks should be considered, as well as a country´s level of payments and ICT infrastructure development and regulatory capacity.
- **Ensure that the core elements are in place to take the payment system forward in a safe and inclusive manner.** This must include modernized settlement systems, cooperative development, and the inclusion of all stakeholders, while maintaining regulatory oversight, phased implementation and appropriately enhanced regulatory capacity, the use of internationally recognized standards, and the active development of payment ecosystems at a local level.

Regulatory Considerations

Appropriate and effective regulation plays a key role in developing safe and efficient open and inclusive digital payment infrastructures and incentivizing their acceptance and usage. Financial stability must always be a key objective and country context must be considered in the establishment of any regulatory implementation.

- **Adapting regulatory oversight to changing market conditions can play a key role in supporting more open and inclusive ecosystems.** The combination of new technologies and new market entrants makes "regulation as usual" problematic in many instances. As regulatory oversight evolves in response to changing conditions, innovative approaches to regulation can foster greater openness and inclusiveness without increasing risk.
- **Regulation can be made more effective by accommodating different types of merchants and other payment acceptors in a proportionate regulatory framework.** This may include different requirements for Know Your Customer (KYC) systems, depending on the level of AML/CFT risk being introduced by the type of merchant or acceptor. The typical size of enterprise in the different merchant types being considered should play a role in determining the appropriate risk category.
- On the supply side, allowing merchant service providers to engage in other financial services, like remittances, lending, and insurance, can help support business models, thereby enabling low or reasonable transaction fees for small merchants. However, providers engaged in lending or insurance services will need to comply with the specific regulatory requirements for the provision of those services.

Creating Incentives for Inclusive Payment Infrastructures and Increased Acceptance and Use

Opening and modernizing payments infrastructure has the potential to increase the number of suppliers who are able to offer services to merchants and end users. To promote acceptance and use of those services, and to increase volumes within the system, three types of incentives could be explicitly considered: incentives to improve utility; incentives which reduce costs to the different categories of participants and enhance affordability, and incentives that bolster trust in the system. Specific policy options could be:

- **Prioritizing large-scale use cases** can build momentum and support faster and more inclusive ecosystem expansion. Such use cases can demonstrate the utility, safety, and trustworthiness of national payment systems. Focusing on priority uses cases like transit fees, utility bills, small-trader transactions, and remittances can drive market awareness and increase volumes. Governments could lead by example by issuing social benefits or salaries (G2P payments) using the digital payments architecture.
- **Incentivizing merchant adoption** through a range of interventions, from direct incentives for adoption, through standardization and interoperability. Of importance is focusing on measures to include merchants that typically operate in the cash economy. Policymakers should take care that incentives to increase acceptance or usage of digital payments do not create disadvantages for merchants and individuals already operating in the formal economy.
- **Where possible, provide incentives for consumer use of electronic payments to support adoption and drive demand for expanded digital financial services and other digital payments use cases.** The gap between potential and actual consumer participation could be narrowed by putting in place measures aimed at reducing fees, ensuring consumer protections, and providing financial incentives for consumer use of electronic payments.
- **Supporting alignment, efficiency, and long-term policy goals through national coordination and regional cooperation and joint development.** Learning from successful examples and using regional approaches to process domestic payments and cross-border transactions can help in development of financially inclusive infrastructures. Regionalization of processing, where feasible, could drive down costs.

The role of digital payments in driving financial inclusion and economic opportunity has come to global prominence in recent years. In many countries and demographic groups, progress has been substantial, as policymakers have moved to create inclusive and accessible digital payments ecosystems. However, policymaking in this area can be challenging for a variety of reasons, including the rapid evolution of new technologies and consequent business models, as well as market-specific factors. This note is intended to offer suggestions to policymakers to help them achieve the further benefits that digitizing payments can offer. The advantages are not only financial inclusion and improved individual living standards for the most vulnerable, but also include vital macro-economic growth drivers like enhanced productivity and economic participation. This note leverages and adds significantly to a growing body of detailed knowledge about key policy steps that will underpin success. While government officials are the primary audience, it is crucial to recognize that successful policymaking requires close and genuine collaboration, as well as knowledge-sharing between public and private sectors.

Introduction

As a continuation of the theme of increased financial inclusion through digital service provision, the Argentinean G20 Presidency's has prioritized the role of digital payment services to financially include the underserved population, particularly those in the informal economy. The final output of the Argentinean GPFI Presidency will be a Policy Guide comprising the deliverables of each of the GPFI subgroups. To this end, this Guidance Note will serve as an input of the mentioned Policy Guide. The Argentine agenda builds on the G20 High-Level Principles (HLP) for Digital Financial Inclusion and toward the UN Sustainable Development Goals.

The continued work of the GPFI and the Markets and Payment Systems Subgroup recognizes that financial inclusion is not an end in itself. Financial inclusion is a mechanism by which to encourage the health and well-being of local and macro-economies by enabling integration of individuals and small businesses into formal and secure modes of transacting. This work is being undertaken under the broad theme of "Building Consensus for Fair and Sustainable Development."[5] Building on substantive work undertaken by the Chinese and German Presidencies, the Markets and Payment Systems Subgroup is supporting the call for renewed attention to digitization, inclusivity, and informality.

The 2017 GPFI Guidance Note on Building Inclusive Digital Payments Ecosystems provided an overview of the major practical issues to consider when planning the expansion of financial inclusion through the use of digital payments ecosystems. This note expands on the topic of infrastructure as one of the core enablers to the development of an inclusive and open digital payments ecosystem. It provides guidance for policymakers and regulators with practical, relevant options to make improvements to payment infrastructures, ensuring openness for suppliers and inclusivity for providers and users. It is important to note that the various policy options presented will need to consider the specific domestic context, such as different stages of payments infrastructure development, legacy systems and current

G20 High-Level Principles (HLP) for Digital Financial Inclusion: The 2016 High-level Principles for Digital Financial Inclusion provide a basis for country action plans reflecting country context and national circumstances to leverage the huge potential offered by digital technologies.

GPFI Argentina 2018 Priorities Paper: This document highlights Argentina's priorities for GPFI and maps out key deliverables for 2018.

GPFI Guidance Note on "Building Inclusive Digital Payments Ecosystems:" This 2016 guidance note provides an overview of the major practical issues to consider when planning the expansion of financial inclusion through the use of digital payments ecosystems.

acceptance of digital financial services among end users. It is recognized that while a robust infrastructure is a precondition for inclusivity, infrastructure alone is insufficient to significantly advance financial inclusion through the use of digital services. It is therefore necessary to consider means of incentivizing providers and end users to participate in these systems. Incentives to address barriers to participation are specifically considered. It is anticipated that the move to formalization will gain momentum through an increasing in the use of digital payments.

In the next section the guidance note will firstly examine national payment infrastructures, noting features of legacy systems and advancements in broadening the reach (the ability of any payer to reach any payee) and utility of those systems. The note articulates features of an ideal payments infrastructure – one which is open to suppliers and includes client-facing providers. The emerging consensus around the inclusion benefits and efficiencies gained by the introduction of robust Faster Payments is noted. The note also highlights examples of other significant trends: the introduction of various forms of virtual currencies and associated underlying technologies such as block chain or distributed ledgers, as well as the emergence of regional payments systems. Corresponding policy options suggest how country regulators may view important questions on how to implement or update features of their payments system(s) and infrastructure, e.g., which elements should be considered shared utilities, and which elements should form the basis for provider competition and innovation.

The note then analyzes the challenge of how to adequately incentivize providers to participate in open payments infrastructures. In shifting to this demand-side analysis, the note identifies challenges to ensuring the "inclusive" side of open and inclusive infrastructures.

The note next details practical policy options which may support inclusivity by driving electronic payment acceptance by merchants, businesses, and governments.

Finally, incentives from a supply-side perspective are examined and listed and highlight ways in which policymakers may create or support mechanisms to encourage end users to participate in the emerging digital payments ecosystem.

A More Open and Inclusive Payments Infrastructure

The two attributes of the infrastructure – "openness" and "inclusiveness" – are closely related.

An **inclusive** infrastructure implies that all stakeholders in a country can participate. This is necessary for creating a system which meets the real needs of payment acceptors and payers, namely a system in which anyone can pay anyone. Indeed, a payments infrastructure can meaningfully drive financial inclusion for individuals only to the extent that it is inclusive of all parties that a given individual needs to transact with.

An **open** payments infrastructure consists of payments systems that are accessible by all regulated or formal payment services providers[6] in a country. A healthy financial ecosystem requires multiple providers (and multiple types of providers) to reach individual users and retailers with differing service requirements and differing abilities to pay for services. Naturally, sound oversight of entrants to the system and its use is required to ensure integrity, as well as building and maintaining trust in the system through protocols and security standards.

Together, more end users (inclusiveness) and more providers (openness) create an ecosystem that is increasingly useful for participants. This will increase transaction volume, which drives unit costs down and fosters competitive practices in the delivery of services to end users.

The mandate of policymakers and payment regulators is to put in place policies and regulations that can align incentives which measure openness and drive inclusivity, while maintaining the integrity of the payment system.

The Supply Side Perspective: Designing for Openness

An understanding of the features of current legacy and future ideal infrastructures is important in effectively implementing policies aimed at extending the use of digital payments. National payments infrastructure modernization is never a simple matter. While it is useful to consider the transition as the development of various states of payments infrastructure, along a horizontal axis with so-called legacy payments infrastructure on the left, and the goal of fully open and inclusive infrastructure on the right, it is important to note that the actual deployment of the infrastructure does not follow this linear path. The development is invariably country-specific and at any point may contain elements of legacy, advancing, and inclusive infrastructure to varying degrees, depending on the needs in the country and the ability of the infrastructure to respond to those needs. Along this path there are regulatory and technological advances – some successful, others underperforming – all of which are instructive as the global community strives for openness and inclusivity.

At the time of their design, "legacy" payments systems were engineered with the goal of openness among banks. At that time, all transaction accounts[7] were provided by banks, which considerably reduced the complexity of openness.

The advent of digital payments and new categories of payment providers (including, but not limited to, mobile network operator-owned or controlled operators) has complicated the payment infrastructures. The new providers are often successful in reaching new end users and many have created closed-loop systems, allowing their customers to pay one another. But these providers are typically not allowed, or have not been incentivized, to directly access the open payments infrastructure used by banks. This has resulted in some of these closed-loop systems entering into bilateral agreements with one or more banks, or other providers, in order to deliver a degree of interoperability.[8] The result is fragmented solutions that fail to meet the primary measure of usefulness – the ability to pay and be paid by anyone – while making it harder for providers to reach last-mile customers in underserved rural areas.

Of key importance in the design of open and inclusive payment system are gender equality considerations. As is well documented, both access to and usage of technology is a problem for many women[9] and this must be taken into account in the design phase. This should be based on an assessment of the state of gender-specific usage and the practical issues that women experience with technology-based payment solutions. Both gender-specific use cases should be considered, as well as market interventions that are designed with the reality of the lives of women in mind.

There is considerable upside potential for payments-system providers to embrace open infrastructures. By doing so, these providers benefit from "network effects" as more participants are able to use the system. As the infrastructure grows, economies of scale and scope emerge. The expansion enables the provisioning of appropriate services to a wider spectrum of people, including low-income earners historically excluded from formal payment services.

Legacy Systems

Across the world, the same set of core legacy payments infrastructures is used by banks and other established payment service providers to process transactions. Although per capita use of these systems varies sharply by country, and the systems may differ in some areas, they are quite similar in architecture and features across markets. These systems are interoperable by design, as they exist to enable the exchange of transactions among customers of different banks or other established players. The principal payment streams are card transactions, electronic funds transfer systems (ACH systems), check processing, and real time gross settlements (RTGS). These typically use the same design: a central payment switch which connects the banks or similar parties (directly or through their processing partners) to enable them to conduct transactions. These systems are governed by operating rules written or consented to by participating banks, under the umbrella of whatever specific regulations govern the system and its transaction. These systems make use of settlement services that manage the inter-institution obligations, typically overseen and often provided by the country's central bank.

Legacy payments systems share some operational similarities as well. Firstly, legacy systems process large volumes of transactions. Shared utilities built for cost saving need to operate at scale to drive down transaction costs. Participants in these systems often develop innovations and competitive features on top of the platform, rather than establishing multiple platforms which compete. Secondly, legacy payments systems support multiple use cases, even if they may have originally been developed for a single or limited purpose. For example, some electronic funds transfer systems were originally developed to handle payroll and bill payments, but today are used for purchases, business-to-business payments, and for person-to-person payments. Similarly, card systems were originally developed for purchases, but today are used for multiple purposes. This again increases volumes and reduces unit costs.

A typical operational model for these platforms in many countries is that of a shared utility, with some level of regulatory oversight by the payments regulator. It should be noted that many of these systems are used directly only by the larger banks in a country; smaller banks usually access the systems through relationships with larger banks. These arrangements evolved because smaller banks often could not meet the technical and/or liquidity requirements of the system. Newer, less costly technology and newer settlement systems should make these restrictions less necessary in the future.

New Payments Systems in National Infrastructures

New payments systems and services have been introduced as a part of national payments infrastructures in recent years.

Mobile Money

Mobile money was introduced in mainly emerging economies as a way to utilize mobile phones as a transaction device, in an attempt to circumvent the limited availability of transactional infrastructure. This encouraged new classes of transaction account providers to serve unbanked populations. In contrast to traditional payments systems, these have generally been introduced as closed-loop systems. By some measure they have been a success: As of 2017, the GSM Association (GSMA) cites 277 deployments in 92 countries, with 556 million registered accounts. Although there are a handful of countries where adoption and use of these services have been significant, in many countries usage has been far lower than expected. Many of the accounts are not being used, with less than a third (32%) of the registered accounts considered "active." The most prevalent mobile money use case has been the domestic person-to-person transfer. Multiple attempts at expanding to other cases have met with limited success, except for a few markets, notably in East Africa. Success in the person-to-merchant category has been limited. The reasons for the limited success of mobile money have been extensively studied and documented. A combination of contributing factors includes the provider's business case; the cost and difficulty of complying with regulation; the cost of managing agent networks and liquidity; consumers' lack of awareness, and trust and poor user interfaces.

One of the biggest challenges and the greatest weakness of these products from an end user's (both payer and merchant) perspective has been a lack of interoperability.[10] This shortcoming exists at several levels. In many countries, the customer of one mobile money provider cannot easily transact with a customer of another provider; a customer of one provider cannot use cash-in or cash-out services at an agent of another provider, and a mobile money customer cannot easily interact with a banked person or entity. It will be critical for policymakers to consider interventions to drive the use of these systems vis-à-vis cash, while moving toward inclusive payments infrastructures. The use of mobile money with Faster Payments holds significant potential, particularly in the low-income and informal segments.

Faster Payments

A Faster Payments[11] system is a real-time system meant for retail transaction purposes. In some ways, it is very similar to the RTGS systems used for wholesale transactions, in that the payment is completed practically immediately. This requires immediate clearing of the transaction, i.e., confirming the transaction, between the Payment Service Providers (PSPs) of the payer and the payee. When there are multiple providers of faster payment systems, interoperability is ideally required for the system as a whole to function effectively. Settlement of funds between the PSPs does not necessarily need to occur immediately; it could be done either on a deferred basis or on a real-time settlement basis. Faster Payments systems are also "push only"[12] systems, thus avoiding the risks and complexities of so-called pull payments systems while providing the payer with greater control and transparency.

New Faster Payments systems have been introduced, or are in the process of being implemented in a variety of countries by payment service providers. Unlike mobile money, which is often introduced as a single-provider service, Faster Payments are typically introduced as national interoperable services, hence designed to be part of the national payments infrastructure from inception. In some countries, the impetus has been to improve efficiency over slower legacy systems while in other countries, it has been driven by extending the reach of the payment system, hence also achieving financial inclusion goals. In general, faster payments have the potential to reduce cash-usage significantly.

Many systems take advantage of modern technology to provide simpler direct access by institutions, thereby reducing the need for costly, tiered access arrangements. Most provide for same-day or even real-time settlement among institutions, again reducing the cost and complexity of participation. Typically, they use international standards for messaging. As with other core payments systems, a set of proven system suppliers exists for countries planning to implement such systems.

Selected Countries – Faster Payments Systems

COUNTRY	YEAR FASTER PAYMENTS SYSTEM INTRODUCED	PRIMARY DRIVER	INTEROPERATES AMONG
Mexico "SPEI"	2004	Efficiency	Banks and Licensed Non-Bank FI's
U.K. "Faster Payments"	2008	Efficiency	Banks
Peru "BIM"	2016	Financial Inclusion	Bank and Non-Bank eMoney Issuers
Australia NPP	2018	Efficiency	Banks
Tanzania	2017	Financial Inclusion	Non-Bank eMoney Issuers
Jordan "JoMoPay"	2016	Financial Inclusion	Bank and Licensed Non-Bank MPSPs
Egypt	2016	Financial Inclusion	Bank and Non-Bank eMoney Issuers
Switzerland SIC	2015	Financial Inclusion	Banks

A Note on Crypto Assets and Blockchain Development

This note makes no policy recommendations regarding governance or economic implications of new technological developments of crypto assets, or their underlying distributed ledger technologies, which are gaining increasing attention and traction in certain markets. The development is noted with an eye toward considering the relative benefits and risks to end users. Much central bank attention has been paid to the risks that crypto assets may pose to economic stability, but there has been less discussion about the relative benefits to consumers of using these various technologies to digitize the lives of the previously excluded. Specifically, the following trends are noted as areas for further study and consideration, due to their possible implications for financial inclusion:

- The potential use of established non-sovereign crypto assets (e.g., Bitcoin) as a substitute for domestic currency, or as a transport between two sovereign currencies (for cross-border transactions).
- The potential use of sovereign-issued crypto assets (also termed Central Bank-issued Digital Currency) as a complement to physical coins, notes, and commercial bank money.
- The potential use of sovereign-issued crypto assets as an alternative to physical cash.
- The potential use of blockchain technology to provide secure, immutable records of account balances, transactions, and/or inter-institution settlement.

In considering the potential benefit, it remains relevant to bear in mind the risk of money laundering and terrorism financing based on the misuse of crypto assets. The anonymity of payments relating to crypto assets is an attraction for criminal activities and international policies, such as the European Union's 5th Anti-Money Laundering Directive, in order to mitigate such risks.

In addition, the issue of the inheritance of crypto assets, given the decentralized and often unregulated nature of such assets and the personal, secured access to the assets, require regulatory investigation.

The Demand Side Perspective: Inclusive Design but Lagging in Usage

As many countries in both the developed and developing worlds have found, having an open and inclusive payment infrastructure is not necessarily enough by itself to drive usage. Even where there is the option for many types of PSPs to join and theoretically enable consumer use cases, there is a noticeable gap between potential and actual participation.

End users may resist using digital payments for a variety of reasons. The most pervasive and troublesome barriers to participation and acceptance fall into three categories: the utility of the system, cost, and trust. All three of these categories apply both to consumers and to their counterparties in a payment transaction: merchants, billers, and other payments acceptors, as well as other consumers, governments, and employers.

2015 GPFI paper "Digital Financial Solutions to Advance Women's Economic Participation:" This paper recognizes that digital financial services are instrumental to achieving the UN Sustainable Development Goal 5 regarding gender equality, because their provision and use can increase women's financial autonomy, support women's participation in the labor force, and improve the performance of their businesses.

Barriers to the Use of Digital Payments

Replacing Cash: Cash has a high degree of utility for end users, including consumers and merchants, other payments acceptors, and large-scale payers. Cash is generally accepted everywhere, by all parties and for all purposes. It is simple to use and perceived to be free in most situations. There are exceptions, of course: Remittances, both domestic and cross-border, and most types of remote commerce demand cash alternatives. Not surprisingly, these use cases are the earliest examples of broad acceptance of digital payments.

- **Trusting Digital Technologies:** Confronted with new technologies, providers and end users alike face issues as to the trustworthiness and legitimacy of new systems. These include:
- **Lack of understanding of product:** End users and providing payments acceptors must confront new technologies in a situation of high perceived risk as their funds move across payments infrastructures with various system participants.
- Concern over the consequences: Concern over unknown consequences of use, for example unforeseen taxes levied or fees incurred, can breed distrust. This distrust may not stem from actual taxes or fees, but rather the uncertainty of their application.
- **Concern over fraud & abuse:** Consumers may distrust providers if they don't have effective assurances that proper redress mechanisms are in place to ensure their protection and the safety of their funds. Lack of adequate and appropriate supervision practices by the authorities on PSPs, either perceived or real, could be another source of concern particularly when the particular market is new and the sector participants are recently established or licensed.
- **Digital access gap and literacy:** In certain countries, there are large gaps in access and usage of ICT and payments infrastructure which can hamper wider adoption and usage of payments among rural and lower-income people.

- **Barriers to Consumer Use of Digital Payments – The Key Questions**
  - **Utility** – Can the payment solution be used to pay everyone I need to pay? Does the solution work for all the situations (use cases) in which I use cash today? How do I know how to address a payment to the person or business I am sending money to? Is it as time-efficient as cash? Do I know how much money I have available for a payment? Do I need to register or sign up to be able to receive payments? How convenient is it to cash in and cash out when I need or want to?

    Has the payment service been designed with me, as the user, in mind? Is the user interface understandable? Is it easy to use? Does this work for me, i.e., is it a seamless experience with little or no friction?
  - **Cost** – Is the perceived cost of the transaction equal to or lower than cash or my other alternatives? Are there transaction fees? Cash-in and/or cash-out fees?[13]

Competing with Cash

Consumers may not be willing to pay a service charge for making a payment if they perceive their alternatives (using cash) to be free. It is important to note with payments transactions that the issue of cost needs to be understood in the context of the purpose of the payment in question. A person may be willing to pay a transaction fee to send a domestic remittance, as the alternatives (bus driver, hawala system, etc.) may be perceived as costlier and/or riskier. That does not mean that the same person would be willing to pay a transaction fee to make a school payment, for example.

  - **Trust** – Will the system be available when I need it? Are my funds safe? Do I have protections that are reasonably accessible against fraud or error? Can I access a history of my transaction? Are uses of my data protected?

- **Barriers to Use of Digital Payments by Payment Participants**
  - Billers require, at a minimum, data fields in a payment transaction that allow them to identify a paying customer to the biller's account for that customer.
  - Governments and employers wanting to make payments to consumers or small businesses need a reliable and efficient way to execute the payments. Recipients should not be in a position where only specific types of consumer devices (accounts or wallets) must be used to receive payments, but any transactional device should be used. Interoperable digital payment systems are well suited to achieve these objectives.

Policy Options

Proposed options for policymakers specify actions to modernize payments infrastructures, moving toward openness and inclusivity. Each option or action hinges on motivating participants by way of three categories of incentives: ensuring utility, attention to affordability, and building trust. The following descriptions broadly define why these incentives are expected to motivate participation.

Incentives to Drive Participation & Use

Utility: The most organic motivator of participation in a system is utility: Does this system address a need? For payments systems, the dominant need is the ability to reach counterparties – to be able to pay anyone and be paid by anyone. Systems which welcome multiple providers and suppliers and include merchants and end users will increase the types and quantity of use cases that are offered to stakeholders, thereby expanding the ecosystem of stakeholders. These could include use cases which encourage digital liquidity – the ability to leave funds in a system for receipt and payment – and those which enable convertibility or "cashing out" of digital assets into physical currency.

Affordability: Keeping costs to a minimum for those least able or willing to pay will incentivize broad participation of providers and more active participation of users. Financial incentives and the promise of returns may motivate an open ecosystem of providers. Assurance that consumer costs will be minimal and that there is transparency about the financial consequences of a transition to formal digital systems, will help ensure inclusivity for demand-side participants and users.

Trust: The least quantifiable but most foundational motivator for participation in a digital payment system is trust. This means trust by providers, suppliers, and regulators in the soundness of the system, and trust by users (merchants, small and medium-size businesses, and customers) that transactions will be diligently carried out and funds will be securely held, debited, and deposited.

Also, the objective of this guide is not to be prescriptive. The various policy options presented must consider the specific domestic context, such as different stages of payments infrastructure development, legacy systems, and current acceptance of digital financial services among end users. There is no one-size-fits-all approach.

It is important to note that any guidance given in this document is not intended to be directed to or provided on behalf of the standards setting bodies (SSBs).

Actions to modernize payments legacy systems and move toward a more open and inclusive payments infrastructure

Modernization and increasing the openness and inclusivity of a payments infrastructure support G20 Principles of Digital Financial Inclusion 1 and 4. Creating an open infrastructure and aligning participants' incentives will attract new providers and increase the usefulness of the system.[14] In moving toward an open and inclusive payments infrastructure, it is necessary to consider financial stability risks, operational risks, AML/CFT and market-driven risks. Depending on the country context, a completely open and inclusive payments infrastructure comprising every provider in the market may not be the best solution for balancing financial inclusion with existing risks.

An example of the effect of using an interoperable system as opposed to a closed-loop system is evidenced in the South African social grants distribution program. Using a biometrically enabled closed loop system previously 61% of recipients still reverted to cash directly (i.e., made no use of the electronic payments capability), while this figure dropped to 29% when the distribution program changed to include a card-based solution using the interoperable payments capability in the country. Although this example is very specific to the country context, it does point to the significant positive effect of interoperability on usage.

The proposed policy interventions and implementations must take the country context, in particular the extent of the payment infrastructure, the maturity of the digital payments market (level of cooperation, usage of consumer payment devices and payment streams already in place, level of competition), the digital infrastructure in the country, and the regulatory capacity to deal with new payment streams and risks. In keeping with HLP of DFI 4, the overall goal of the following proposals is to strengthen financial inclusion by creating a "robust, safe, efficient and widely accessible retail payments and ICT infrastructure that provides all users with convenient, reliable points of service for sending and receiving payments and conducting other digital financial services." Increased affordability and utility and facilitated access to digital payments should incentivize merchant and consumer acceptance of digital financial services. At the same time, payment services providers need assurance that the payments infrastructure is financially viable, technically feasible, and compliant with laws and regulations.

Prioritizing Development of Interoperable Payment Systems Enabling Faster Payments

As has been extensively studied and endorsed by multiple organizations and mentioned in the Reference section of this Guidance Note, interoperable digital payment systems can provide lower-cost and lower-risk transactions, enabling greater participation in the payment system and increasing payment efficiencies. Faster Payments in particular are potentially able to take the adoption of digital payments for everyday use to new levels. However, moving from legacy payments and systems to a payments world enabling newer payments like Faster Payments requires sustained effort, investment, and skills enhancement by policymakers and regulators, as well as the involvement of all stakeholders in the process. These aspects are expanded on in this section. Although many countries are also struggling to modernize legacy systems, consideration should be given to whether new Faster Payments systems can replace some uses of legacy systems, reducing the costs and other burdens inherent in modernizing older systems. There are multiple ways in which the payment system can be modernized and extended, and the ideal route to determine this will be determined by the country context and the priorities of the main stakeholders.

As the development of the payment system requires significant investment, primarily from the payments infrastructure provider(s), but also from payment service providers, it is important that the Payments Regulator, typically the central bank, take a leading role in ensuring that the planning to achieve the desired future state is comprehensive and sound, that the goals are clearly defined, that potential risks are identified up front and that adequate measures are in place to identify and mitigate future risks. Policymakers and the regulator should strive to ensure that the governance and rules of interoperability and systems like Faster Payments support multiple use cases, as greater volumes flow through Faster Payments can reduce transaction costs for all participants.[15] However, it is not practical or feasible in many cases to move from the current reality to a future of ubiquitously available and accessible, interoperable and operationally robust and efficient, in a single step. It is therefore important to plan the evolution of the payment system with a view toward phased implementation where each phase will yield benefits to participants and users and the realization of these benefits is not dependent on future phases.

1. Interoperability

The policymaker and the Payment Regulator should drive toward interoperability of all payment streams, including enabling Faster Payments. There is no single best-practice route to establish this, but the following design elements should be considered:

- Use of international standards, especially in the exchange of information between systems, including transactional processing.
- Design the systems, including the Faster Payments system, for multiple-use cases, but consider the implementation on a case-by-case basis. This allows insights into the usage of the payment system to be incorporated in the final design and reduces operational and acceptance risk.
- The cost to the end user is crucial. In the early phases this is not a simple matter to determine, but costing (including the use of the central payment infrastructure) should be done on the basis of expected volume rather than short-term cost recovery. This should be the case for the infrastructure provider as well as for the payment service providers, although the latter's end-user fees are typically not directly controlled. It is a matter of positioning and designing the service for long-term benefit for all participants. In this design the responsibilities (and liabilities) of all participants must be clearly identified.
- In the design of new payment systems, identify the components that are required and re-use, as far as possible, components already implemented. For example, if the settlement system is structured to handle multiple payment streams, then there is no reason this system should be used for new payment streams as well. The use of the SADC Integrated Regional Electronic Settlement System[16] (SIRESS) for cross-border payment streams is an example of such an approach.
- To establish market acceptance and build trust, promote and secure the implementation of high-volume business cases. The role of payments emanating from government entities and due to such entities (G2P and G2B, as well as P2G and B2G payments) are crucial in this regard. It is therefore useful to select the first use case from this environment, e.g., in Ghana bill payments to Government was selected.
- Where feasible and where payment service providers do not already utilize a national ID system, it would be beneficial if the national payment system enables authentication against the national ID system if required. This will increase utility and enable informed risk mitigation measures.
- Ensure that all regulated PSPs are able to, either directly or through some direct participant in the payment system, have access to the payment system. This does not imply that every payment service provider should be granted access, but rather that the criteria for use are based on the risk introduced by the PSP and the technical/operational ability to participate in the system only and does not exclude certain categories of PSPs.

The eMoney Challenge

Non-bank PSPs may be denied access to legacy payments systems for reasons benign or otherwise. Payments system operating rules (often controlled by the banks that own the legacy system) may specify that membership is only open to banks. Regulators may also be concerned about risk management in allowing non-bank PSPs to have access. In some situations, it appears that banks are proactively trying to limit access to systems they have built.

Regardless of the reason, the denial of access is neither logical nor productive. All regulated PSPs should be prima facie eligible and, subject to risk considerations and demonstrated need for access, be allowed direct access if they so desire.

In some countries, eMoney issuers (sometimes referred to as "mobile money providers") are considered to have issued a form of electronic money that cannot or should not be exchanged with bank deposit money. Under these regimes, an eMoney interoperable payments system may exist, but the system can only transfer money between eMoney accounts of different issuers. In some countries, banks themselves become eMoney issuers if they want to participate in such a system (and customers need to have two accounts – a bank account and an eMoney account). This is undesirable from the perspective of sustainable financial inclusion.

2. Modernize Settlement Systems

Settlement systems should be modernized to support intra-day settlement of transactions. A development path toward handling real-time settlement and 24/7-hour settlement processing should be considered. This may require fundamental restructuring in how central bank settlement services are provided, or it may mean that central banks support a new class of commercial bank settlement services for Faster Payments. This should be understood as a long-term consideration: Central bank settlement systems are complex structures, and changes to them affect many parties and practices. But the global trend toward real-time, 24x7 payments will inevitably put demands on current settlement systems.

Real-time gross, or "semi-gross" settlement practices, such as those being used in Mexico's SPEI system or the U.S. Faster Payments, should be examined as potential models for other countries. Where country regulation allows new classes of non-bank transaction account providers to participate in payments, it is proposed that consideration be given to the economic burden of requiring these entities to hold transaction account funds both in escrow accounts (as a form of deposit insurance) and in settlement liquidity accounts. This "dual reserve requirement" may be logically unsupportable as these systems scale. Special attention should be given to openness vis-à-vis non-bank licensed transaction account providers, and regulators are encouraged to ensure that these providers can directly settle or settle through a bank with no adverse cost or collateral requirements.

3. Enable Faster Payments as Push Payments Only

In payments systems, "push" transactions are submitted to the payments system by the payer's PSP; "pull" transactions are submitted to the payments system by the payee's PSP. Push transactions (sometimes referred to as credit transfers) have no risk of insufficient funds. In situations where the payment "address" can only be used to push funds (emerging as best practice), there is limited risk[17] of unauthorized debits through the use of stolen payment credentials. Unless the risk can be managed appropriately, it is therefore advisable that the rules of the Faster Payments should limit the system to push transactions only. In some cases, a multilateral clearing algorithm may be considered to reduce the participants' needs for liquidity, thereby reducing costs. Clearly, there are situations where the payee wants to request funds: This is common with merchant payments and biller payments throughout the developed world. Policymakers are encouraged to support the emerging standards for "request to pay" messaging by merchants and billers. These requests are not payment orders but are delivered to the consumer (or their PSP) and can result in a "push" transaction. This is done to significantly reduce risks and, therefore, the overall cost associated with payment systems.

Faster Payments should ideally not be limited to any specific transactional device, so the objective should ideally be to enable the situation where a Faster Payments system in the country can transfer funds between any two transactional accounts in the country.[18]

Malaysia: An alternative to government-mandated cooperation can be seen in the management of industry-led funds and frameworks. For example, Malaysia's Payment Card Framework (an initiative of the central bank) includes a Market Development Fund. In this instance, providers have agreed to contribute. 10 percent of credit card transactions to the Fund, which are collected and re-invested in the deployment of POS terminals. Through this cooperative model, providers are set to meet the central bank's goal of enabling 800,000 POS terminals by 2020. Though created and supervised by the central bank, the fund's operations and program management are overseen by a private third party.

Brazil: Starting in mid-2010, Brazil's competition authority (CADE) informed card acquirers that they would no longer be allowed to exclusively accept a single card brand. Ending this exclusivity has led to a significant increase in competition and a dramatic lowering of the average merchant discount rate on credit transactions to 2.53 percent of transaction value in 2016 from 2.93 percent of transaction value in 2010, the year before the requirement was implemented.

4. Promote Cooperative Payment Stream Development and Operation

The necessity to involve all stakeholders in the various stages of establishing and operating payment streams was already highlighted in the 2017 *Building Inclusive Digital Payments Ecosystems* guidance note. The same is applicable in the Faster Payments environment. Competition should be encouraged at the consumer-facing level, rather than the infrastructural level. As a principle, it is suggested that policymakers support the concept that the extent of a provider's payments reach should not be the basis of competition. Rather, an interoperable and collaboratively managed payments system infrastructure should create a platform upon which innovation and competition can occur at the provider level. A market-based solution should be fostered in which payment services providers commonly cover ongoing costs, while allowing margins for profits.

Many countries are moving in the direction of having a single national Faster Payments system. Such an approach ensures concentration of volumes (with associated cost and risk management benefits) and makes "payments reach" very simple. Another option to reach this objective of a single payment stream is to link payment systems to each other, thereby achieving interoperability, instead of having just one single system.[19]

The cooperative approach extends to the governance of the system as well. A meaningful expansion of an infrastructure ecosystem will rely on active participation and trust at the provider (supply-side) level. Regulators should ensure that digital payment service providers participating in the Faster Payments have an adequate voice in the management of the scheme. This could take the form of either direct ownership and control, or it might involve the creation of a user group where the system, or a relevant part of the system, is provided by another entity, possibly the state.

5. Regulatory Considerations

As the number of participants and the roles that these participants play in the payments ecosystem increase, the complexity of determining and monitoring the risk in the system also increases. This requires that payment regulators develop additional capacity and use improved tools, particularly data management and analyses tools, to be able to perform their regulatory responses.

The issue of determining the risk of new capabilities to the payment functionality in the system is often a major issue in incorporating these innovations. There are a number of ways of dealing with this, as mentioned in the 2016 GPFI Innovative Digital Payment Mechanisms Supporting Financial Inclusion Stocktaking Report. It is advisable that newly developed capabilities are introduced in such a way that market impact is limited and that information on use, flow of transactions, the performance of the various role-players, and the impact in the payment system are immediately available for monitoring and intervention, if required.

FinTech and RegTech

An overarching consideration is to recognize the rapid evolution of what is known as "FinTech" – financial technology – and the challenges this presents to policymakers and regulators. Countries are encouraged to form cross-governmental working groups to jointly study trends and issues presented by evolving financial technology, and in particular to focus on ways of using automation in the regulatory compliance process, while ensuring that the responsibility for compliance is not usurped by the automated process. The combination of new technologies and new entrants makes "regulation as usual" not completely appropriate to the evolving landscape.

Putting advancements in technology and automation to use in compliance and monitoring, a concept often referred to as RegTech, may lessen burdens on providers and regulators, freeing up time and energy to proactively work toward incentivizing inclusion and stability. The use of regulatory experimental "sandboxes" (national or regionally shared) or "innovation hubs" may enable small-scale testing with large-scale implementations in the future.

Using innovations in regulatory technologies will enable authorities to carry out obligations under Principle 2, balancing innovation and risks, as they carry out modernization of their payments infrastructures and oversight.

Regulators are encouraged to establish standardized reporting and data collection, data exchange standards (APIs), and improved data protection and cybersecurity practices in the central bank. Where feasible, this should include enabling real-time monitoring. This approach can foster faster detection and management of fraud; encourage and enable smaller classes of providers to participate (by lowering, where possible, the cost of compliance while still adequately covering the risks), and assist with the increased capacity demand at central banks.

Mexico: The 2017 FinTech law aims to regulate its fast-growing financial technology sector, including crowdfunding and digital currency firms. Mexico joins a small but growing list of countries, including the United States and the UK, that have sought to regulate the FinTech sector.

Actions to Create Incentives for Merchant Payments Acceptance

Short and/or long-term financial incentives should be considered for target use cases.

6. Merchant Fees and Other Economic Incentives for Payments Acceptance

Merchant payments acceptance systems need to be sustainable and build enough reserves to cover ongoing costs, including the cost of market engagement. This requires a sustainable revenue model, with reasonable costs for the various users of the system. Merchants or other payments acceptors such as billers should, at a minimum, not be disincentivized by acceptance fees. This is particularly true for small businesses and informal retailers.[20] Acknowledging that national contexts vary, policymakers should, where appropriate, consider a variety of incentive measures, including:

- Subsidizing the cost of acceptance in the early stages of development. This could be achieved by the private sector (e.g., banks) being encouraged to look at financing options that would take the long-term revenue value of the digital transactions into consideration, thereby reducing the initial cost to the merchant of acceptance devices and enabling wider adoption.

  An alternative to subsidies is tax incentives for digital payments, where the national business case for such payments warrants this. However, careful consideration should be given to the pros and cons of such an approach. While tax incentives can assist in aiding adoption, it could also lead to unintended consequences like the inappropriate promotion of the subsidized payment types.
- Ensure that there is no "transaction extra charge" levied against PSPs; such charges are often passed on to merchants and present a significant barrier to acceptance. In addition, careful consideration should be taken to ensure a level playing field for formal and informal retailers.
- Consider the use of formal aggregators that connect to a clearing house and are able to group both formal and informal merchants. In this sense, merchants can accept payments regardless of their formalized status, significantly increasing the payment infrastructure.
- Ensure that merchant service providers are given sufficient ability to act on financial and non-financial adjacencies. Two of the most critical of these are enabling merchant and/or consumer lending related to electronic transactions and enabling the use of consumer and merchant data (subject to the data protection requirements) in enabling access to appropriate financial services. The use of mobile payment history as a proxy for turnover for small retailers in Indonesia is an example of such an approach.

United States & Kenya: The US company Square has incentivized acceptance through adjacencies. Square not only streamlined the POS with an elegant technological solution, but it enhanced its value proposition to small merchants by appealing to their comprehensive needs, not just as acceptors, but as small businesses. The Square product now offers a suite of value-added services which include employee and payroll management, inventory databases, customer engagement platform, and instant unsecured lines of credit. Kopo Kopo in Kenya follows a similar model. Taken together, the success of these companies speaks to the promise of value-added services in making electronic payment acceptance a more attractive proposition for merchants. It is important to note that ramifications of these innovations such as merchant debt management, will likely be a future consideration for regulators and policymakers.

- Increase transparency in the market, through the disclosure of exchange fees, discount rates, and other commissions.
- If necessary, consider changing regulations to allow PSPs and other payment services providers to lend money to small merchants based on a Faster Payments transaction history. There is considerable evidence to support the idea that doing so would enable the provider to charge lower merchant processing fees. This is evident in Kenya and China, among other countries.
- Merchants and other payments acceptors should be able to self-enroll electronically for electronic payments acceptance in a simple and easy-to-use manner. The capabilities of new technological developments to allow for such digital onboarding while still meeting AML/CFT requirements should be encouraged.
- Non-financial incentives could be considered, e.g., automated reporting (fiscal, compliance), training, and real-time support, etc.
- Where appropriate to national taxation schemes and oversight, authorities should consider incentivizing the use of newly introduced payments, e.g., Faster Payments, for merchant supplier (B2B) transactions by providing tax incentives to merchants who purchase goods and services using electronic payment methods.

  The Visa report *Perspectives on Accelerating Global Payment Acceptance* states that merchant incentive programs tend to be successful in predominantly cash-based markets with limited acceptance infrastructure but a reasonable card base, that is where there is reasonable penetration of transactional accounts. In countries with an established base of POS terminals but relatively low level of card payments, volume-based incentives (the higher the usage the greater the incentive) aimed at promoting general consumer usage have proven to be more effective.

7. Shared Services

In some countries, providers may find that investing in common infrastructure (for example, a shared service for merchant enrollment, or for fraud detection and management) makes sense. This should be encouraged and accepted by competition authorities.

Colombia: A new law came into effect in 2017 requiring that new concession contracts for toll roads must enable toll collection across all forms of electronic payment. Interoperability serves to promote competition among payment methods while promoting funding away from cash.

Actions to Create Incentives for Consumer Use of Electronic Payments

India: To incentivize electronic payments, the government of India launched a digital lottery scheme called "Lucky Grahak Yojana" for consumers and " Digi Dhan Vyapar Yojana" for merchants. Consumers and merchants are eligible to enter the lottery scheme if they make electronic payment transactions using select government-sponsored payment services.

8. Encourage Lower Costs and Promote Market Protection

- Consumer fees should be as low and reasonable as possible, especially for underserved populations. But the appropriate fee, if any, will depend on the use case and consumer alternatives. Consumer lottery schemes ("will your next bus ticket be free?") can also have a positive impact both on perceived cost and consumer awareness.
- As recommended in HLP on DFI 5 on Consumer Protection, it is important to establish clear and uniform regulations around the protection of consumer funds in accounts; the establishment of redress mechanisms, and access to consumer protection information. Consider requiring active transaction confirmation (from receiving institution) prior to initiation of P2P transactions.
- For B2G and P2G transactions, provide discounts or other incentives for payments made electronically. For merchants, these could include service charge reductions, reduced rates for merchant accounts, or reimbursement of fees. For consumers, financial incentives could include rebates, consumer rewards, loyalty programs, or government-sponsored lotteries.[21] Incentives are subject to country circumstances, with countries like Korea and Uruguay providing examples of incentive measures adopted.

  The Visa report stressed that the incentives should always be tied to usage and that such incentives appear to work best in markets where cash makes up a significant portion of personal consumption spend or where strong shadow economies exist. In such circumstances the incentives could be aimed at increasing acceptance in segments where cash is particularly prevalent.

Australia: Support for digital communications infrastructure in the Indo-Pacific is bringing connectivity to hundreds of thousands of people in some of the most remote places on earth. Australia has contributed technical expertise and financial resources to lay a fiber-optic submarine cable connecting Samoa and Fiji. This has facilitated improved internet access at more affordable prices. They have also supported projects to enhance mobile coverage in the Solomon Islands and Kiribati, and are now laying a new submarine cable that will provide faster and more stable internet connectivity to the Republic of Palau.

9. Improve Telecommunications Network Availability and Reliability

In many countries, physical access to payments systems is still lacking due to problems with the availability and reliability of the telecommunications network. Policymakers are encouraged to work with global groups (such as the International Telecommunication Union) that are focusing on ways of standardizing the measurement of network availability and improving reliability. Policymakers and financial regulators should work with the telecommunication regulator and the main communication providers in country, developing a coordinated approach to address areas with inadequate communications infrastructure.

10. Improve Consumer Awareness and Education

As recommended in HLP on DFI 6 on Financial Literacy, it is important that policymakers initiate coordinated and structured market awareness education campaigns, particularly with respect to new Faster Payments. While this should be government-led, all stakeholders should be involved and should be encouraged to engage their ecosystems to take the agreed messages to the market. Market communication is s made easier where the providers involved have agreed on a common brand or descriptor (for example JoMoPay in Jordan, BIM in Peru, SPEI in Mexico).

Support Cross-Border Regional Payments Systems

There are a number of initiatives underway or in planning stages to develop regional payments systems. Some of these are focused on cross-border transactions only, while others have broader visions of supporting both domestic and cross-border transactions. The World Bank's *Guidelines* describes a number of initiatives sharing settlement, clearing, and retail infrastructures.

The ongoing development of regional capabilities and agreements in the Southern Africa Development Community (SADC) is an example of such a regional approach, commencing with a shared electronic settlement system (SIRESS) and adding domestic and cross-border transaction streams to the payment ecosystem, with the central banks establishing an agreed governance model for the system. In many of the SADC countries financial exclusion is still a significant, albeit declining, factor. Person-to-person remittances are therefore of significant importance in the region and this led to the establishment of a project to pursue the establishment of such a service, using the clearance and settlement infrastructures already in place or under development. Since remittances involve additional role-players (as opposed to more traditional payment streams involving mainly banks), the first step in the establishment of this service is a harmonization of the regulatory frameworks in the countries to ensure similar measures are in place to oversee these role-players.

Authorities in other regional alliances are encouraged to explore the possibility of using regional approaches to processing domestic payments transactions. The latter may be of significant benefit in the development of infrastructures to further extend financial service provisioning. Greater volumes through regionalization of processing will drive down costs, incentivizing participation through affordability and ease of use. Such a regional approach should take the need for effective governance arrangements at the regional and the national level and the protection of sovereign rights and powers into account. Policymakers are encouraged to watch and support such efforts, while considering overall cost-benefit and the implications for their national payments infrastructure. In particular, ensuring that the environment allows for competition in this approach, at both the regional and national level, should receive due attention.

The World Bank's **"Guidelines for the Successful Regional Integration of Financial Infrastructures"** are designed to address commonly experienced barriers and challenges to efficient, effective, and safe regional financial infrastructure integration, to improve accessibility and reachability for customers, and to help minimize the various costs and risks.

Conclusion:

Achieving a More Open and Inclusive Payments Infrastructure and Creating Incentives for the Use of Digital Payments

While there are many benefits to having an open and inclusive payments infrastructure, moving toward this ideal is not easy. It requires the challenges outlined in this paper to be addressed. New classes of service providers need to be recognized and regulated. Providers' economic challenges must be understood and addressed. Emerging technologies need to be incorporated and risk-managed. Consumers and small enterprises need to be made aware of services and how they are used, while also protected from harm when using them.

Creating the right incentives to increase the acceptance of digital payments, particularly by informal retailers, may be a critical step that complements an open and inclusive payments infrastructure. Encouragingly, many countries are well on their way to addressing these issues, often as a part of a national financial inclusion strategy and plan. It is anticipated that the possible actions outlined in this note will contribute to a smooth transition toward fulfilling the promises of such digital payment systems.

References

Argentina Priorities Paper, GPFI 2017.

Australia's international Cyber Engagement Strategy (2017).

Accelerators to an Inclusive Digital Payments Ecosystem. Better Than Cash Alliance, 2016.

Bolt et al., "Incentives at the counter: An empirical analysis of surcharging card payments and payment behaviour in the Netherlands" in Journal of Banking & Finance, Vol 34, Issue 8, August 2010, pp. 1738–1744Building Electronic Payment Acceptance at the Base of the Pyramid to Advance Financial Inclusion. MasterCard, 2017.

Building Inclusive Digital Payments Ecosystems: G20 Guidance Note for Governments. Better Than Cash Alliance, 2017.

CPMI (2015) "Consultative Report: Payment aspects of financial inclusion," BIS and World Bank.

CPMI (2016) "Fast payments – Enhancing the speed and availability of retail payments," https://www.bis.org/cpmi/publ/d154.pdf;

Camera et al., "An Experiment on Retail Payments Systems" in Journal of Money, Credit and Banking, Vol. 48, Issue 2–3, March-April 2016, pp. 363–392.

Digital Finance for All: Powering Inclusive Growth in Emerging Economies, McKinsey Global Institute, 2016.

Executive Summary of ITU Focus Group Digital Financial Services Outputs. ITU, 2016.

Fighting Poverty, profitably: Transforming the Economics of Payments to Build Sustainable, Inclusive Financial Systems. Bill & Melinda Gates Foundation, Financial Services for the Poor, 2013.

Guidelines for the Successful Regional Integration of Financial Infrastructures, World Bank, 2014.

GPFI Digital Financial Solutions to Advance Women's Economic Participation 2015.

G20 High-Level Principles for Digital Financial Inclusion. GPFI, 2016.

Global Standard-Setting Bodies and Financial Inclusion: The Evolving Landscape. GPFI, 2016.

Global Payments Survey Data (GPSS). The World Bank, 2016.

Humphrey, D. et al., "Realizing the Gains from Electronic payments: Costs, Pricing, and Payment Choice," in Journal of Money, Credit and Banking, Vol. 33, No. 2, Part 1 (May, 2001), pp. 216–234. Innovation in Electronic Payment Adoption: The case of small retailers. World Economic Forum & World Bank Group, 2016.

Innovative digital payment mechanisms supporting financial inclusion stocktaking report. GPFI, 2016.

Jae Sung, M., Awasthi and Chul Lee, H., 2017, "Can Tax Incentives for Electronic Payments Reduce the Shadow Economy? Korea's Attempt to Reduce Underreporting in Retail Businesses," Policy Research working paper; no. WPS 7936. Washington, D.C.: World Bank Group.

Kylie et al., "Price incentives and consumer payment behaviour" in Journal of Banking & Finance, Vol. 34, August 2010, Issue 8, pp. 1759–1772.

Ley Mexicana para Regular Instituciones De Tecnología Financiera 2018.

CBN Electronic Payments Incentive Scheme (EPIS) – Efficiency Awards, Nigeria Central Bank, 2017.

Payments Aspects of Financial Inclusion (PAFI). Word Bank and CPMI – 2015.

Payment Services (PSD 2) – Directive (EU). European Commission, 2015.

Perspectives on Accelerating Global Payment Acceptance, Visa, 2016.

Principles for Financial Market Infrastructures. Bank for International Settlements, 2012.

Role of Non-Banks in Retail Payments. Bank for International Settlements/CPMI, 2014.

Responsible Digital Payments Guidelines. Better Than Cash Alliance, 2016.

State of the Industry Report on Mobile Money – Decade Edition. GSMA, 2016.

Western Africa – BCEAO Regional Payment Systems Project, World Bank, 2000.

World Bank (2016) "Innovation in Electronic Payment Adoption: The case of small retailers," Washington, D.C.: World Bank Group.

World Bank (2012) "Developing a comprehensive national retail payments strategy," Financial Infrastructure Series, Payment Systems Policy and Research, Washington, D.C.;

Glossary

The term **digital financial services (DFS)** can be thought of as including three components: the transaction accounts which consumers, businesses, governments, and other entities use to hold funds; the payments services that allow payments to be made from and received into these accounts, and the broader set of financial services (investments, lending, insurance, etc.) that allow end users to manage their financial lives.

The term **payments infrastructure** is typically used to describe the set of payments systems which connect transaction account providers and allow for the interchange of transactions. These systems may be paper, card, or electronic.

The term **payments ecosystem** is used to include the shared infrastructures that enable payment systems, as well as various users, supporting providers, private (closed-loop) payments systems, and other adjacent services.

The term **payments reach** is used to mean the ability of any player to reach any payee.

Other Key Terms

There are a number of detailed glossary of digital financial services terms. One such was completed by the ITU's Digital Financial Services Focus Group in 2016.[22] Note that many terms have no single recognized, industry-standard definition. Key terms used in this document, and their definitions, are below.

TERM	DEFINITION
PSP	Payment Services Provider – an entity that provides payment services, including remittances. Payment service providers include banks and other deposit-taking institutions, as well as specialized entities such as money transfer operators and e-money issuers.
RTRP (Faster Payments)	Real-time retail payments system.
eMoney Issuer	A special category of licensed non-bank PSP
Financial Services Provider	A payment services provider that is not licensed to provide transaction accounts (i.e., not a PSP)
ACH	Automated clearinghouse
RTGS	Real time gross settlement system
Transaction Account	An account which holds funds, and which can be used to make or receive payments
Payments System	A system of effecting the transfer of payments among participating PSPs. Includes both the physical switching capabilities and the rules which govern it.
Payments Infrastructure	The set of open-loop payments systems within a country.
Payments Ecosystem	The payments infrastructure plus other players who use or work with the payments infrastructure

Notes

1 The McKinsey Global Institute *Digital Finance for All* report estimates that governments could save up to $110bn annually by using digital payment systems and that lower-income countries could boost GDP by 10 – 12% through the increased use of digital payment systems and digital financial services in general.

2 "regulated" in this sense implies, *inter alia*, that the providers meet the minimum standards and requirements related to risk management imposed by the regulators and the payment system operators.

3 The GPFI Financial Consumer Protection and Financial Literacy Subgroup focuses on this aspect – see the 2018 Workplan for this subgroup https://www.gpfi.org/sites/default/files/documents/GPFI_2018_FCPFL_Subgroup_WorkPlan.pdf

4 "Interoperability" in this context refers to interoperability across Faster Payments, not interoperability between Faster Payments and other payment streams.

5 GPFI 2017 Argentina Priorities Paper https://www.gpfi.org/sites/default/files/gpfi_argentina_priorities_2018.pdf.

6 See footnote 2

7 The CPMI/World Bank PAFI report defines the term "transaction account" as accounts held with banks or other authorized and/or regulated service providers (including non-banks), which can be used to make and receive payments. Transaction accounts can be further differentiated into deposit transaction accounts and e-money accounts.

8 This mimics a widely used model in which individual financial institutions in a country enter into bilateral agreements with external remittance providers.

9 See for example The Mobile Gender Gap Report 2018 *GSMA Connected Women*.

10 With the exception of the singular case of Kenya, where the dominance of the M-PESA provider creates the effect of interoperability without actually having interoperability.

11 The CPMI defines fast payments "as a payment in which the transmission of the payment message and the availability of "final" funds to the payee occur in real time or near-real time on as near a 24-hour and seven-day (24/7) basis as possible."

12 Pull payments occur when the transaction is submitted to the system by the payee's bank or institution; that bank needs the payer's credentials or alias to submit the transaction. A push payment on the other hand, occurs when the transaction is submitted to the system by the payer's bank or institution: that bank needs the payee's credentials or alias to submit the transaction.

13 Available evidence suggests that the consumer is sensitive to the cost and pricing of payment methods. See Humphrey, D. et al., "Realizing the Gains from Electronic payments: Costs, Pricing, and Payment Choice," in *Journal of Money, Credit and Banking*, Vol. 33, No. 2, Part 1 (May, 2001), pp. 216–234; Bolt et al., "Incentives at the counter: An empirical analysis of surcharging card payments and payment behavior in the Netherlands" in *Journal of Banking & Finance*, Vol 34, Issue 8, August 2010, pp. 1738–1744; Kylie et al., "Price 8 incentives and consumer payment behavior" in *Journal of Banking & Finance*, Vol. 34, August 2010, Issue 8, pp. 1759–1772; Camera et al., "An Experiment on Retail Payments Systems" in *Journal of Money, Credit and Banking*, Vol. 48, Issue 2–3, March-April 2016, pp. 363–392.

14 World Bank (2012) "Developing a comprehensive national retail payments strategy," *Financial Infrastructure Series, Payment Systems Policy and Research*, Washington, D.C.

15 Garcia Arabehety, P.; Chen, G.; Cook, W. and McKay, C. (2016) "Digital Finance Interoperability and Financial Inclusion: A 20-Country Scan", *CGAP Working Paper*, http://www.cgap.org/publications/digital-finance-interoperability-financial-inclusion

16 An automated interbank settlement system which settles payment obligations between participating banks in the Southern African Development Community (SADC).

17 There are remaining risks like identity theft and device takeover (e.g., SIM takeover) and these should be mitigated through adequate risk management.

18 CPMI (2016) "Fast payments – Enhancing the speed and availability of retail payments," https://www.bis.org/cpmi/publ/d154.pdf;

19 Ibid.

20 World Bank (2016) "Innovation in Electronic Payment Adoption: The case of small retailers," Washington, D.C.: World Bank Group.

21 A recent World Bank Policy Research Working Paper highlights that Korea's tax incentive scheme helped increase card payments as a ration of Korea's GDP reaching 49% in 2014, the world's highest. In addition, tax revenue also increased by a net W 1.4 trillion (approximately US$ 1.3 billion). The tax incentive scheme also had a positive impact on income distribution, decreasing the Gini coefficient by 0.11 percentage points. For additional information, see Jae Sung, M., Awasthi and Chul Lee, H., 2017, "Can Tax Incentives for Electronic Payments Reduce the Shadow Economy? Korea's Attempt to Reduce Underreporting in Retail Businesses," Policy Research working paper; no. WPS 7936. Washington, D.C.: World Bank Group.

22 https://www.itu.int/en/ITU-T/focusgroups/dfs/Documents/201701/ITU_FGDFS_DFS-Glossary.pdf

G20
ARGENTINA 2018
BUILDING CONSENSUS FOR FAIR AND SUSTAINABLE DEVELOPMENT

GPFI
Global Partnership for Financial Inclusion

BETTER THAN CASH ALLIANCE