Tools for Digitizing Government Payments
Learnings from FISF
FINANCIAL INCLUSION SUPPORT FRAMEWORK
MAY 2021
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NOTE

1. The corresponding author can be contacted at iulhaq@ifc.org.
# LIST OF ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>B2G</td>
<td>business to government</td>
</tr>
<tr>
<td>CIN</td>
<td>Citizen Identity Card</td>
</tr>
<tr>
<td>FISF</td>
<td>Financial Inclusion Support Framework</td>
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<tr>
<td>GIM-UEMOA</td>
<td>Interbank Electronic Banking Group of the Economic and Monetary Union of West Africa</td>
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<tr>
<td>G2B</td>
<td>government to business</td>
</tr>
<tr>
<td>G2P</td>
<td>government to person</td>
</tr>
<tr>
<td>KYC</td>
<td>know your customer</td>
</tr>
<tr>
<td>MNO</td>
<td>mobile network operator</td>
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<tr>
<td>PSP</td>
<td>payment service provider</td>
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<tr>
<td>P2G</td>
<td>person to government</td>
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Governments are often the largest users of a country’s payment systems. They frequently make payments to and receive payments from individuals and businesses. There is considerable variation in these payments across counterparty actors, use cases, and payment mechanisms. For instance, payments could be made to low-income individuals through a mobile-money transfer as part of a social-assistance program. Another possible transaction may include receiving license fees from businesses through electronic credit transfers.

Government payments attract the attention of policy makers due to their central role in a country’s payment ecosystem. Of particular policy interest is the substantial impact that an improvement in government payment mechanisms can have on government efficiency, public welfare, and the broader economy. In addition, the government can also utilize its unique role in the payment system to promote financial inclusion by influencing the choice of the payment medium. Financial inclusion can be achieved by adopting and using retail payments that require the user to own an account at a financial institution. Retail payments are those that are made by consumers and carried out on a day-to-day basis. The payment instruments associated with retail payments include cash, checks, vouchers, cards, and electronic fund transfers, which can be executed through digital channels such as wallets, and internet and mobile banking.

Policy makers often seek to realize this potential by modernizing government payments through digitization. This is often an extensive exercise that involves a comprehensive diagnostic, an upgrading of existing infrastructure, the creation of new infrastructure, and revision of the related regulatory and policy framework. Such initiatives often involve a range of stakeholders, such as various government agencies, the government treasury, payment service providers (PSPs), and telecom providers. Hence, digitizing government payments requires a strategic approach that involves detailed planning and extensive coordination at various levels.

Several tools can facilitate efforts of policy makers on this front. For instance, a cost-of-payments survey can be undertaken when evaluating the need for digitization and the value addition from it. Such a survey can help to uncover the true costs of payments, particularly retail payments, in the existing setup for various stakeholders and quantify potential savings from moving to a more efficient system. In case of interest in undertaking digitization, an exercise to map government payments can also prove to be valuable, as it helps to understand existing payment flows to and from various government agencies. It can also capture any previous or ongoing stand-alone digitization projects. An assessment of the existing landscape can allow for the identification of gaps and opportunities as well as guide the eventual design of the envisioned architecture. Finally, an implementation roadmap, which outlines the sequence of key steps that need to be undertaken for the proposed technical and functional architecture, is strongly recommended for successful digitization of government payments.
This note documents the experience of several countries that leveraged these tools under the Financial Inclusion Support Framework (FISF) program. FISF is a World Bank Group initiative that aims to accelerate and increase the effectiveness of reforms and other country-led actions to achieve national financial inclusion goals. In this context, FISF has supported, to varying degrees, the digitization of government payments in Côte d’Ivoire, Indonesia, Mozambique, Vietnam, and Zambia.

However, the choice of tools for digitizing government payments is specific to an individual country’s context. Therefore, the tools discussed in this note may not be relevant or applicable to other countries. Other available tools that are not covered in this note include recipient and merchant surveys, geospatial mapping of recipients and financial access points, and customer journey mapping.

The rest of the note is structured as follows: Section II covers a survey of retail payment costs conducted in Pakistan. Section III documents the government payment-mapping exercise undertaken in Côte d’Ivoire, while section IV discusses the resulting roadmap for implementation. Section V presents some implementation challenges and learnings in digitizing government payments in FISF countries (also outlined in box 1).

**BOX 1**

**Implementation Lessons for Digitizing Government Payments**

1. **High-level commitment is important:** High-level commitment is critical to ensure effective coordination among diverse stakeholders and to provide overall strategic guidance. This can be done in several ways, such as by providing an enabling legal foundation (without being too prescriptive) for the digitization of government-to-person payments or incorporating it in a national-level strategy.

2. **Phased implementation can be efficient:** A gradual rollout or phased implementation of a widespread digitization initiative can help to mitigate several issues related to scale as well as limit the magnitude of potential downsides should a setback arise in implementation. A phased implementation could also serve as an opportunity to evaluate the program’s ability to achieve desired outcomes and learn from initial implementation drawbacks.

3. **Beneficiaries should be allowed choice in delivery:** Allowing choice in delivery can improve implementation by (i) creating convenience, as beneficiaries choose the delivery mode best suited to their specific needs; (ii) encouraging financial inclusion through the provision of more options; and (iii) increasing reach by leveraging more providers.

4. **Embedding financial-literacy programs can be valuable:** Beneficiaries typically have low financial-literacy levels that can cause difficulties in implementation. Incorporating financial-literacy training around “teachable” moments in government payment processes can improve effectiveness, reduce fraud, and encourage financial inclusion.

5. **Existing infrastructure challenges need to be addressed:** While the lack of adequate infrastructure should not deter digitization, it is important to address such constraints in parallel to ensure last-mile delivery.

6. **Digital payments should be used as a gateway to other financial services:** Most beneficiaries tend to use accounts only to receive transfers of government payments. Additional efforts, such as financial-literacy training and innovation in financial services, need to be undertaken during implementation to encourage beneficiaries to use their accounts to meet other financial needs.
Retail payments are those that are made by consumers and carried out on a day-to-day basis. Inefficiencies in the retail payment market can result in high costs to an economy. These may be direct monetary costs to various stakeholders, including vulnerable segments of the society such as low-income households, through high fees related to the use of a payment instrument. Indirect costs may arise from frictions that develop due to an inefficient payment market, resulting in potentially lower trade and decreased overall economic activity. Additionally, inefficient payment systems can also act as a significant barrier to financial inclusion. In the context of government payments, inefficiencies would include excessive reliance on cash or paper-based instruments, leading to less secure, more expensive transactions.

Despite their significance, the hidden costs of a payment market due to inefficiencies can be hard to quantify. A lack of visibility on this front hides the true cost of an inefficient system and hence can distort policy making in the financial sector and beyond. Greater awareness of the cost of a payment market can establish the incentives to shift to a more efficient system by building a business case to do so. A better understanding of the economic implications can create a sound basis for wider initiatives, such as the digitization of government payments or adoption of a national retail payment strategy. In addition, shedding light on cost variations across the payment market can also better guide the design and implementation of such initiatives to ensure maximum impact.

These reasons motivate the need for a detailed study of the costs related to payments in a country. Such a study can be vital in highlighting the inefficiencies among different payment streams, including within government payments, and consequently underlining the need to shift to more cost-efficient payment instruments, such as electronic payments. It can therefore serve as a good starting point for policy makers interested in exploring the digitization of government payments.

The FISF program supported a study of the cost of retail payments for Pakistan in 2018. Calculating the cost of retail payments in Pakistan is important for evidence-based policy.

The cost of retail payments study measured the cost of different payment methods in use among local consumers by adopting the methodology outlined in the World Bank’s Retail Payments: A Practical Guide for Measuring Retail Payment Costs (Lammer, Banka, and Kostova 2016). This methodology addresses the following dimensions: (i) on the demand side, costs borne by payment service users—that is, consumers, businesses, and government agencies—in their roles as payers and payees; (ii) on the supply side, PSPs and payment infrastructure providers; and (iii) the overall economy. It builds on and forms an integral part of the World Bank Group’s Retail Payments Package. The methodology aims to meet the following criteria: (i) applicability, (ii) comparability, (iii) efficiency, and (iv) standardization.
2.1. DIGITAL PAYMENT LANDSCAPE IN PAKISTAN

Pakistan has struggled with low account ownership rates. (Only 21 percent of adults had a transaction account in 2017, as per Findex.) Of particular importance is the significant gender gap in account ownership: 35 percent of males but only 7 percent of females own an account.

The retail payment ecosystem in Pakistan comprises different access points and channels, such as real-time online branches (physical branches of banks where customers can use real-time online banking services), ATMs, points of sale, internet and mobile banking channels, call centers, and e-commerce platforms. In 2017, use of digital payments, while increasing, was still low, at approximately 18 percent of adults. Only about 7 percent of adults had a mobile-money account. However, the COVID-19 pandemic had an important effect on the adoption of digital payments: for the third quarter of 2020, e-banking payments increased 13 percent in volume and 22 percent in value in comparison to the same quarter of 2019. During the third quarter of 2020, the number of mobile banking transactions increased more than 139 percent over the same period of 2019; e-commerce merchants increased over 53 percent; and internet and mobile banking users increased 25 percent and 41 percent, respectively (State Bank of Pakistan 2020).

2.2. COST OF RETAIL PAYMENTS STUDY FOR PAKISTAN

The study was based on a nationally representative survey of 3,510 adults (aged 18 and older) across Pakistan. The purpose of the survey was to capture details of payments made and received by local consumers in the prior 12 months, as well as details of the corresponding payment instruments used in such transactions. Detailed data on the transaction types and frequency, volumes, values, and use of various instruments and services by individuals was also recorded.

The study found that almost all transactions conducted by an average adult in Pakistan (98.9 percent) are cash based. On average, adults in Pakistan made 229 payments the year before the survey. Person-to-person payments were the most common payments received by adults; 11 percent received domestic remittances at least once in the last 12 months. There was significant variation in the type of payments made across genders and provinces. On average, adults in Pakistan received 47 payments in the year before the survey. Person-to-business payments were the most frequent; 79 percent of respondents had paid a business for goods or services.

Approximately 22 percent of adults reported payments from or to the government. This varied by gender and province. While men made most of the payments to government (for example, taxes, fines, fees related to various government services), women were the primary recipients of payments from the government (for example, social-assistance transfers, government wages). Social assistance was the most common type of government payment; 86 percent of such payments were made in cash. This was significantly higher in the provinces of Sindh and Khyber Pakhtunkhwa.

The survey data also allowed for the estimation of costs of different payment instruments used in retail payments. The average total cost of conducting a single cash payment in Pakistan is 36.9 Pakistani rupees (PKR). Paper-based instruments such as paper checks and money orders are costliest. Other transactions made via processes that include intermediaries such as agents and tellers are more expensive than methods that use technology to improve payment efficiency. In contrast, direct mobile-money payments are the cheapest methods for Pakistanis to conduct their transactions. In fact, cash transactions are about 70 percent more expensive than transactions via a mobile-money wallet (PKR 25.3).

The analysis highlights significant potential for savings by digitizing government payments, particularly social-assistance transfers, as 86 percent of these are made in cash. The average government-to-person (G2P) payment incurs a high cost of PKR 181.8. If all such payments are made using the cheapest instrument, mobile-money wallets, then the average transaction costs are likely to go down substantially for consumers. Actual cost savings will fluctuate according to individual circumstances. For example, individuals in remote areas who have to travel extensively to get their social-assistance payments, or for whom the probability of fraud is high, might be better off from a conversion to digital instruments. Similarly, women and low-income households are also expected to benefit significantly, as they constitute a bigger portion of recipients and are more likely to face higher access costs with cash or paper-based instruments. However, as a word of caution, in places that do not have advanced payment systems and infrastructure, beneficiaries might face comparable or higher costs in the transition to digital payments due to limited access to cash-out points, high cash-out fees, and unsuitable financial products.

The study presented strong evidence to support digitization of government payments, especially for social-
assistance transfers. The study recommended leveraging the position of the government as the single largest end user of payment services in Pakistan to facilitate migration to more efficient payment instruments. It built a strong business case for digitization of government transactions by highlighting significant cost savings as well as identifying that vulnerable groups would benefit disproportionately more from such an initiative. Additional arguments included being able to influence the choice of instruments for a large number of transactions and individuals, hence potentially boosting financial inclusion.

While such surveys focus primarily on the costs and savings of payment methods, they may be used additionally to understand demand-side elements of various payment instruments. This is not necessary but can help to save costs related to surveying if a separate demand-side survey is also planned. For instance, in Pakistan, survey data showed that there was a widespread lack of awareness of formal payment instruments, especially digital instruments. Nevertheless, those who were familiar with digital payment instruments held a largely favorable view of them. This is especially true for young adults, who were reported to be more confident about using a mobile phone for financial transactions.

The findings from this survey were leveraged by the State Bank of Pakistan and are reflected in its newly launched National Payments Systems Strategy. The strategy recognized the critical role of leveraging large recurrent payment streams, such as government payments, in modernizing the payments infrastructure in Pakistan. This motivates the focus of the National Payments System Strategy on accelerating the transition to electronic payments by all government entities. The case of Pakistan illustrates the benefit of better understanding costs of existing payment mechanisms and potential savings of digitizing to create the necessary incentives required for authorities to undertake a transition to digital payment instruments.

NOTES
2. The study surveyed consumers only. To capture economy-wide payment costs and potential savings from shifting to more efficient payment instruments, additional surveys of governments institutions and businesses need to be undertaken. These were not planned under FISF due to timeline and budget constraints.
3. The State Bank of Pakistan defines “e-banking” as transactions conducted through real-time online banking, ATMs, points of sale, internet banking, mobile phone banking, call centers, and e-commerce.
4. The total sample size was 3,510 adults, and the total transactions in the sample were about 968,000.
5. This includes time costs from access channel (PKR 23.50), time costs from instrument (PKR 0), transportation costs (PKR 2.1), costs from theft (PKR 0.7), cost due to access channel (PKR 0.7), fees due to instrument (PKR 8.9), holding costs (PKR 1).
6. The average exchange rate for the year 2018 was PKR 121.82 per US$1.
Government transactions often constitute a significant, if not the largest, portion of a country’s payments. In addition to the scale of payments being made and received, there is considerable variation in these payments across counterparty actors, use cases, and payment mechanisms. For instance, payments could be made to low-income individuals through a mobile-money transfer as part of a social-assistance program. Alternatively, governments may receive operating license fees from businesses through electronic credit transfers.

Given the complexity of payment flows in any government, it is valuable to conduct an exercise to map all government payments. This sheds light on the volume, value, type, and method of payments being made and received across government institutions. Visibility into payment flows is particularly crucial for the process of digitizing government payments, as it offers a detailed assessment of the existing landscape, enabling the identification of both gaps and opportunities. It can also map ongoing efforts to digitize government processes and payments, which may be important to incorporate within a wider digitization effort.

A mapping exercise for government payments was undertaken in Côte d’Ivoire under FISF as part of the work on the digitization of government payments. The scope of the mapping activity included assessing the landscape of the following:

- G2P payments, to highlight a representative collection of relevant salary flows and social programs. Map these “as-is” systems to appreciate how the end-to-end processes and payment disbursements are currently managed by the government.
- Person-to-government (P2G) payments, to highlight several high-volume flows. Map these flows “as is” and assess the billing and other requirements needed by government entities responsible for collecting payments.
- Government-to-business (G2B) and business-to-government (B2G) payments with a specific focus on micro, small, and medium enterprises. This would include in particular the payment of goods and services and the collection of taxes, fees, duties, and so on. Map these “as-is” systems and assess how they are currently processed, as well as how payments are collected or disbursed.
- Availability for delivery of digital payments, including points of service connectivity, account usage, payment switching, and other payment infrastructures in use.
- Readiness or requirements for cash-in and cash-out networks to support government payments.
- Ongoing efforts to digitize government processes and payments.

To provide a contrasting experience, this section also touches briefly on the mapping of the digital payment landscape undertaken in Indonesia.
3.1. DIGITAL PAYMENT LANDSCAPE IN CÔTE D’IVOIRE

Driven by an uptake of mobile-money services provided by mobile network operators (MNOs), financial inclusion has advanced in Côte d’Ivoire. In 2017, only about 41 percent of adults in the country owned a transaction account, and approximately 15 percent owned one at a financial institution. The encouraging growth of mobile-money accounts from about 24 percent in 2014 to 34 percent in 2017 underscored the potential for digital payments in the country, and as of 2019, MNOs had more than 30 million accounts, of which 12 million were active accounts.7

In 2019, the number of adults holding accounts at MNOs (73.47 percent) was significantly higher than those with accounts at banks (30.79 percent) and microfinance institutions (11.72 percent). These entities also have significantly more access points than banks and microfinance institutions. In 2019, the number of MNO access points per 1,000 square kilometers was 566.84, while banks had 5.66 access points and microfinance institutions had 1.25 access points (Central Bank of the West African States 2020). However, the digital payment ecosystem still lacks relevant arrangements, as there is no national switch or payment arrangement that allows for full interoperability between payment instruments provided by MNOs; MNOs engage in bilateral arrangements with other MNOs and financial institutions to exchange payments.

3.2. MAPPING OF GOVERNMENT PAYMENTS IN CÔTE D’IVOIRE

In addition to reducing costs and improving efficiency, digitizing government payments is also expected to advance financial inclusion, especially through social-assistance programs. Digitization may also help to boost local financial infrastructure by stimulating greater investment in the financial sector in the country. To achieve government payment digitization in Côte d’Ivoire, the FISF team conducted a deep dive into the country’s payment ecosystem, mapped the payment value chains, placed the country along a trajectory of payment-ecosystem development, provided a roadmap and recommendations for the shift, and identified key performance indicators to track progress toward Côte d’Ivoire’s stated goals.

There were two primary outputs: (i) mapping of government payments and payment value chains, and (ii) a detailed transition roadmap outlining the technical and functional architectures to be built for implementation. The former will be covered in this section; the latter will be discussed in the next section.

The objective of the mapping was to identify steps the government could take to move from the “as-is” G2P, P2G, G2B, and B2G payment mechanisms toward a future scenario in which government payments are fully automated. The goal was to identify the design principles, infrastructure, and organizational requirements, technical specifications, and business models to facilitate the transition to digital government payments.

The mapping diagnostic was based on a survey conducted with consumers and on interviews with key stakeholders from government and the payment ecosystem. All major payment flows in the government were covered, including G2P, G2B, and government-to-government payments for payments made. For payments received, P2G and B2G flows were covered. Figure 1 depicts the detailed list of payments flows covered in Côte d’Ivoire.

The mapping report included a broad overview of the current state of payments in the country along with discussions on enabling infrastructure, payment value chains, citizens who use financial services, financial service providers, points of service, governance of payment systems, and supporting regulation. The mapping also gathered key insights from users of financial services across different socioeconomic groups, the government, and the private sector. In mapping the financial interactions between the main stakeholders, a number of insights were uncovered. These are summarized in Figure 2 and discussed by stakeholder categories below.

Government: While the government is undertaking several digitization initiatives, they are being undertaken in silos. No central body is responsible for maintaining and standardizing the implementation and delivery of these initiatives. There is a need for interfacing mechanisms and communication between project teams to avoid duplication and to account for future digitization initiatives and interoperability between systems and processes. It is difficult for the government to push for a wider, scalable digitization reform without a centralized and coordinated drive. Even within existing initiatives, there is a lack of end-to-end digitization of payments. For instance, the flow of funds is conducted by moving physical cash and a digital encrypted file from treasury to the regional counters. A dedicated settlement system needs to be commissioned for the movement and settlement of cash transactions. The process of intimation of treasury to regional treasuries as well as treasury to banks for payments is still done in physical pen-drives with payments information.
This causes delays in the payments and removes incentives for businesses to cooperate with government projects. Lastly, the beneficiary mapping, targeting, and authentication process is still manual. This results in leakages of funds, loss of faith in government schemes among citizens, and negligence of intended beneficiaries, impacting the economy.

Private sector: Digitization of payments involving private-sector entities was also studied. Major employers have bank accounts for their full-time employees in which they credit salary payments every month. These bank accounts are typically opened for employees at the time of job onboarding. For retailers, acceptance of mobile money by consumers is needed for it to be realized as a purchasing instrument. The lack of interoperability between mobile-money operators is a limitation on this front. Interoperability would accelerate the digitization of payments and financial inclusion. There needs to be regulation to ensure interoperability and access to USSD codes. The study also found that local banks lag in innovation and need to adopt efforts to reduce operational and transactions costs while improving services, including services in remote areas.

Citizens: A number of barriers limit widespread acceptance of digital payments among consumers. Low maturity levels and a lack of awareness of formal financial instruments have led citizens to be overly reliant on cash as an instrument. Poor access to formal financial services compounds the problem. There are few access points for digital payment instruments. The average distance that citizens must travel to access financial accounts is approximately 10 kilometers. In contrast, 71 percent of individuals live within five kilometers of a mobile-money store (InterMedia 2018). The logistical and operational costs of accessing financial accounts add to existing commissions, acting as disincentives to citizens’ use of electronic money instruments.

**FIGURE 1: Flows Covered by the Work on Government Payments in Côte d’Ivoire**

- **Government to Government (G2G) Payments**
  - Domestic intra-governamental payments

- **Government to Person (G2P) and Government to Business (G2B)**
  - Social benefits and assistance
  - Income tax refunds
  - Pension and social security
  - Procurement of goods and services
  - Corporate tax refunds
  - Sales tax/ VAT refunds
  - Disbursement of loans

- **Person to Government (P2G) and Business to Government (B2G) Payments**
  - Income, Sales and VAT tax payments
  - Social security and pension contributions
  - Automotive costs (tolls, fines, tickets)
  - Fees for government services (e.g., company registration)

**FIGURE 2: Findings from Government Payments Mapping in Côte d’Ivoire**

- **Government & Private Sector**
  - The digitization projects are being conducted in silos
  - The beneficiary mapping and authentication process is still manual
  - Interoperability between mobile money operators does not exist
  - Payments in retail sector are cash driven

- **Citizen**
  - Low Point of Sale (POS) penetration has led to lower acceptance of digital payments
  - Logistic costs and commissions act as major barriers to adoption for banking services
  - Lack of financial instruments for savings and easy access to credit
  - Low maturity levels and financial awareness of the formal financial instruments

- **Payments Infrastructure**
  - Absence of a Digital Mission to seamlessly integrate all necessary elements of the payments ecosystem
  - Scheme management is not fully automated
  - The existing biometric authentication database is not leveraged for digital services
  - High transaction costs between payment service providers

8 Tools for Digitizing Government Payments
Furthermore, there are few well-designed financial instruments for savings and credit for most consumers.

The mapping exercise also shed light on the existing payment infrastructure in the country. It found that Côte d’Ivoire has all the necessary elements to implement a digital payment architecture, such as a national ID, a regional card switch, an electronic funds transfer system, an inter-bank settlement system, and relevant financial service providers. The challenge lies in building interconnectivity between these elements to provide seamless digital payments. In addition to the necessary infrastructure, alternative delivery channels, such as merchants, gas stations, and schools, need to be assessed to increase the reach and distribution of government benefits. A robust and configurable scheme-management platform for government beneficiary schemes will also help the government to capture beneficiary data, ensure benefit delivery, and manage and track funds effectively. This includes developing a mapper database, which is a consolidated map of beneficiary bank account details, eligible schemes, and mobile numbers (for notification). Lastly, it was found that the Citizen Identity Card (CIN) is currently employed for limited use cases. This should be leveraged to become an authentication enabler for all digital initiatives in the country.

The key findings from the mapping exercise allowed the identification of critical gaps that will need to be addressed for digitization of government payments. These are outlined below for Côte d’Ivoire.

i. Need for building a digital ecosystem: Various e-governance projects are being implemented in silos. A centralized digital drive by the government is required to connect these programs. To promote financial inclusion within a country, incentives for the adoption of digital payments and percolation of supporting factors (such as electronic services, products, devices, and job opportunities) are needed. The need for more focused regulatory oversight aimed at building a digital ecosystem would require the government institutions and central bank, the Central Bank of West African States, to undertake structural and policy-level changes in the existing system, including a review of the existing regulatory and legal guidelines as well as the governing framework. There is also a need for automating existing government processes on payables and receivables. The treasury department, Direction Générale du Trésor et de la Comptabilité Publique, is responsible for approving and disbursing funds to citizens and business entities on behalf of government departments. The potential lack of knowledge of new standardized systems and processes could be a gap. Therefore, the treasury needs to be strongly integrated by transferring detailed knowledge of the new system and processes that would be leveraged and followed. The concerned line ministries would also need to be trained on the new systems and processes laid out by the envisioned transformation requirements. Standardization is critical across processes, IT systems, security, data storage, encryption and other variables. In order to build a robust ecosystem for digital payments, adherence to global standards is required.

ii. Need for interoperable network: Lack of interoperability between mobile financial service providers is a significant contributor to silos of financial accounts and the inability to show value to customers. Interoperability between mobile financial service providers, and between banks and mobile financial service providers is an essential part of a digital payment architecture for Côte d’Ivoire. Mobile-money operators are reluctant to share their customer base with each other as well as banks, but a common interoperable ecosystem would be imperative to provide for a variety of financial instruments and expand reach to citizens. For this to materialize, access to USSD codes needs to be provided to all service providers. At the moment, the USSD codes are proprietary, and few mobile-money operators have market power. Access to USSD is limited by withheld access, heavy charges, or poor quality. Furthermore, it is recommended that the agent network have a central agent gateway—to provide an interoperable platform for bank and MNO agents’ transactions—for standardization of service delivery. Agents selected for providing citizens with digital financial services and other e-governance services should have a common interface to process transactions that is integrated with the National Office of Identification for authentication mechanisms.

iii. Need for a resilient technology system: The Interbank Electronic Banking Group of the Economic and Monetary Union of West Africa (GIM-UEMOA) offers a regional switch for eight countries in West Africa that has the capability to integrate with MNOs for financial transactions. The possibility of utilizing this to expedite the construction of the envisaged digital payment architecture’s interoperability can be explored. However, GIM-UEMOA would need to build capacity for interoperability between banks and MNOs. The will and capability of GIM-UEMOA to facilitate biometrically authenticated transactions would need to be assessed. Once a transaction is authenticated using the central agent gateway and National Office of Identification, it could potentially be transmitted to GIM-UEMOA for routing based on the identity of the destination PSP.
iv. **Need for stronger security and compliance measures:** The payment systems need to be provisioned to track payments and ensure nonrepudiation. It is important to have appropriate measures in place to reduce nonrepudiation. Regulations and the legal framework also need to be aligned to protect the identity of the citizens when using the CIN. The CIN can be used to aggregate individual data, making it possible to profile an individual completely. Furthermore, complying with industry best practices on security is advisable to incorporate future innovations and integrate global systems with the digital payment ecosystem. On a similar note, data formats for transaction-processing standards should also be aligned with global best practices (for example, ISO-20022, ISO-8583).

v. **Need for a uniform digital experience for citizens:** Encouraging widespread adoption, usage, and growth of digital payment services is a challenge. Omni-channel deployment or acceptability gives the citizens a uniform, personalized, frictionless, and continuous experience regardless of the financial instrument, delivery channel, format, geography, or device.

vi. **Need to leverage existing infrastructure:** Mobile money has greater acceptance and usage in rural areas of Côte d’Ivoire, especially those where there are no bank branches or ATMs. Alternative delivery channels can be leveraged to bring acceptance and increase the reach of digital payments in remote unbanked areas as well as urban areas. There is scope to expand financial services’ availability through different points of service that already exist, such as post offices, schools, gas stations, and train stations. Post offices, with their vast network of branches, were found to have a distinct advantage in serving as a financial access point.

vii. **Need for enabling use of the CIN as a unique identifier:** All identification, mapping, and authentication processes are currently performed manually. Policies and regulations should be introduced to encourage the use of the CIN as a unique identifier in government payments, especially for beneficiary mapping, targeting, and the authentication process for social-assistance payments. Further, a mapping database connecting beneficiaries with their bank account details, eligible schemes, and mobile number (for notification) is missing.

### 3.3. Payment Landscape Mapping in Other Countries: Indonesia

A payment landscape mapping was also conducted in Indonesia, but in a more targeted manner than in Côte d’Ivoire. In 2016, the Government of Indonesia decided to deliver social-assistance benefits through electronic means as part of its committed initiatives under its financial inclusion strategy. The decision marked an important shift away from in-kind benefits and cash transfers. As a result, between 2016 and 2017, about 1.2 million beneficiaries were piloted into the digital payment mechanism.

#### FIGURE 3: Gaps to Be Addressed in Digitization of Government Payments in Côte d’Ivoire

<table>
<thead>
<tr>
<th>Need and focus of building a digital ecosystem</th>
<th>Need for an interoperable network</th>
<th>Need for stronger security and compliance measures</th>
<th>Need to build a resilient technology system</th>
<th>Need for uniform digital experience for citizens</th>
<th>Need to leverage available infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>• A centralized digital drive from the government is required</td>
<td>• Interoperability between Mobile Financial Services (MFS) providers as well as between banks and MFS providers is imperative</td>
<td>• Measures need to be taken to reduce non-repudiation</td>
<td>• GIM-UEMOA to be assessed for facilitating biometric authenticated transactions</td>
<td>• There is no omni-channel experience for citizens</td>
<td>• Alternative delivery channels to be leveraged</td>
</tr>
<tr>
<td>• Need for more focused regulatory oversight</td>
<td>• Access to USSD codes need to be provided to all service providers</td>
<td>• Messaging standards need to be aligned with global best practices. E.g., ISO-20022, ISO-8583</td>
<td>• The financial institutions need to innovate with targeted products and business models</td>
<td>• Need for regulations enabling the use of CIN for being a unique identifier</td>
<td>• Achieving consistency across outlets for acceptability of digital payments</td>
</tr>
</tbody>
</table>
Before implementing the program at a nationwide level, a G2P payment landscape-mapping exercise was conducted to analyze the early implementation of this policy across various social-assistance programs in Indonesia. The objective of this mapping exercise was to provide policy suggestions for improving the delivery of social-assistance programs to beneficiaries, including during the transition to broader digital delivery.

The landscape survey involved a survey of both household recipients of social assistance and certain financial service providers (bank agents) that helped to deliver such assistance. The survey included questions related to the benefits from five social-assistance programs that already used digital payments to varying degrees. The responses to the survey and comparisons of responses across the five programs provided the main basis for the survey’s conclusions.

In 2017, a presidential regulation on digitizing social assistance was issued to provide a legal basis for the shift to digital payments. The full shift for the cash-transfer program was completed in 2018, while the in-kind-only programs were fully transitioned to digital by the end of 2019.

NOTES
7. An account is considered active when it had at least one transaction during a period of 90 days.
8. Nonrepudiation is the assurance that someone cannot deny making a payment or receiving a payment.
IMPLEMENTATION DESIGN AND ROADMAP IN CÔTE D’IVOIRE

The key findings from the government payment mapping exercise in Côte d’Ivoire were used to identify critical guidelines for the design of the digitization process for local government payments, such as benefit payments. These guidelines laid down a foundation for the envisioned digital payment system by devising and detailing the architecture. These were subsequently used to outline a detailed implementation roadmap that breaks down the key elements in the envisioned architecture. The roadmap outlines the sequence of key steps that the government needs to take in collaboration and in coordination with key stakeholders to digitize its payments. It also includes recommendations to the authorities in Côte d’Ivoire for technical standards, business models, infrastructure requirements, and other specifications to ensure effective implementation.

4.1. IMPLEMENTATION DESIGN

To design an effective and efficient architecture for digital government payments, it is important first to identify the requirements of each stakeholder that the architecture needs to fulfill. These are then paired with existing and planned payment infrastructure to ensure a model that works for all. In doing so, it is important to base the architecture on global standards and best practices.

The following requirements for the future architecture were identified for each main stakeholder in Côte d’Ivoire:

Government

i. Better service to citizens: The government’s main objective is to serve the citizens in a more effective and efficient manner. Citizen interactions with government departments and systems should be streamlined and transparent to bring down transaction costs. A service-oriented architecture will ensure the smooth rollout of new services and enable different stakeholders to integrate and introduce new offerings seamlessly without major changes to the core processing systems. This would ensure that maximum value is delivered while providing uniform access and a uniform interaction experience to rural and urban populations.

ii. Fast: With the advent of the payment infrastructure implemented by the Central Bank of West African States, payment-processing timelines have been reduced drastically. It is very important to note that the envisaged architecture is aligned with the payment systems and infrastructure and enables transaction reporting and reconciliation in nearly real time.

iii. Leveraging technology: Paper-based transactions are time consuming, unreliable, and inefficient and hence should be replaced with digital systems and technology-enabled infrastructure elements. The architecture should enable digital platforms and technology for more seamless delivery of all the payments associated with all value chains.

iv. Driving interoperability: While mobile penetration and mobile-money usage in Côte d’Ivoire are among the best in the region, banking services and access-point penetration lag behind significantly. Interopera-
bility is a critical component of the digital payment architecture, as multiple systems from the government, National Office of Identification, customer service centers, and PSPs would interact and exchange information with each other. Interoperability can exploit the benefits of banking services through a wider mobile infrastructure and hence should be a core part of the proposed payment architecture.

v. **Secure**: Providing a robust and secure payment system will make citizens confident enough to conduct digital financial transactions and lead to wider adoption. A proper monitoring, tracking, and tracing mechanism to avert the theft of financial information and deny hackers access to PSP accounts should be put into place.

vi. **Forward-looking policies**: The architecture should reduce barriers for new services and providers. This will create a level playing field and improve competition to drive citizen-centric service offerings. For example, the availability of USSD codes for all service providers will boost the last-mile connectivity of financial services.

### Citizens

i. **Citizen-centric**: The digital payment architecture should be aligned with the needs of the citizens so they can conduct transactions with ease and convenience. A user-friendly mechanism would encourage widespread adoption.

ii. **Inclusive**: The architecture should also enable the inclusive participation of all sections of the population, including marginalized sections such as women, the elderly, and rural communities. Such segments may have different needs, so services may need to be customized accordingly.

iii. **Empowering**: Access alone is insufficient, and services will need to be designed to empower citizens to improve their well-being. This is especially important for vulnerable segments of the population.

iv. **Choice of access**: Citizens should not be limited to certain service providers, products, and channels. Instead, choice of access will help to accommodate a wide range of citizens’ needs. It is important that alternative options are economically viable and convenient for usage.

v. **Reliable and secure**: It is important to ensure that the new solution has high security standards to instill comfort and safety. Appropriate safeguards, including strong encryption, will need to be included to plug the loopholes in transaction and digital payment standards.

vi. **Future-ready**: Given the emergence of innovative use cases, such as contactless payments, the new architecture should ensure that the payment infrastructure elements and architecture can accommodate future innovations.

### Payment Service Providers

i. **Viable**: The architecture should support a business model that allows capturing value and incorporates commercial incentives. The project’s economic viability will motivate private-sector financial service providers to adopt and engage with the proposed architecture.

ii. **Transparent**: The policy drivers, implementation actions, and approaches used at all levels of the architecture should build confidence. At any point in time, if the customers or policy makers need to retrieve some information about any architecture element or

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**FIGURE 4: Government’s Perspective in Côte d’Ivoire’s Envisioned G2P Payment System Architecture**

1. **Better Service to Citizens**
   - Simplifying interactions, reducing costs, and increasing value. All citizens should have uniform access

2. **Fast**
   - Enabling transaction, reporting and reconciliation on near real time basis

3. **Leveraging Technology**
   - Enabling digital platforms and technology for seamless delivery of payments

4. **Driving Interoperability**
   - Utilizing existing infrastructure to the fullest and provide choice of access to the customer by promoting interoperability

5. **Secure**
   - Enable greater robustness through enhanced security

6. **Forward Looking Policies**
   - Remove barriers to bring in new services, products and providers to improve competition
the payment value chain supported by it, it should be done in a transparent manner. Furthermore, all fees and costs for citizens and participants should be put forward clearly and accessible at all times.

iii. **Open and competitive**: The architecture should be open and competitive so as to create a level playing field. This means that the solution should enable and encourage reuse and extensibility, leveraging existing capabilities where possible to ensure minimum transition hurdles for stakeholders.

iv. **Secure**: The architecture should have high security standards to ensure data privacy and confidentiality from the perspective of both the citizen and service provider. This is a requirement that is common to all stakeholders in the digitization process. For this reason, adherence to industry and global security standards is a key criterion for building and implementing the operational and technological platforms used by the providers.

The above requirements were distilled into six key principles for the design of the architecture. The objective was to establish a citizen-centric and robust architecture that can be scaled up across the country while utilizing existing citizen authentication data and digital value chains. The six key design principles for Côte d’Ivoire are outlined in Figure 7.

### 4.2. IMPLEMENTATION ROADMAP

The above principles guided the design of the architecture proposed for the digitization of government payments in Côte d’Ivoire. The roadmap focuses on meeting operational objectives for the implementation of the architecture within a specified timeframe and connects the architecture design to implementation. It outlines the sequence of key implementation steps that the government needs to take to digitize its payments. For Côte d’Ivoire, the roadmap divided the steps into three implementation phases that were to be undertaken sequentially.
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Implementation Design and Roadmap in Côte d’Ivoire

FISF also provided support to the Government of Mozambique in digitizing government payments by conducting a landscape assessment and developing a roadmap, which is being implemented by a separate World Bank Group project.

The landscape assessment found that most government payments in Mozambique, especially for social safety-net programs, are cash based. While use of digital transfers has been increasing, government financial-management and information systems can make payments only to bank accounts, not to mobile wallets. This means that, even for use cases with high digital payments (such as salaries to civil servants), recipients may be considerably distant from a bank branch or ATM and hence may incur significant costs to access such payments.

In designing the implementation, several challenges specific to Mozambique had to be considered. First, most social-protection beneficiaries lack adequate proof of identity. This is a major obstacle to financial inclusion, particularly among lower-income groups. Second, the compliance approach to supervision was conservative. Despite flexibility in the legislation, banks are unwilling to use risk-based know your customer (KYC) without central bank guidance or clear regulations. Third, agent banking—particularly in remote areas—is relatively costly and unattractive to banks. This is due to (1) the absence of basic infrastructure (roads, electricity, and so forth); (2) challenging liquidity management, particularly in areas where there are no bank branches; (3) compliance policies requiring paper documentation; and (4) low agent earnings, making the business unattractive to many potential agents, even as a supplementary source of income. Fourth, full interoperability among banks and mobile-money operators does not exist yet, reducing the utility and efficiency of the retail payment system.

The implementation design was tailored to the local context while drawing on lessons from the experience of other countries. The approach sought to digitize government payments at the sectoral level across ministries. To achieve this, a government service division with a core competency in providing government-wide IT services was needed. CEDSIF (Centro de Desenvolvimento de Sistemas de Informação de Finanças), the center for the development of financial information systems in Mozambique, was determined to be the most appropriate home for the digitization project.

A "multi-service provider (MSP) with choice" approach was adopted to allow multiple private-sector PSPs to offer their services to government recipients, where recipients are given a choice of which PSP they wish to be paid through. It is the first to introduce beneficiary choice in Mozambique and a substantial departure from previous practice, which relied on the procurement of one service provider to deliver cash to recipients. The MSP model utilized both regulated private-sector banks and mobile-money operators, with the latter expected to be the dominant choice of recipients due to the higher number of cash-out agents nationally.

Transaction fees are determined by each PSP and charged to the recipient, not the government. However, the government may elect to credit each beneficiary with a withdrawal-fee rebate to subsidize any withdrawal cost at a flat rate irrespective of PSP. This can encourage competitiveness among PSPs, as savings from selecting a cheaper PSP are captured solely by the recipient. This not only empowers recipients but also creates demand-side pressure on PSPs to increase efficiency and reduce costs.

Implementation of the digitization project was ongoing as of June 2020, and a Project Implementation Unit has been established under the Ministry of Finance to oversee the process. The majority of the technical work has been completed; the IT system has been developed and integrated with the INAS (National Social Assistance Institute) social-welfare program, Vodacom M-Pesa, Movitel M-Mola, and PayCode. A pilot is scheduled to test the system, which includes a financial-literacy program. On the regulatory front, the Bank of Mozambique has agreed to waive strict KYC requirements in favor of a risk-based approach to allow for the pilot to proceed.
The first phase would see the building blocks of Côte d’Ivoire’s digital payment architecture being conceptualized and developed to form a foundation on which the envisaged payment-digitization application stack can be built. This would involve leveraging the existing infrastructure to create a functional digital payment architecture. Additionally, this phase would include policy, regulatory, and other functional interventions as required. The initial phase would seek to digitize the government’s existing benefit-management processes and create an interoperable digital framework for delivering payments to the beneficiary citizens.

The second phase would see the capabilities built in the first phase being leveraged for other financial services, such as a Unified Payments Interface. Specifically, this would focus on deepening interoperability, which is planned to be introduced in the first phase, between a growing number of increasingly diverse participating market players in the finance and payment landscape to deliver enhanced choices and payment products. The focus at this stage would be on increasing citizens’ choice of payment providers and products by enabling rapid participation of market players and alternative payment-delivery channels.

The final phase would seek innovation in payments based on Côte d’Ivoire’s digital payment application stack and increased outreach of digital payments and services to citizens. This will involve the creation of a self-sustaining payment infrastructure and business models for various service providers as well as bringing in newer and innovative facilities, such as a bill-payment system, peer-to-peer lending, transaction-based lending, and other digital financial services. The development of a full stack would require extensive collaboration of financial service providers, government institutions, and new players from the technology and telecom sector.

While the recommendations discussed in this section are specific to Côte d’Ivoire, several elements might be considered in other implementation roadmaps.

A roadmap should shed light on the details around the technical standards, business models, infrastructure requirements, legal and regulatory framework, and other specifications to ensure effective implementation. These should be based on the findings of earlier diagnostics and determined when finalizing the implementation design. The roadmap needs to be constructed to account for specific recommendations along these lines, given budget, capacity, and time constraints.

For the success and viability of the project, it is important that the roadmap outlines a transparent governance structure to implement the digitization process. The structure should clearly identify responsible stakeholders and outline the accountability mechanism at all levels. For this, it is essential that progress is quantified and measured. This can be done by identifying relevant key performance indicators to track progress at initiation.
### Key elements of the Payment Architecture stack (Phase-1)

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIN-as-a-service</td>
<td>The CIN will serve as the unique identifier-based service to enable digital authentication for citizens.</td>
</tr>
<tr>
<td>Mapper</td>
<td>The mapper platform will facilitate benefit transfers from the government to citizens.</td>
</tr>
<tr>
<td>Scheme Management Platform</td>
<td>The scheme management platform will serve as the centralized configurable system to manage government scheme and citizen entitlements.</td>
</tr>
<tr>
<td>PSP Integrator</td>
<td>The payment service provider integrator will enable seamless data interchange between multiple payment service providers.</td>
</tr>
<tr>
<td>CIN-Payments</td>
<td>CIN-Payments will be leveraging CIN and citizen biometrics for financial transactions.</td>
</tr>
</tbody>
</table>

### Key elements of the Payment Architecture stack (Phase-2)

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unified Payments Interface (UPI)</td>
<td>UPI will provide last mile payment options based on a unique identifier.</td>
</tr>
<tr>
<td>Virtual Payments Address</td>
<td>VPA is the unique financial address for the citizens to send and receive money.</td>
</tr>
<tr>
<td>QR Code based Payments</td>
<td>QR code enabled scan and pay enabled feature can be used for person to merchant transactions.</td>
</tr>
</tbody>
</table>

### Key elements of the Payment Architecture stack (Phase-3)

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citizen Credit Rating</td>
<td>This system will enable accessing citizen credit history for calculating a credit scorecard. The scorecard can drive easy access of credit and risk free lending in the country</td>
</tr>
<tr>
<td>Citizen Digi-Locker</td>
<td>A digital locker for each citizen to store, retrieve and access his vital information and documents such as birth certificate, driving license, voter card, CIN, etc.</td>
</tr>
<tr>
<td>Unified Bill Payments System</td>
<td>A central bill payment platform for ease and convenience of both the supply (citizens) as well as demand side (utility service companies). The aggregate volume and type of transactions (telecom, DTH, water, gas, insurance premiums, EMIs, etc.) can drive low transaction costs.</td>
</tr>
<tr>
<td>P2P Lending</td>
<td>Citizen to citizen lending to be made convenient by having instant terms and conditions as well as auto-generated from the P2P lending system.</td>
</tr>
<tr>
<td>Transaction Based Lending</td>
<td>Transaction based lending would be used by financial institutions for lending money to merchants for their capex and opex. The basis of risk assessment would be the number of transactions and value of these transactions for the merchant.</td>
</tr>
</tbody>
</table>
The progress against established performance indicators should be reported regularly to the highest level in the governance structure. In order for governance to be effective, it is also important to ensure that the structure has adequate staffing and dedicated resources.

**Figure 9 depicts the proposed governance structure for digitization in Côte d’Ivoire.** The Government of Côte d’Ivoire will act as a central body and have oversight of the project. This top-level governance would consist of the Cabinet Secretariat to make key decisions and give strategic direction to the overall program.

The implementation design for Côte d’Ivoire also covered other aspects, such as data storage and information management. In order to have seamless operations of digital payments and services within the country, it is imperative to have a robust high-availability data center. The issuer PSP is responsible for maintaining citizens’ financial account information and for facilitating integration across different actors in the ecosystem to provide citizens with a seamless digital experience.

**FIGURE 9: Proposed Governance Structure to Implement the Digitization Roadmap in Côte d’Ivoire**
IMPLEMENTATION LEARNINGS FROM INDONESIA AND ZAMBIA

Implementation Learnings from Indonesia and Zambia

FISF has directly supported implementation of initiatives to digitize government payments in Indonesia and Zambia. Multiple challenges encountered in both countries while doing so have led to several implementation learnings that are documented in this section.

In Indonesia, FISF supported G2P digitization by conducting a payment landscape assessment, undertaking capacity building, and providing inputs to facilitate implementation. These efforts supported the digitization of the two biggest social-assistance programs in the country, the Family Hope Program (PKH) and Non-Cash Food Assistance (BPNT). The former is a conditional social-assistance program distributed to poor and vulnerable families or individuals to reduce poverty and improve living standards through better education, health, and social welfare. The latter evolved from an in-kind distribution of rice to the poorest households to non-cash social assistance to buy several types of food items in participating outlets. Each program had crossed 10 million beneficiaries by 2018.

Several implementation challenges were documented in Indonesia. First, a lack of centralization of the social-assistance programs meant that the two programs used different databases, making it difficult to integrate digitization. They also used different unique identifiers. Leveraging the national ID for beneficiary mapping would have simplified integration across programs. Second, there were an excessive number of regulations related to G2P payments—involving multiple government authorities—that had to be unified under a legal umbrella to support the initiative. However, the new legal foundation was not appropriate for the next phase of digitization as envisioned by the government, as it did not allow multiple choice in payment delivery. Third, existing regulation mandated banks to return the social payment if no financial transaction was conducted by the beneficiary within 30 days of receipt. As a result, beneficiaries viewed the receiving bank account as a distribution channel and were reluctant to use it for other financial purposes, such as savings. This limited the impact of digitization on financial inclusion. Fourth, poor financial infrastructure in some parts of the country, especially rural and remote areas, led to distribution issues. Lastly, low financial literacy among beneficiaries meant many would share sensitive financial information such as their PIN, leaving them vulnerable to fraud.

Efforts are ongoing to expand and modernize digital government payments for social-assistance programs in Indonesia post-FISF. The approach focuses on four key elements: (1) a “multi-service provider with choice” model that allows recipients to choose the account in which they receive benefits; (2) expanding the choice of instruments beyond the existing “Combo” card (a sort of debit card for G2P payments); (3) revising incentives for PSPs to encourage market entry, improve service, and lower costs; and (4) establishing new infrastructure, especially to allow interoperability, electronic KYC, and mapping of beneficiaries’ national ID to their transaction accounts.

In Zambia, FISF supported the implementation of a small-scale pilot for the digitization of government payments for the Girls Empowerment and Women Livelihood Project. The program targets vulnerable girls and women to support education, livelihood, and women empowerment. Prior to the pilot launch, several steps were taken to facilitate the operation, including
Tools for Digitizing Government Payments

Approval from the central bank to relax KYC requirements for beneficiaries by allowing participating payment providers to accept photo ID cards issued by the Ministry of Community Development in lieu of the national ID, the distribution of mobile phones to beneficiaries, and the training of beneficiaries. By the end of 2017, nearly 13,000 beneficiaries had been paid two installments under the pilot program. An additional 62,000 beneficiaries were expected to be reached by 2020 as the initiative expanded beyond the pilot.

The experience of digitizing government payments in Indonesia and Zambia provided several insights into implementation, which are distilled into the following six lessons:

i. **High-level commitment is important**: Digitizing government payments is typically an extensive exercise involving multiple stakeholders, projects, and aspects. High-level commitment is critical to ensure effective coordination among different elements and provide overall strategic guidance. This can be done in several ways, such as by providing a legal foundation for G2P digitization or incorporating it in a national-level strategy. Both of these were undertaken in Indonesia; a presidential regulation on digitization was issued, and it was included as a priority action in the National Financial Inclusion Strategy. Furthermore, a national-level control team was established to lead the digitization efforts. These measures demonstrated strong commitment at the highest level and provided strategic guidance for implementation.

ii. **Phased implementation can be efficient**: A gradual rollout or phased implementation of a widespread digitization initiative can help to mitigate several issues related to scale and limit the magnitude of potential downside effects, should a setback arise in implementation. A conservative approach on this front can also allow space for time-consuming prerequisites to fall into place, such as the revision of regulations or the expansion of financial infrastructure. Such an approach was adopted in Indonesia, where the complex regulatory and institutional environment demanded a more cautious approach. A pilot phase for the Family Hope Program and Non-Cash Food Assistance program proved to be valuable for identifying issues associated with integrating both programs and resolving them before a full launch.

iii. **Beneficiaries should be allowed choice in delivery**: Allowing beneficiaries to choose the payment provider, instrument, and channel for receiving government payments can lead to better results, as beneficiaries can make decisions based on their specific needs. In particular, recent findings from Zambia demonstrate that women’s circumstances and negotiating power influence their financial decision-making power and their ability to choose a specific provider (FSD Zambia 2021). Choice also creates a marketplace where women can reward better service (Chen and May 2021). Engaging more PSPs leverages more of the existing financial infrastructure in the country and expands reach. Providing more options may also encourage greater use of financial services. Furthermore, in several cases, such a market-based approach that opens up participation to interested providers can help avoid lengthy or failed government procurement to deliver payments. In Zambia, the Ministry of Community Development tried for several years to procure a single provider to deliver social-grant payments but without success. The market-based approach developed under the pilot program allows beneficiaries to select their payment providers. The PSPs were engaged regularly through monthly meetings of the Payment Working Group chaired by the Ministry. The Payment Working Group was provided with key information about beneficiary target groups, including payment volumes, location, and timing, which enabled PSPs to grasp the economic viability of serving the target segment.

iv. **Embedding financial-literacy programs can be valuable**: Beneficiaries of government assistance programs are usually poor and vulnerable segments of the population, with low levels of financial literacy. This can cause significant difficulties in G2P digitization, so it can be valuable to incorporate financial-literacy programs when implementing such efforts. This is especially important for choice-based design, as more options can cause greater confusion among beneficiaries. Receiving government payments creates a “teachable” moment that can be leveraged for effective financial-awareness training (Kaiser and Menkhoff 2017). Hence, these should be embedded to enable beneficiaries to understand the available PSP choices, how to use their accounts and PINs, how to cash out, and how beneficiaries can use receiving accounts to meet other financial needs and also their basic consumer rights.

v. **Existing infrastructure challenges need to be addressed**: Though Zambia has mobile phone penetration of 80 percent, several issues with network coverage and electricity make it difficult to deliver grants in remote areas. Addressing these issues would significantly help in reaching the last mile. While the lack of adequate infrastructure should not deter digitization, it is important to address such constraints in parallel. Indonesia was able to rely on state-owned banks, given their vast network across the country.
However, many remote areas still remained unserved by financial providers, highlighting the importance of building infrastructure where gaps currently exist.

vi. Digital payments should be used as a gateway to other financial services: Most beneficiaries tend to use PSPs and accounts to receive cash transfers, not for other financial services, such as savings. One of the objectives of digitizing government payments is to boost financial inclusion. This will require additional efforts, such as financial-literacy training (see above) and encouraging providers to provide innovative financial solutions for beneficiaries. This was done in Zambia, where an MNO was incentivized to create a new mobile wallet project for beneficiaries to be able to retain or save their money, rather than simply cashing out. It is also important not to have restrictive rules on digital payments that may discourage financial inclusion, as was done in Indonesia, where the government mandated banks to return social payments if no financial transaction was conducted by the beneficiary within 30 days of receipt. This resulted in beneficiaries viewing the receiving bank account solely as a distribution channel and discouraged further use.

vii. Implementing financial consumer protection measures: Effective financial consumer protection frameworks can help instill trust in the formal financial system. Without basic protective measures, consumers may find it difficult or costly to obtain sufficient information, and even those who are financially literate may not adequately understand the financial products they use or consider using. Some of the basic consumer protection measures recommended by the FISF country-support program in Zambia included issuing internal complaints-handling requirements for providers, deploying adequate supervisory tools to monitor compliance of providers with consumer protection requirements, and establishing independent alternate dispute-resolution mechanisms, such as a financial ombudsman.

It is important to note that implementation experiences and learnings are highly dependent on the local context. Hence, the above lessons may not translate directly to other countries and regions. Nevertheless, they provide valuable insights for policy makers interested in digitizing government payments and may be useful if tailored to the local context.
G2P PAYMENTS DURING THE COVID-19 PANDEMIC

The economic turmoil caused by the COVID 19 pandemic required governments across the world to deliver economic support quickly to millions of families uncovered by existing social safety nets. The need to distribute social-protection payments rapidly while preserving social-distancing measures forced governments and humanitarian agencies to leverage account-based and non-account-based digital payments to deliver economic aid.

The implementation process was challenging, as a large proportion of the population targeted by the emergency programs was unbanked and most available digital payment mechanisms required the user to have an account. Also, many social-protection agencies have not digitized their existing social-assistance payments; hence, internal systems and processes had to be implemented or modified in order to disburse funds to accounts. Furthermore, in many countries, the digital payment ecosystem is underdeveloped; many providers are still building the capacity required to offer efficient and convenient digital payments. To address the different challenges, many governments and humanitarian agencies delivered social-protection payments through a set of impaneled PSPs that offer payment services that fit the needs of beneficiaries and social-protection agencies or that were willing to tailor such products and services to provide an enhanced experience for beneficiaries while fulfilling the budgetary constraints and transparency requirements of authorities.

In some countries, governments favored beneficiaries’ choice of provider, which required them to set up digital channels to capture choice and implement the necessary measures and procedures to disburse funds to the PSP selected by the beneficiary. For example, in Brazil, the emergency program was implemented through a digital social-savings account created for the program and offered by the state bank Caixa that included free features such as transfers and ATM withdrawals, but the government allowed beneficiaries to choose an account from any other bank to receive the aid. The beneficiary, while applying for the aid through a website created for this purpose, could select the provider. In Jordan, the government delivered social-assistance payments through a set of impaneled PSPs, but beneficiaries were able to choose between the different providers. In contrast, in Colombia, beneficiaries were assigned to a specific PSP to avoid overcrowding of access points.

However, in some contexts, there was either no real choice or an inability to exercise choice, particularly in remote and rural areas without internet connectivity and where the presence of PSPs is limited. In those cases, most authorities followed a multilayered approach in which they provided different options catered to the needs of each segment of the population targeted by emergency aid programs and digitized payments for most beneficiaries, while beneficiaries located in communities without connectivity received social-assistance payments through traditional means.
The impanelment of PSPs required authorities to conduct the mapping exercise similar to the one described in section III of this note. For the design of emergency programs, authorities examined the features, functionalities, and costs of payment services to identify suitable options for the delivery of emergency aid.

In countries such as Jordan and Colombia where digitization of G2P payments was incomplete but the key enablers were already implemented, authorities identified existing gaps or deficiencies in the payment ecosystem, created an implementation plan that included coordination mechanisms with all the relevant stakeholders, and set emergency regulatory measures to alleviate existing pain points. The emergency measures implemented by authorities included increasing transaction limits of payment instruments, exchanging information with financial institutions to facilitate identification of beneficiaries with existing accounts, and creating regulatory provisions for massive onboarding of beneficiaries.

In some countries, the design and implementation planning process also considered the type of mobile devices used by beneficiaries, considering that the type of device can limit the functionalities of the digital payment instrument. In some regions, mainly in Africa and Latin America, authorities impaneled a set of providers capable of offering their services through feature phones and smartphones.

Other key aspects that required detailed planning and close collaboration between PSPs and authorities related to the capacity of providers to offer cash-out services; such services were a relevant concern in economies where acceptance of digital payments is still low and cash is required when paying for basic products and services. In this regard, authorities and providers worked to increase the cash-out points available to beneficiaries and agents in particular, which are in general a more capillary network that reaches communities typically underserved by financial institutions. However, agents’ availability was a pressing issue related to the distribution of emergency aid, as many agents closed out of fear of contagion or due to reduced economic activity. Furthermore, agents that remained open faced liquidity issues, as cash income from sales was reduced while cash-out requests increased.

To help alleviate distribution and liquidity issues, authorities staggered the distribution of payments and provided PSPs with information about the location of beneficiaries to allow for liquidity planning. In other cases, PSPs enabled beneficiaries with Unique Code-based payments to withdraw cash from other cash-out networks, such as the ATM network, without using a physical payment instrument (Gentilini et al. 2020).

Another relevant component of the design and implementation of emergency programs was the communication strategy. As mentioned above, many beneficiaries were unbanked and vulnerable population, with low levels of financial literacy. To overcome any potential issue arising from the use of digital payments, authorities deployed large communication and education campaigns through social media and direct contact with beneficiaries, including SMS messages.

NOTE
9. Unique Code–based payments are payment mechanisms that enable recipients to use a unique code sent by their agent’s program administrator for every disbursement cycle to access funds. These funds are typically held in the aggregate at designated financial institutions, and the code merely entitles the recipient to a pre-allocated amount. The code can be communicated in various ways, including but not limited to a one-time password sent by SMS, and in some cases can also be generated by the recipient by accessing a particular system or app. Some providers now allow recipients to direct the pre-allocated funds to an account of their choice instead of withdrawing the funds. Typically, the recipient uses the traditional access points (that is, ATMs, points of sale) to access the funds.
CONCLUSION

Digitizing government payments can have a significant impact on government efficiency, public welfare, and the broader economy. It can also serve as an important initiative to promote adoption of formal financial services, especially digital services. Digitizing government payments is often an extensive exercise involving a range of stakeholders. Coordination across different groups of stakeholders is essential to the success of these initiatives.

Several tools can facilitate such initiatives. This note discusses the use of three such tools under FISF—a cost-of-payments survey, government payment mapping, and an implementation roadmap—but the choice of tool will ultimately depend on the individual country’s needs and context.

Utilizing such tools can ensure more effective digitization. For instance, a government payment-mapping exercise was undertaken in Indonesia under FISF. This provided valuable insights for optimizing the digitization of the two biggest social-assistance programs in the country. By 2018, each program was serving electronic payments to more than 10 million beneficiaries. This initiative had a substantial impact on financial inclusion in the country, as approximately 86 percent of beneficiaries opened their first bank account through the program. However, increasing usage of financial services among beneficiaries remains a challenge, as less than 17 percent use their accounts for other financial transactions.

To encourage the use of financial services, policy makers may need to undertake additional steps, such as embedding financial-literacy training in implementation, encouraging providers to serve excluded segments and implementing financial consumer protection measures. Such efforts, along with digitizing large-volume payment streams, can help to increase demand for digital payments and achieve stronger commercial viability for providers, including for low-cost payment solutions. This will collectively build an ecosystem for digital payments and ultimately promote efficiency, inclusion, governance, and economic activity in the country.
GLOSSARY OF KEY TERMS

**Access point:** Point that is necessary to initiate a financial transaction. Access points can include branch offices, ATMs, agents, terminals at the point of sale, or users’ personal devices (for access via the internet or other telecommunications networks).

**Agent:** A contractual relationship in which one party, the agent, acts on behalf of another party, the principal.

**Agent banking:** Business arrangements of banks and non-bank financial service providers using local entities (that is, “agents”), such as small shops, to provide basic payment and banking services on their behalf. This arrangement is also referred to as banking through business correspondents.

**Business-to-government (B2G) payments:** Payments made by businesses to the government, normally in connection with taxes, duties, or for goods or services provided by the government.

**Consumer:** Any natural person who is acting for purposes that are outside his or her trade, business, craft, or profession, as well as a micro, small, or medium enterprise.

**Financial inclusion:** Access to and usage of a range of appropriate financial products delivered in a responsible and sustainable manner to underserved individuals and micro, small, or medium enterprises.

**Financial literacy:** The possession of knowledge and understanding of financial matters. The term, used mainly in connection with personal-finance matters, often entails knowing the proper way to make decisions pertaining to areas such as real estate, insurance, investing, saving, tax planning, and retirement. It also involves intimate knowledge of such financial concepts as compound interest, financial planning, the mechanics of a credit card, advantageous savings methods, consumer rights, time value of money, and so on.

**Government-to-business (G2B) payments:** Payments made by the government to businesses, normally in association with procurement of goods and services, the expenses of public-sector officers, tax refunds, and so forth.

**Government-to-person (G2P) payments:** Payments made by the government to individuals. The most common are payments of salaries and pensions for public-sector employees, disbursements of subsidies, and similar cash-transfer programs.

**Mobile financial services:** Financial services initiated and transmitted by an access device that is connected to a mobile communication network using voice technology, text messaging, or near field communication. An access device may be a tablet computer. Operations that are initiated and authorized via the internet through the use of a mobile device (for example, credit transfers or direct debits) are considered to be internet services, not mobile financial services.
**Payment instrument:** Any instrument enabling the holder or user to transfer funds.

**Payment service provider (PSP):** An entity that provides payment services, including remittances. PSPs include banks and other deposit-taking institutions, as well as specialized entities such as money-transfer operators and e-money issuers.

**Payment system:** All payment-related activities, processes, mechanisms, infrastructure, institutions, and users in a country or a broader region (for example, a common economic area).

**Person-to-government (P2G) payments:** Payments made by individuals to the government, normally in connection with taxes, duties, or for goods and services provided by the government.

**Point of sale:** Refers to the use of payment cards at a retail location (point of sale). The payment information is captured either by paper vouchers or by electronic terminals, which in some cases are designed also to transmit the information. Where this is so, the arrangement may be referred to as “electronic funds transfer at the point of sale.”
REFERENCES


