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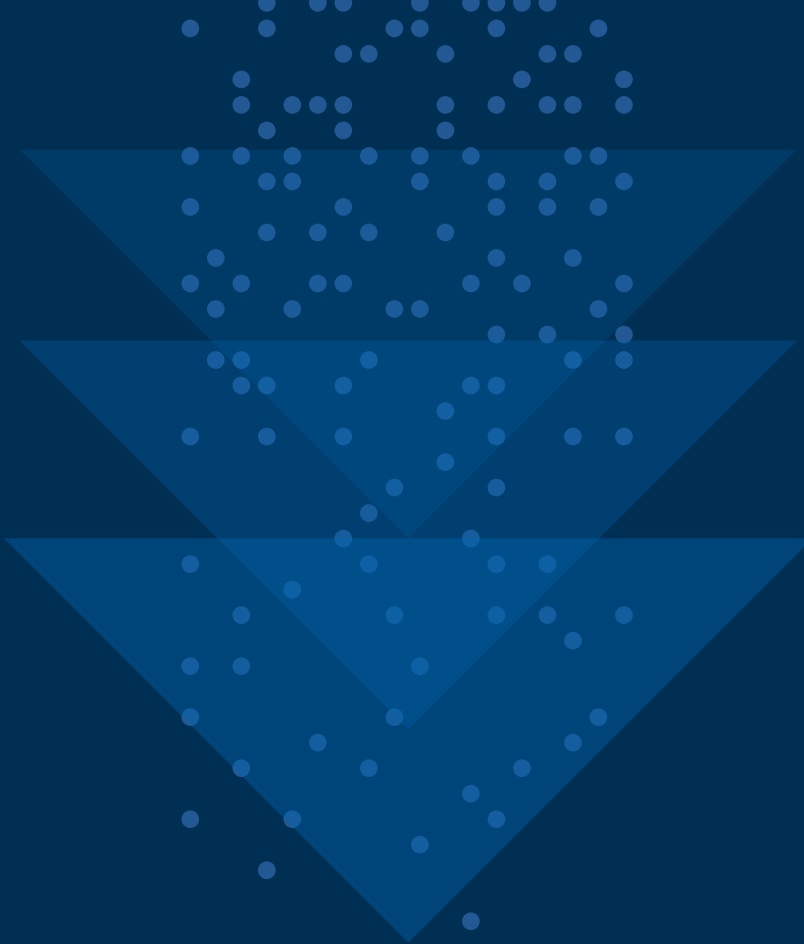
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# NEXT GENERATION G2P PAYMENTS

## Building Blocks of a Modern G2P Architecture





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# NEXT GENERATION G2P PAYMENTS

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## ABOUT THE G2PX INITIATIVE

G2Px is a World Bank Group cross-sectoral initiative in partnership with the Bill & Melinda Gates Foundation and the Norwegian Agency for Development Cooperation. The initiative contributes to the broader agenda of improving government-to-person (G2P) payments through digitization, with the objective of shifting the G2P digitization paradigm beyond program-specific efficiency gains to one that simultaneously accelerates critical development outcomes such as financial inclusion, women's economic empowerment, and government fiscal savings. Through G2Px, the World Bank Group seeks to establish a framework, develop good practices, and provide upstream technical assistance to radically improve G2P payments globally. The initiative will help build a global movement ensuring that all G2P programs aim and design for broader inclusion and empowerment outcomes through a focus on digitization.

To find out more about G2Px, visit [worldbank.org/g2px](https://worldbank.org/g2px).

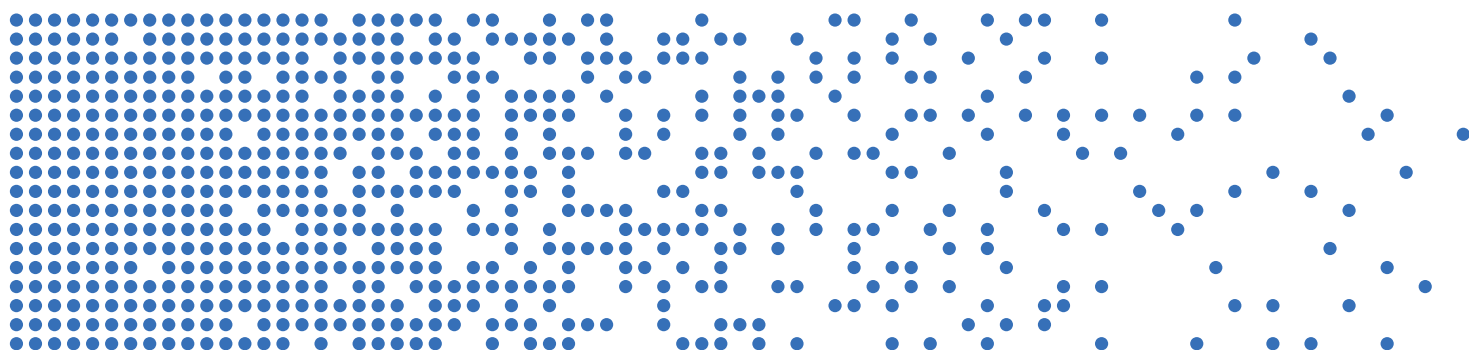
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The report draws extensively on existing World Bank Group publications and previous work. These publications are referenced throughout the note and the reader is encouraged to consult them to get a deeper understanding of each topic.



# Executive Summary

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This report is a reference document to be consulted by governments and those advising policy makers when considering, designing and implementing **digital** government-to-person (G2P) payments. It provides a framework for a modern G2P architecture which can support long-term development outcomes through the digitalization of G2P payments.

Governments around the world are increasingly recognizing the benefits of digitizing G2P payments. Whether social assistance payments, pensions, sectoral subsidies or public wages, these G2P payments have the potential to accelerate financial inclusion, strengthen pathways to women's economic empowerment, create government-wide fiscal savings and contribute to financial sector development. They can also support governments to deliver payments quickly and safely in response to an emergency as witnessed during the COVID-19 crisis. However, not all digital G2P payments contribute to achieving these outcomes—choices made on the infrastructure leveraged, financial providers and products used, as well as policies in place at the national-, agency- and program-level will influence the outcomes achieved.

The modern G2P architecture laid out in this report can contribute to not only program-level efficiency gains, but also to long term outcomes like financial inclusion, women's economic empowerment, government-wide fiscal savings, and private sector development and innovation. It presents an ideal scenario for a G2P architecture, comprising the systems, infrastructure, regulations, policies, and design choices that enable and characterize the end-to-end delivery of digital G2P payments. Each country, however, will need to tailor this vision to their own context and goals.

The report delves into the main 16 building blocks of a modern G2P architecture and some of their desired characteristics. These building blocks span from digital public infrastructure, to characteristics of the financial ecosystem and arrangements with payment service providers, all the way to the systems and policies supporting inclusion and empowerment. Each building block will ultimately look different across countries. However, as each country works on leveraging, improving or developing these building blocks to reach their own vision, they should prioritize the recipients' convenience, inclusion and empowerment.

The specific characteristics of a G2P architecture will vary across countries but they should all strive to adopt the design principles in this report. Leveraging shared infrastructure, making payments into transaction accounts, providing recipients with choice of payment method and provider, and ensuring recipient needs, barriers, and preferences are at the center of design and implementation, will be key to achieve long-term development outcomes.

The modernization of G2P payments will require strong coordination—a cross-sectoral, whole-of-government approach. Coordination across government agencies that make G2P payments and those that manage or oversee the relevant digital public infrastructures, as well as between the private and public sector, will be essential. The move toward digital payments will not happen overnight and sequential moves in the direction of a modern G2P architecture should be the goal, especially in countries that require substantial reforms and investments in digital public infrastructure to achieve their vision.







# 1

## Introduction

As we move into an increasingly digital world, governments across the globe are leveraging new technologies to deliver services better, faster, and more transparently. Globally, over a quarter of adults are receiving payments from the government<sup>1</sup>—whether through public sector wages, pensions, sectoral subsidies, or social protection programs, an increase of 400 million from just four years earlier. The increasing scale of these government-to-person (G2P) payments offers a huge opportunity to advance financial inclusion, advance women’s economic empowerment, and promote the development of the digital ecosystem.

Small efficiency gains on how G2P payments are distributed can represent big gains for the government. Developing countries spend a large portion of their gross domestic product (GDP) on such programs. Across a sample of 46 developing countries, on average, they were spending 1.5 percent of their GDP on social assistance payments, 3.6 percent on pensions, and 7.3 percent on public wages. In some cases, these expenditures were as high as 5.3, 12.4, and 14.1 percent, respectively. Seen together, the expenditures across all three categories could be as high as 27 percent in some countries.<sup>2</sup> In 2020, in the context of responding to the COVID-19 crisis, the spending on social protection programs increased even further, with COVID-19 response programs amounting to at least US\$80 billion across developing countries.<sup>3</sup> While many of these programs are temporary, they have reshaped how governments think about G2P payments, as they have clearly demonstrated how small efficiency gains can greatly improve a country’s ability to distribute assistance quickly and safely, whether during a crisis or otherwise.

From the perspective of recipients, adopting digital G2P payments has the potential to be more convenient and can accelerate long-term development outcomes, such as financial inclusion and women’s economic empowerment. Hence, such payments should be designed with recipients’ needs and barriers in mind. In an ideal scenario, this will entail leveraging fully functional accounts that can

serve as a gateway to other financial products and services, which can improve their financial lives and allow recipients to receive payments into an account of their choice.

While many countries have indeed started digitizing some of their government payments in the last decade,<sup>4</sup> not all countries have the necessary building blocks in place to implement, and benefit from, digital G2P payments. Many use nonaccount or limited-purpose account payment methods that are not conducive to financial inclusion but can still improve efficiencies by reducing leakages and increasing transparency. The choice of payment method to a large extent will depend on the existing payment and broader digital infrastructure in the country and the overall ecosystem for digital payments. Different countries will be at different stages of development in their digital payment ecosystem, and as a result, policymakers will have to navigate the various interests involved carefully.<sup>5</sup> Hence, the journey from primarily cash-based payments to delivering payments into fully functional accounts with recipient choice will be a multipronged effort over time, across several stakeholders, to establish the relevant infrastructure and policy building blocks that can enable this.

A G2P architecture encompasses all systems, infrastructure, regulations, policies, and design choices that enable and characterize the end-to-end delivery of G2P payments. The systems in the G2P architecture—including the national payments systems, social registries, public financial management systems, and identification systems, among others—have use cases beyond G2P payments. However, this note focuses on the characteristics of these building blocks as they specifically relate to designing a next-generation G2P architecture to support digital G2P payments in a way that they accelerate long-term development outcomes.

In this note, we describe the principles that an ideal G2P architecture should strive to achieve and some characteristics of its building blocks that ultimately contribute to recipients' convenience, inclusion and empowerment. However, there is no single specific G2P architecture to achieve these principles (section 2). The specific characteristics of an ideal G2P architecture for a country will vary depending on their existing infrastructure, policies, and even social norms. Therefore, these principles should simply guide the design of any country's G2P architecture, while recognizing that the specific characteristics of the building blocks may vary.

While in some cases leapfrogging might be possible, for most countries, reaching their ideal scenario will require a carefully planned sequential transition. Box 1 shows a few examples of G2P architectures that could describe the current situation in various countries. Developing a blueprint or roadmap can help define the sequential steps needed to develop a more recipient-centric G2P architecture. To develop a roadmap, in addition to defining the objectives and principles that a country's ideal G2P architecture will achieve, it is important to assess the country's "as-is scenario" or starting point that provides insight on the current G2P architecture and supporting ecosystem. There are several assessment tools that can be used to assess different aspects of these building blocks and the supporting ecosystem, including the [Inter Agency Social Protection Assessment Partnership \(ISPA\)](#) tool, [Payment Aspects of Financial Inclusion \(PAFI\)](#) tool, and [D3 framework](#). This assessment can then inform an intensive design exercise that culminates in the country's ideal scenario that describes a high-level, multiyear vision for an enhanced G2P architecture for that country. This scenario can then be translated into discrete and timebound, but manageable, tasks across various government stakeholders in a roadmap.

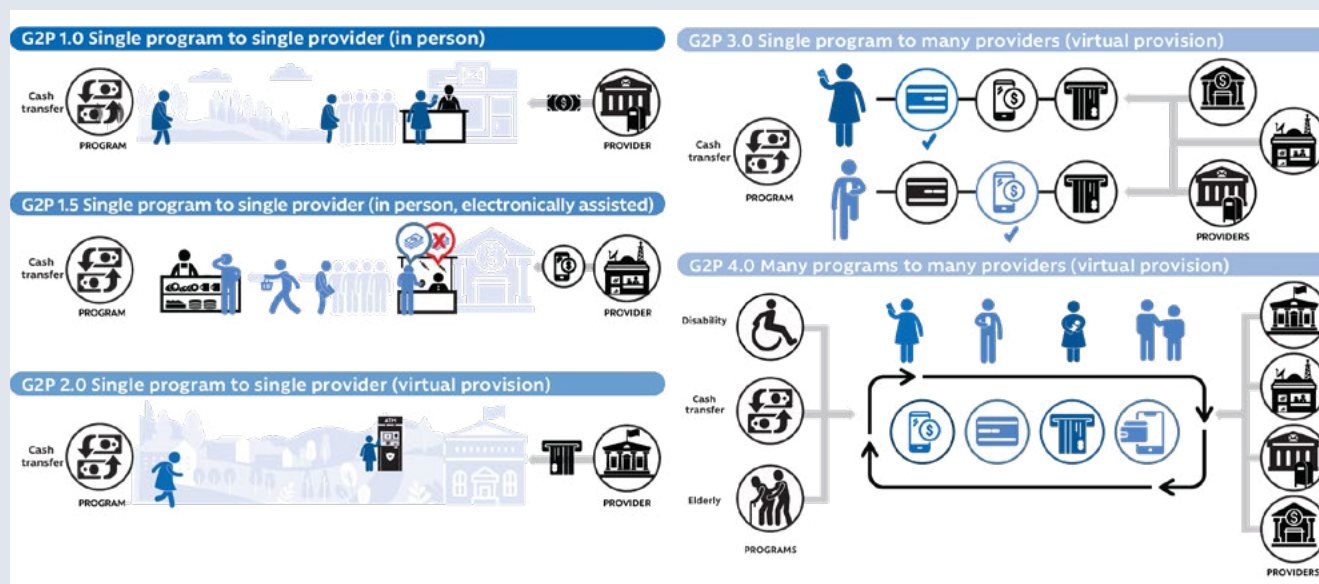
This note aims to provide a framework, including high-level principles and building block characteristics, to inform the design of a country’s ideal scenario. Its objective is to equip policymakers, World Bank engagements, and other development partners supporting G2P digitization across various contexts with a vision of the different infrastructure and policy building blocks that are recipient centric and enable choice-based delivery of G2P payments. However, as noted above, this scenario development must also be informed by an assessment of the starting point and stakeholders’ shared goals and vision based on a particular country context.

## BOX 1. Examples of Different G2P Architectures

This note describes the ideal characteristics and functionality of a modern G2P architecture. However, most countries will be departing from different starting points. Figure B1 shows five characterizations of different G2P architectures as employed in a social assistance program. The G2P 1.0 architecture is based entirely on offline cash payments, while a country that uses a G2P 1.5 architecture could be transferring payments electronically to the payment service provider, but the beneficiary only has access to cash. In the G2P 2.0 architecture, beneficiaries have access to an account and can therefore cash out at agents, automated teller machines (ATMs) or branches, or use

their electronic payment instrument. G2P 3.0 differs by adding a choice of payment service providers (PSP) and payment instruments for beneficiaries. Finally, the G2P 4.0 architecture featured below is aligned with the modern G2P architecture featured in this note, where not only beneficiaries have access to an account and choice, but many programs leverage the same shared infrastructure. The vision in this note, however, builds further on this architecture by emphasizing the use of shared infrastructures across G2P payment streams and other key building blocks to ensure access, inclusion, empowerment, and efficiency.

**FIGURE B1. Characterizations of G2P Architectures**



Source: World Bank 2020. “Sourcebook on the Foundations of Social Protection Delivery Systems.”



# 2

## The Objectives of Adopting a Modern G2P Architecture

Government-to-person (G2P) payments, including social assistance payments, social insurance benefits, and public sector wages, among others, have a variety of target groups. Many of these payments reach population groups such as social assistance beneficiaries, subsidy recipients, teachers, and health frontline workers, among others, that are more likely to be marginalized, financially excluded, and disempowered. Thus, digitizing these payments represents an important opportunity to advance development outcomes.

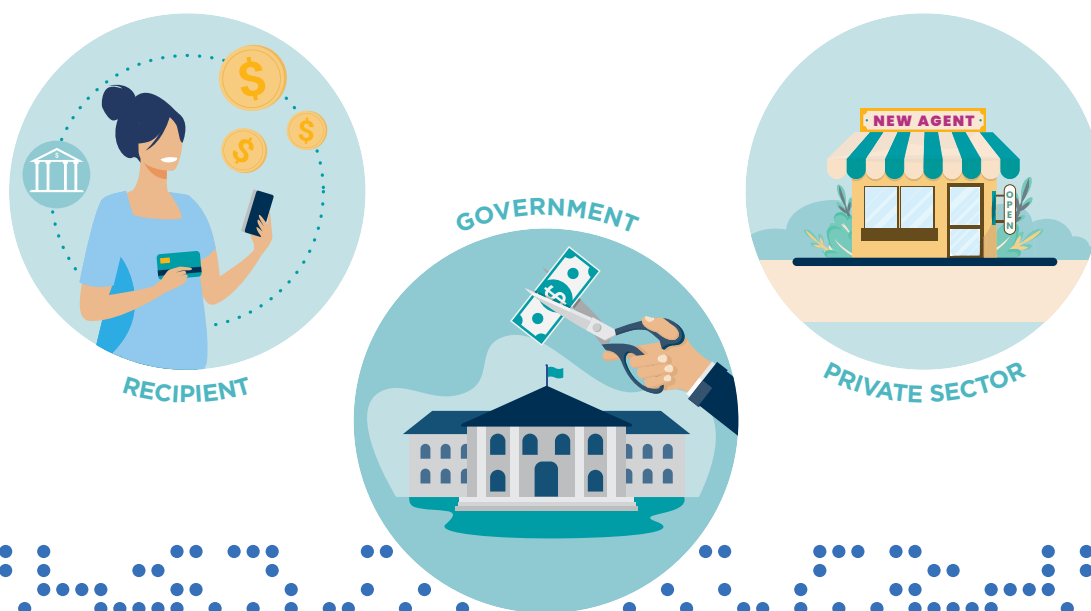
In the past, digitizing G2P payments had often been pursued in specific programs or agencies as a means to reduce costs or increase efficiency at the specific program or agency level. However, digitizing G2P payments—especially when making payments into fully functional accounts, offering recipients choice, and leveraging shared infrastructure—has the potential to move beyond program-specific efficiency gains to simultaneously increase recipient convenience, advance financial inclusion, empower women, create government-wide fiscal savings, and stimulate private sector development.

A country's G2P architecture, which encompasses all systems, infrastructure, regulations, policies, and design choices that enable and characterize the end-to-end delivery of G2P payments, will influence the degree to which these long-term development goals can be achieved.

There are three objectives that can be pursued when adopting such a modern G2P architecture:

- ▶ **Increasing recipients' welfare:** This includes improving the recipients' experience and increasing their convenience (for example, lower cost, lower time investment, shorter distance to cash out, better complaint handling, among others); financially including recipients by providing a gateway to access and use appropriate financial products and services that can help improve their financial lives; and empowering women through increased control of their resources, and increased agency and voice.
- ▶ **Enabling government-wide fiscal savings:** Digitizing payments that leverage shared infrastructure can create efficiencies across programs, reduce costs to the government, reduce leakages, improve targeting, and dissuade fraud and corruption. Ultimately, these improvements can lead to government-wide fiscal savings.
- ▶ **Spurring innovation and private sector development:** Taken together, G2P recipients across programs and payment streams represent a compelling pool of recurring transactions. For payment service providers, this reliable volume can translate into a compelling business opportunity that can spur competition, lower costs, and increase coverage. More broadly, increasing the mass of financially included individuals can also strengthen the business case for accepting and using digital payments, lead to improvements in the design of financial products and services for the previously financially excluded population, and stimulate financial infrastructure development where it may not have otherwise occurred.

While these objectives should be pursued concurrently, when designing some aspects of the G2P architecture, there will be tradeoffs, especially in terms of costs, between prioritizing recipients' welfare and enabling government-wide fiscal savings. It is important to consider both short-term and long-term benefits and costs when making these decisions. Developing a roadmap for the development of modern G2P architecture can help envision which sequenced G2P architecture improvements can lead to the desired long-term outcomes.



## BOX 2. Increasing Recipients' Long-Term Welfare Through Financial Inclusion and Women's Economic Empowerment

A modern government-to-person (G2P) architecture can improve recipients' immediate welfare by reducing costs and increasing convenience. It can also help to increase their long-term economic resilience through financial inclusion and by empowering women.

**Financial inclusion:** Financial inclusion is defined as the uptake and usage of a range of appropriate financial products and services by individuals provided in a manner that is accessible and safe to the consumer and sustainable to the provider.<sup>a</sup> In the context of G2P payments, the access to and usage of a transaction account (offered by banks, mobile money providers, and other nonbank payment service providers) can help individuals and households manage day-to-day financial needs and weather financial shocks by allowing them to improve risk-sharing between individuals' networks (through remittances) and store money in a secure place.<sup>b</sup> For many, a G2P payment into an account is their first or only regular interaction with the financial system.<sup>c</sup> Thus, programs and agencies making G2P payments are uniquely positioned to support financial inclusion goals.

However, account-based G2P payments do not automatically lead to full financial inclusion. Recipients might not have access to financial services and products that adequately address their needs, the accounts they have access to might not be perceived as a safe place to store money because of insufficient consumer protection or lack of trust, or recipients might not have full information on how their accounts work and what other financial services they can access through them. These, among other reasons, can lead recipients to only use the accounts for cashing out,

limiting the longer-term benefits they could reap from having access to the financial system.

**Women's economic empowerment:** Directing digital G2P payments to women can affect many of the key drivers of women's economic empowerment (WEE): deeper financial inclusion, greater bargaining power, and increased employment.<sup>d</sup> When a woman is empowered economically, she has greater agency and resources to control her life and make her own decisions—financial and otherwise—within and outside of the home. However, just as with financial inclusion, directing digital payments to women will not automatically lead to WEE. Gender gaps in identification (ID), and mobile phone and account ownership, as well as restrictive legal and social norms must be considered when transitioning to digital payments to avoid unintended exclusion.

To promote financial inclusion and women's economic empowerment, the development of a modern G2P architecture must be accompanied by clear national commitment and objectives to prioritize financial inclusion and close gender gaps. National financial inclusion strategies (NFIS), for instance, can support the development of the enabling ecosystem that is needed for recipients to truly benefit from financial access. While a modern G2P architecture must be designed with a gender-smart lens across its building blocks, its implementation must also be accompanied and coordinated with a national strategy for closing gender gaps and addressing restrictive social and legal norms. With this high-level commitment and direction, individual programs are then encouraged to make implementation decisions that are also conducive to financial inclusion and women's empowerment.

<sup>a</sup> World Bank (2018a).

<sup>b</sup> For empirical evidence, see, for example, Suri and Jack (2014), Suri and Jack (2016), Wieser et al. (2019), Lee et al. (2018), and Breza et al (2017).

<sup>c</sup> According to Global Findex (2018), receiving a digital G2P payment was the reason to open their first account for over 40 percent of individuals receiving government payments into an account in developing countries.

<sup>d</sup> For a brief review of some of the existing evidence, see Bull et al. (2021).





# 3

## The Design Principles of a Modern G2P Architecture

A modern government-to-person (G2P) architecture is one that increases recipients' welfare, enables government-wide fiscal savings, and stimulates the private sector to further develop the financial ecosystem. By definition, it must follow a recipient-centric design that places the recipients' convenience and needs at the center and addresses barriers and gaps to ensure effective inclusion, especially of women and underrepresented populations. In general, a modern G2P architecture is one that supports several programs and G2P payment streams, leveraging shared infrastructure and systems, and delivers payments that provide a choice for recipients, prioritizing their convenience and designing with their needs and protection in mind to achieve the long-term development outcomes of financial inclusion and women's economic empowerment, as well as government-wide fiscal savings (see figure 2). A modern G2P architecture should strive to achieve the following design principles.<sup>6</sup>



## INFRASTRUCTURE



### 1. Infrastructure is shared across programs and payment streams

The infrastructure that supports the delivery of G2P payments through every stage—which could include program targeting, registration, and eligibility assessment; account opening, registration, and mapping; payroll compilation and payment instruction execution; authentication; and grievance redressal, among others—should be leveraged across different programs and payment streams, instead of creating siloed infrastructure serving only a particular program or agency. This also includes leveraging digital public infrastructure such as national ID systems, national payments systems, and data sharing platforms, where available, which may have use cases across sectors outside of G2P payment delivery.

- **G2P architecture makes full use of the national payment system.** Where available, the delivery of digital G2P payments makes use of the National Payment System, including existing real-time gross settlement systems (RTGS), automated clearinghouses (ACH), or faster payment systems (FPS), to clear and settle payments made into recipient accounts. This means point-to-point connections from a government agency to payment service providers (PSPs) are avoided, and instead payments are routed through existing payments switches. These payment systems are interoperable across payment service providers, access channels, and instruments.
- **G2P payments are integrated into the central treasury system.** A modern G2P architecture centralizes the flow of funds by leveraging a treasury single account (TSA) and integrating G2P payments into the broader government payment framework utilizing an integrated financial management information system (IFMIS). Government agencies compile their payrolls and payment instructions, but these are executed directly by the treasury with the funds sitting in a TSA.

### 2. Limit bespoke solutions; build lasting infrastructure

When new infrastructure needs to be developed to support digital G2P payment delivery because there is no existing infrastructure in the country that would be adequate, it should be designed to support ongoing and future payments. This infrastructure should also consider the flexibility to support additional programs or agencies making G2P payments, and other use cases in the future.

### 3. Manual intervention is minimized

The infrastructure that supports digital G2P payment delivery is interoperable. Data exchanged for authentication, recipient eligibility assessments, mapping of recipients to accounts, payment flow, and reconciliation is automated from end to end and requires minimal manual intervention throughout each step.

### 4. Systems are scalable and secure

The systems supporting the delivery of G2P payments, including program, payroll or financial management information systems, data sharing platforms, ID systems, and payment systems, are scalable and have adequate security measures in place. This includes robust data privacy, data protection, and cybersecurity measures.





**5. Account used for delivery of G2P payments is a transaction account**

G2P payments should be delivered into transaction accounts wherever availability of financial access points and connectivity can ensure convenient access to funds for recipients. Transaction accounts can be offered by banks, mobile money operators, or other nonbank payment service providers, and the recipient is able to safely store money and make payments and transfers using an associated payment instrument with general acceptance.

**6. Recipients have choice**

Recipients can choose the payment service provider and payment instrument through which they receive their payments based on their informed choice; they can use the same account for multiple G2P payments, use an existing account if available, and easily switch if desired.

**7. Onboarding to an account is simple**

Onboarding to their preferred payment method is at low or no cost and easy for recipients. This includes being able to open an account remotely or at an access point close to them, the requirements to open the account are easily available for recipients, and they have the option of an account with no opening fees.

**8. Recipients are not subjected to clawback clauses**

Policies do not put undue limitations on recipients' use of funds. This includes no requirement for recipients to cash out their payment in full within any specific period.

**9. A wide cash-out and electronic payment acceptance network provides easy access and use of funds**

Recipients are able to cash out their funds at any time at a wide range of convenient financial access points, with a reasonable and clearly communicated withdrawal fee or at no cost; there are no informal or undisclosed fees. Recipients can use a payment instrument (for example, mobile wallet or debit card) linked to their account to make purchases or payments at a wide network of merchants and service providers.

**10. G2P payments present a sustainable business case and facilitate PSP competition**

A variety of payment service providers (including bank and nonbank financial institutions) operating in a competitive market are used to deliver G2P payments. The delivery of G2P payments should be sustainable for PSPs, either directly compensated by the government or through a viable model that represents a long-term or predictable business case for PSPs. Providers design and offer complementary financial products for recipients and support financial education efforts. Where applicable, contracts or arrangements with PSPs for G2P payment delivery do not negatively affect the market competition.





**11. Policies on data collection and registries ensure data is sex-disaggregated**

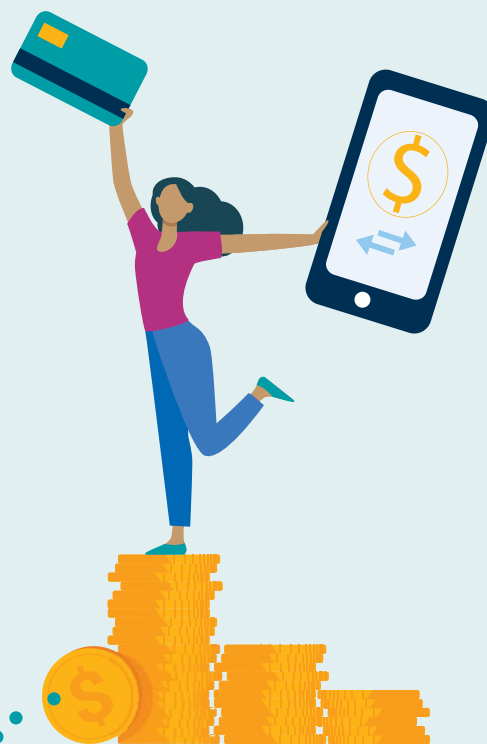
Government payment information and processing systems, such as social protection management information, pension, and payroll systems, among others, include sex-disaggregated data.

**12. G2P architecture is designed for individuals and prioritizes women**

The G2P architecture is designed with the recipients' needs, preferences, and barriers in mind. Recipients' needs are assessed, and the government ensures that all the recipients' different needs are addressed—regardless of location, gender, or other potential axis of exclusion—through at least one of the payment methods offered. Exceptions and specific arrangements for recipients who face barriers to access digital payments are incorporated. Gender gaps are considered in the design, and there is intentional focus on tackling barriers for women to access and use digital payments. Recipients are provided digital and financial education to be able to confidently and safely access and use their accounts.

**13. Recipients are well-informed, protected, and have access to redressal**

Recipients are well-informed, protected, and have access to redressal. They know when, where, and the value of the payments that will be made, understand how their payment method works, any associated costs, how to use their payment instrument, and how to access their payment. They can easily access and know how to access effective grievance redressal mechanisms, their funds are secured, and their data privacy is ensured. Payment service providers follow the United Nations (UN) principles for [responsible digital payments](#), including treating recipients fairly, safeguarding their data, and making recourse clear, quick, and responsive.





# 4

## The Framework

A government-to-person G2P architecture encompasses all systems, infrastructure, regulations, policies, and design choices that enable and characterize the end-to-end delivery of G2P payments. A modern G2P architecture incorporates the design principles mentioned in section 3 and aims to accelerate financial inclusion, women's economic empowerment, and government-wide fiscal savings.

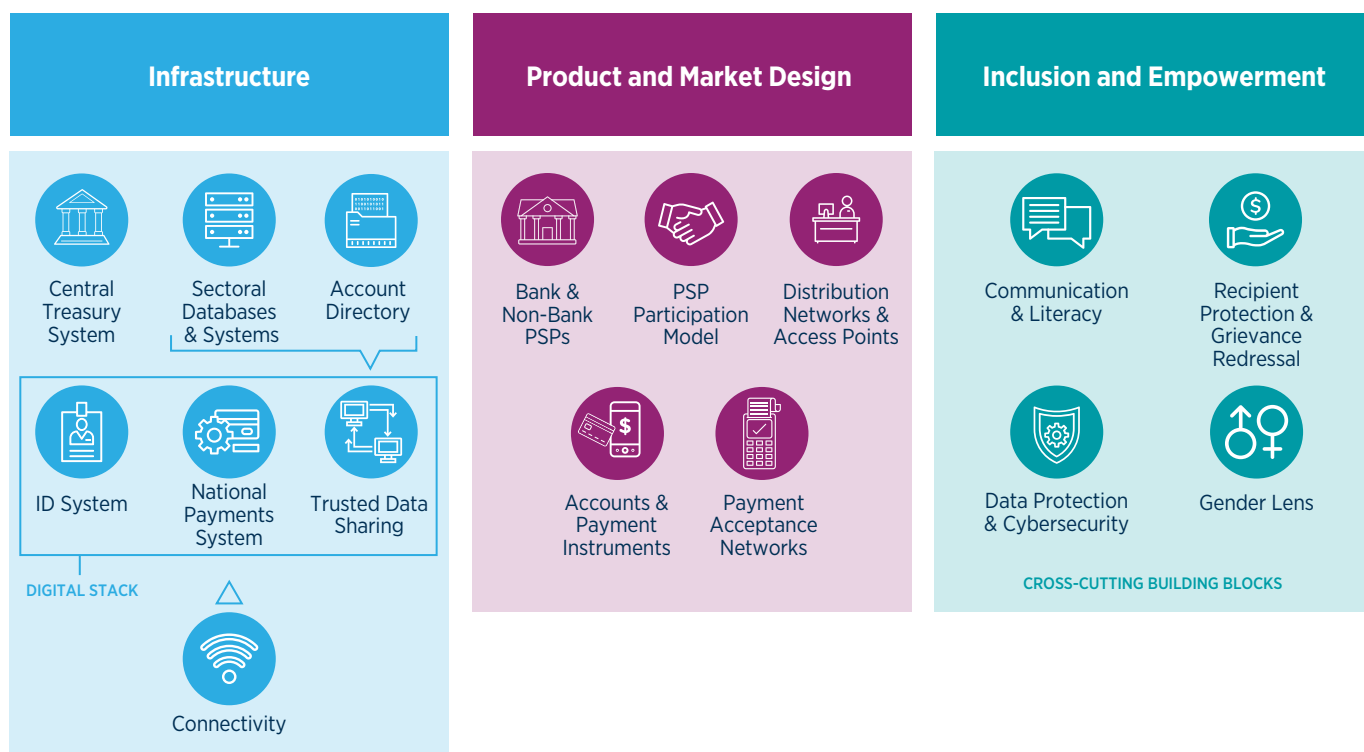
The framework for a modern G2P architecture is presented in figure 2. This framework is organized thematically to depict the main building blocks that comprise a G2P architecture and that should be assessed and considered when developing a country's ideal G2P architecture. It does not, however, represent a process flow, and therefore, the building blocks and elements are not meant to describe the flow of funds or information.

Every country will have a different starting point in terms of policies, infrastructure, and systems to build from to develop a recipient-centric G2P architecture. In general, there are 16 building blocks that are needed to deliver digital G2P payments in a way that can lead to long-term development outcomes. These building blocks, shown in figure 1, are organized around three pillars: infrastructure, products and market design, and inclusion and empowerment. Key elements that should be considered in each of these building blocks to ensure that the design principles are achieved are described in more detail in section 4.

The availability and characteristics of these building blocks, in addition to how they interconnect with each other, define the G2P architecture in a country. The G2P architecture, in turn, supports the payment methods used in specific G2P payment streams. As discussed, the payment method used to deliver a G2P payment can have a positive impact on the recipients' well-being and the government's fiscal efficiency. However, the payment options available to a specific program or agency

disbursing G2P payments (for example, social assistance or public sector wages) are circumscribed by the existing national infrastructure and G2P architecture in place. Meanwhile, the state of this infrastructure is largely determined by government policy, as reflected in the legal and regulatory environment of individual countries. For instance, financial sector regulations on e-money issuance, licensing of nonbank financial institutions, or access to national payments systems will directly affect the development of the systems and infrastructures that can support digital G2P payments. In general, an enabling legal and regulatory framework will be a precursor to the infrastructure that can support a recipient-centric G2P architecture.<sup>7</sup>

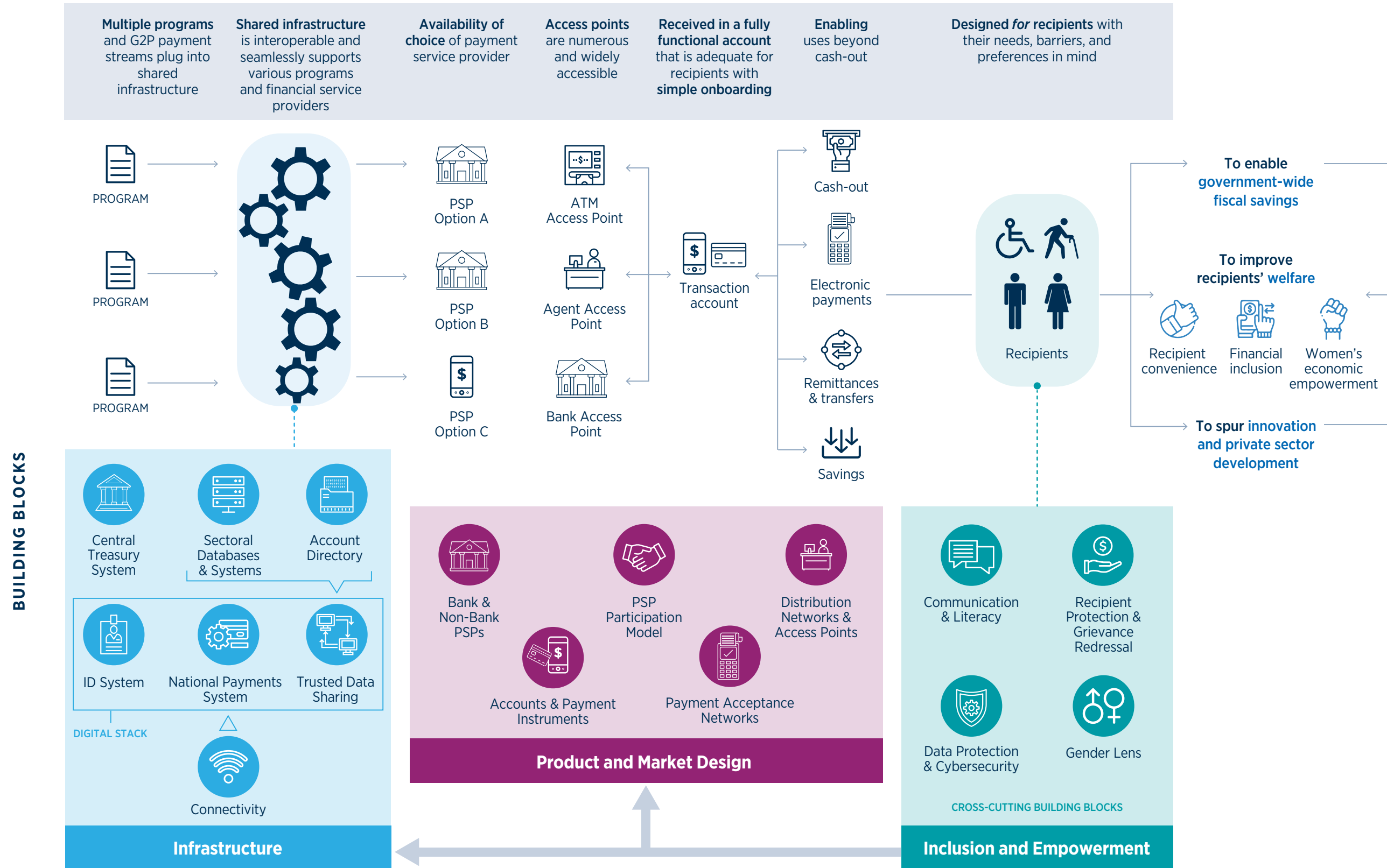
**FIGURE 1. Next-Generation G2P Payments Building Blocks**



The challenge for the government agencies making G2P payments (for example a social assistance program) is to optimize the delivery method within these infrastructural constraints. If, for example, there is no foundational identification system, the program administrator will have to create a program-specific recipient identifier. It could be expensive to do so properly, and ensuring uniqueness could be challenging. Another example is the determination of eligibility. Each social assistance program will have to collect data—much of it overlapping between programs—unless a common social registry has been made available or it is possible to cross-check the relevant variables across administrative data sets (for example, age from the civil registry, ownership of assets in the property registry, and so forth).



**FIGURE 2. Modern G2P Architecture Framework**





# 5

## Modern G2P Architecture Building Blocks

### 5.1 INFRASTRUCTURE

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In a modern government-to-person (G2P) architecture, multiple agencies and programs making G2P payments leverage the same infrastructure to manage and distribute their payments. This includes sharing sectoral databases (for example, a comprehensive social registry), leveraging digital identification (ID) systems, distributing payments through the national payments systems (real-time gross settlement systems/ automated clearinghouses [RTGS/ACH], card switches, mobile money switch, and faster payment systems [FPS]), pooling resources and payment instructions at the treasury, and using account directories / central mappers where appropriate to manage payee information (see table 1 for a summary of main systems supporting G2P payment delivery).

When each agency making G2P payments (or even each program within an agency in the case of subsidies or social assistance) are digitized one by one, it is harder for these payments to contribute to the necessary improvements across the payment ecosystem. Instead, when multiple of these G2P flows are viewed together, they can support economies of scale and bring more actors and funds to the table to push for change. When these payment flows are viewed together, their value can be sufficiently large to justify building out financial access infrastructure in rural and underserved areas. It can contribute to the business case to upgrade or develop payments, identification, or data sharing systems, and it can impact the speed at which necessary reforms are prioritized in the national

agenda. These economies of scale can ensure that G2P modernization has a broader impact and drive improvements to the broader digital payment ecosystem.

**TABLE 1. Summary of Systems Supporting Digital G2P Payment Delivery**

System	Role in G2P payment delivery
ID system	Supports verification and authentication of recipients at account opening and program registration (if applicable)
Retail payments infrastructure	A retail payments switch (ACH, RTGS, or FPS) enables G2P payments to be sent directly to recipient accounts across various payment service providers.
Data exchange platform	Allows different systems to securely share information and process queries; for example, administrative databases across government agencies.
Social registry	In the case of social programs, these information systems support outreach, intake, registration, and determination of potential eligibility.
Social protection management information system	Contains modules, among others, that support eligibility assessment, benefit calculation, and compilation of payroll lists. These MIS could include a payment initiation module. If not, they interface with the system that creates the payment instruction.
Account mapper	Provides a central database where recipients' IDs can be matched to their account number.
Financial management information system (IFMIS)	Contains modules, among others, to compile public wage payroll lists and manage G2P payment instructions.
Treasury single account (TSA)	Maintains the funds from across government programs and agencies. Resources flow from the TSA to recipient accounts through the national payments system.

Note: G2P = government to person; ID = identification; ACH = automated clearinghouse; RTGS = real-time gross settlement; FPS = faster payment system; MIS = management information system.

## 5.1.1 Digital Stack

Digital public infrastructures (DPI) can play a critical role for effective public administration, service delivery, and innovation across multiple sectors, both public and private. For G2P payments in particular, trusted digital systems for identity verification and authentication, digital payment systems, as well as structures that facilitate trusted data exchange between these and other sectoral databases and applications are key elements. Combined, these platforms can work together as a “stack” to support service delivery and a dynamic digital economy.

### ID systems

Modern ID systems facilitate secure verification and authentication of identities of G2P payment recipients. Being able to reliably verify basic identity information—in other words, to confirm that a person is who they claim to be—is important to ensure that the intended individuals are the ones

receiving the G2P payments. In addition to helping tackle fraud and corruption, high coverage ID systems can also help with targeting and expanding recipient lists. Having a trusted, digitally enabled proof of identity can empower individuals to access services and transactions more easily and conveniently, for example, by reducing the number of documents needed to meet financial institutions' customer due diligence requirements to open an account, or to confirm eligibility for a program, or by enabling people to apply for a government subsidy from the comfort of their own home over the Internet. Thus, ID systems can play an important role for advancing financial inclusion and the digital economy.



*Trusted and inclusive ID systems can facilitate social program registration, beneficiary authentication, and account opening.*

Although the technologies, processes, and data used by modern ID systems will differ from country to country, there are a number of shared features that are important for these systems to be able to serve as effective platforms for the delivery of G2P payments.<sup>8</sup> These include, among others:

- ▶ Being fully accessible, that is, ensuring that all can register and obtain relevant identity credentials
- ▶ Able to uniquely identify a person (in other words, no duplicate identities), therefore ensuring that a single individual is registered in—and thus paid by—the programs only once
- ▶ Able to ensure that identity data are accurate and up-to-date
- ▶ Able to digitally verify and authenticate a person's identity, including the availability of authentication services for financial service providers to meet know-your-customer (KYC) requirements
- ▶ Use of standards and design principles that allow for interoperability with other systems and platforms

For ID systems to function as effective digital platforms, risks such as exclusion, the misuse of data, and vendor and technology lock-in must be effectively mitigated. Ensuring full coverage of the ID system among intended G2P payment recipients, including women, the poor, displaced persons, persons with disability, etc. who often face added barriers to obtaining identity credentials, should be a priority to ensure that no one is left behind.

### **BOX 3. Peru's Unique ID Number Contributed to Quick Social Protection Response**

In Peru, the unique foundational ID number helped to quickly adapt the recipient list for social assistance when COVID-19 radically changed the number and types of individuals in need of support. During the first phase of COVID-19 emergency cash assistance, the government simply increased the eligibility cutoff for those already listed in the social registry, based on a pre-pandemic poverty ranking. In the second phase,

the unique foundational ID number was used to cross-check the social registry against new income and social insurance data to ensure that payments were delivered to those most in need. Peruvians could check eligibility online using only their national ID number and even open a bank account, the 'Cuenta DNI',<sup>a</sup> remotely using only their ID number to receive government transfers (World Bank 2020a).

<sup>a</sup> For more information on 'Cuenta DNI', see, [www.gob.pe/12560-cuenta-documento-nacional-de-identidad-cuenta-dni](http://www.gob.pe/12560-cuenta-documento-nacional-de-identidad-cuenta-dni).

## National payment systems

Recipient-centric digital G2P payments necessarily interface with the national payment system. It is the infrastructure through which payments flow from the government to the different providers (which are crucial to the recipient being able to exercise account choice). The configuration, robustness, and strengths of the payment system will determine how payments are routed, to which providers, how quickly, and at what cost.



*G2P payments leverage national payment systems, which support interoperability and market competition.*

Utilizing the national payment systems represents enormous advantages over programs and agencies arranging bespoke payment delivery solutions. In a modern G2P architecture, the national payment systems will be used to operate at scale, quickly, transparently, and with certain recourse mechanisms.

Benefits of leveraging a robust national payments system include:

- ▶ **Account utility:** Use of the national payment systems helps to ensure that recipient accounts are connected with the regulated financial system and thus can be used for other types of transactions and financial services on receipt of the G2P payment. This utility, given time, may translate into more meaningful financial inclusion.
- ▶ **Improved G2P payments management:** Utilizing the payments systems helps programs to move beyond bespoke solutions to a single, scalable, efficient, and cheaper infrastructure. This has a myriad of benefits, such as increased transparency and simplified payment reconciliation.
- ▶ **Improved recipient G2P experience:** Recipients will receive their funds more quickly, with less errors.<sup>9</sup>

There are several characteristics of a national payment system that are needed to support a recipient-centric G2P payments system, including:<sup>10</sup>

- ▶ RTGS/ACH/FPS and card switches exist, and enable interoperability and fast payments<sup>11</sup>
- ▶ These retail payment infrastructures are accessible to all payment services providers
- ▶ Standardized processes and infrastructure for payment acceptance are in place, reducing costs and increasing incentives for electronic payments acceptance among merchants
- ▶ Interoperable infrastructure for bulk payments, agent transactions, and retail payments are in place, translating to a higher number of access points and use cases for recipients
- ▶ Pricing policies for off-use transactions (for example, cash withdrawals at an ATM from a bank different to the individual's bank) are reasonable and aligned to market development needs, avoiding prohibitive costs to recipients that erode the benefits of interoperable access points

Payment systems interoperability, in particular, is critical for a modern G2P architecture. Interoperability is facilitated by a payment switch—an electronic clearing system that interconnects multiple financial service providers, transaction channels, and payment systems to one another. There may be one government-owned and operated payment switch in a country managed as a public utility or there may be multiple switches owned and operated by private and public shareholders. Any payment switch will require that all partners agree on and abide by standard rules and protocols.

Leveraging a payment switch in the distribution of G2P payments enables the government to send payments to recipients with accounts across different payments service providers (PSPs) without having to set up one-to-one processes (for example, application programming interface [API])

connections) with each provider. A specific program or agency could, for example, have a single connection to a sponsor bank with whom they maintain their funds who could execute payments to recipients across different banks by being connected to a payments switch. In the ideal scenario, however, a specific program would require no connection to a bank; instead, payment instructions would be sent to the treasury directly, who would then execute the payments with resources from the treasury single account (TSA) administered by the central bank or commercial bank connected to the payments switch.

Interoperability positively affects other factors, namely the distribution network and acceptance network, as it allows recipients to use their account to withdraw funds at access points associated with a number of PSPs, and to send money to friends and family regardless of whether they have the same provider. It can also contribute to fiscal savings for the government, as it facilitates sending money to many account types in real time without additional processes and systems. Additionally, it increases the value proposition for PSPs, who can gain revenue from payments in interoperable systems that they may not be able to achieve with closed-loop, non-interoperable systems.

#### BOX 4. India's Interoperability at Scale and G2P Payments

India provides a rare example of interoperability at scale. The country has connected more than 400 government programs (including state government programs) to the national payments systems (including the National Electronic Funds Transfer [NEFT] System, the National Automated Clearing House [NACH]) and the Aadhaar Payment Bridge [APB] systems) to make payments directly to recipients' accounts across banks.<sup>a</sup> Once

funds are received into an account, recipients can make use of various payment instruments and systems for payments, including the Unified Payments Interface (UPI). The UPI allows recipients to send money directly to other bank accounts or make purchases at any merchant—greatly expanding the payment acceptance network (Cook and Raman 2019).

<sup>a</sup> For more information on India's Direct Benefit Transfer payment architecture, see <https://dbtbharat.gov.in/page/frontcontentview/?id=MTAwMA>.

### Trusted data sharing

The ability of different databases, systems, and devices—both within and across organizations—to communicate with and understand each other is crucial for developing efficient, sustainable, and useful digital ecosystems. This data exchange may involve multiple elements and layers of technology, including wired connections, APIs, web services, cloud services, and more. However, effective data exchange platforms go beyond technology; they encompass the technical, semantic, and process aspects that allow different systems to securely share information and process queries, and a set of regulations and institutional arrangements governing access to information among participating entities.



*Trusted data sharing ecosystems support shared infrastructure across programs and agencies making G2P payments, and other use cases.*

In the case of G2P payments, ID systems are critical for verifying who is on the receiving end of the transaction with a high degree of assurance (opening an account, being included in a social assistance program, or receiving any other government payment), and digital payment systems help ensure that financial transactions can be conducted instantaneously and transparently. Yet interoperability layers or data exchange platforms are needed to work as the connecting gears that allow these systems—and many others—to exchange data with each other seamlessly. For example, during COVID-19, many countries were able to quickly identify and register new social assistance beneficiaries by leveraging data sharing across administrative data sets (for example, social insurance databases, electricity consumption, and so on) where beneficiaries could be identified with a unique ID. In this context, countries with advanced data sharing ecosystems were also able to facilitate account opening by sharing data across the government and financial service providers.

To enable data sharing across different government agencies and providers in an agile and seamless manner, it is important to design with the following in mind:<sup>12</sup>

- ▶ An **interoperability** layer through which G2P payment stakeholders (including government agencies, PSPs, and recipients) can exchange select data and queries
- ▶ **Safeguards** to curb potential abuses, ranging from weak security of data transactions to the opaque collection and sale of personal data by third-party data brokers
- ▶ **Data transparency and portability**, whereby individuals are able to provide consent at the appropriate touch point, made to understand how their data will be shared and used, view their personal information and records, as well as who has accessed their data, and can share this verifiable information via a secure channel with government agencies and service providers of their choice

## 5.1.2 Central Treasury System / Financial Management Information System

In a modern G2P architecture, a centralized treasury system, usually called financial management information system (FMIS), is used to process government payments against the budgetary allocations. It supports (1) the treasury single account (TSA) that aggregates all incoming government receipts and disburses all government payments and (2) budget management to ensure budget compliance, tracking, and reporting. A treasury single account is either a single bank account or set of linked accounts through which the government transacts all its receipts and payments. The integrated financial management information system (IFMIS) provides the ministry of finance with a unified view of the government's budget execution.<sup>13</sup>

Linkages of the payment systems to the budgetary systems are especially important for ensuring budgetary compliance, timely availability of authorized funds, and financial reporting. The budget structure, whether program-based budgeting or line item-based budgeting, influences these linkages. Under program-based budgeting, the program managers have much more autonomy to disburse funds made available through budgetary release/authorization at more aggregate levels. Also, the



*The central treasury system is integrated with the national payments system and supports efficiency and transparency.*



timely availability of cash for the social protection programs could be prioritized, like salary and pension payments, through these linkages.

For programs that are issuing digital, account-based payments, the payment order/advice issued from IFMIS disburses funds from the TSA into an interbank payment system, which transfers the corresponding funds to the recipient's account.

Together, a robust IFMIS and a TSA are pillars in improving the safety and efficiency of government payment programs. A well-functioning centralized treasury system can improve transparency by yielding effective and reliable reports on the overall financial situation of the government. The TSA, in particular, ensures effective aggregate control over government cash balances and drives fiscal savings by reducing transaction costs and facilitating the reconciliation between banking and account data.

The central treasury system should aim to have the following characteristics:

- ▶ **Few failures or returns:** A low rate of transaction failures or returns
- ▶ **Transparency:** A system that is easy to reconcile as these are public funds that need to be accounted for
- ▶ **Integrated** with the national payments systems (NPS)—automatic clearing house (ACH), real-time gross settlement systems (RTGS), or fast payments systems (FPS)—through the electronic fund transfer (EFT) mechanisms to reduce the number of steps from program to recipient account
- ▶ **Fast** payments that make their way from the treasury to recipients quickly and efficiently through the integration with the NPS

The information technology (IT) audit of this central treasury system in particular very important. Often, there is no strong mechanism in countries to conduct a holistic review of IT systems used for G2P payments. Weaknesses could create vulnerabilities that could be exploited or cause mistakes that involve substantial dollar value. Internal controls within the systems to ensure adhering to the rules and eligibility criteria and avoiding fraud and misuse of funds by implementing agencies could be key focus areas of auditing.

### 5.1.3 Other Supporting Databases and Systems

#### Sectoral databases and systems

As mentioned above, ensuring data sharing across government databases is a crucial part of a modern G2P architecture to create efficiency gains. Depending on the type of G2P payment stream, different sectoral databases and systems will be relevant to the end-to-end delivery of government payments. Some examples include social protection databases for social assistance payments, agricultural or energy databases for sector specific subsidies, teacher and other government employee payrolls for public wages, among others. The robustness of these databases and systems is critical as they feed the payment and recipient information in the G2P architecture. For example, if the payroll list for a social program is generated inaccurately then the payment made through the payments system will be the wrong amount, to the wrong people or both. In this section, we highlight specifically the relevant social protection systems for social assistance payments as one of the main use cases.

## BOX 5. Turkiye's Integrated Social Registry

In Turkiye, the Integrated Social Assistance System (ISAS) enables all social assistance processes to be carried out electronically, including applications, investigations, payments, monitoring, accounting, and auditing. ISAS is integrated with 28 public institutions and the e-Government Gateway. Approximately 57.5 million individuals, representing 17.7 million households, are registered in the ISAS database. Those applying for social assistance only need their national ID, which is then used to cross-reference information across relevant databases linked to ISAS, as a first step to determine eligibility for a particular program. Through the use of a common identifier and interoperable digital databases

ISAS decreased the number of documents needed from 17 to just one (the national ID card), the time to apply from days to minutes, and the time to process applications and deliver the benefits from months to days (ISPA 2016). Before COVID-19, ISAS processed at least 10 million applications per year. During COVID-19, it was integral to delivering social assistance to 7.2 million households, where even those not registered in ISAS could simply apply through the e-government portal. And given its integration with ISAS, payments could then be processed through the system (World Bank 2022b).

### SOCIAL REGISTRIES

For social protection G2P payments, social registries are an important building block in a recipient-centric digital G2P architecture. Social registries are information systems that support outreach, intake, registration, and determination of potential eligibility for one or more social programs.<sup>14</sup> As such, they are the gateway to the inclusion of populations of interest into social programs. In a modern G2P architecture, the social registry will allow for the following:

- ▶ Multiple programs can leverage the same social registry (also called an integrated social registry) to identify potential beneficiaries, creating economies of scale and therefore government fiscal savings; and
- ▶ Interoperability with other information systems through a robust data exchange protocol that facilitates cross-agency data sharing and allows for dynamic inclusion, data quality, efficiency, and integrity.<sup>15</sup> This robust data sharing is enabled by the digital foundational ID system (section 4.1.1.), which is key to reducing inclusion errors and enabling data sharing.



*Program administrators can leverage an integrated social registry with which they can easily identify potential recipients.*

## BOX 6. Iraq's Integrated Social Registry and Fiscal Savings

By integrating beneficiary information across several programs, Iraq's Social Safety Net Information System allowed the Ministry of Labour and Social

Affairs to identify duplicate (and sometimes triplicate) beneficiaries, resulting in a savings of about US\$18 million to the system's budget (Barca and Chirchir 2014).

## PROGRAM AND PAYROLL MANAGEMENT SYSTEM

In the case of social protection payments, the social program management information systems (MIS)—also called beneficiary operations management systems (BOMS)—automate information processing for eligibility and enrollment decisions, decisions on the benefits and service package, and data management relevant to the status of each recipient. In a modern G2P architecture, program and payroll management systems will:

- ▶ Facilitate the collection of sex-disaggregated data and use these insights to inform program design and reduce exclusion risks.
- ▶ Integrate with a payment initiation system. While in some cases a social program MIS can have a payment initiation module, there are efficiency gains from sharing a payment initiation system across programs and agencies. A shared initiation system or portal is one that is available across programs to initiate payment instructions once a payroll list has been produced within a specific program’s management system. This payment initiation system can be a stand-alone system or a component of the treasury’s IFMIS.
- ▶ Integrate with an account directory (as shown in the next section) that allows recipients to indicate and update their preferred account.
- ▶ Support payroll processing—enrollment, pay scales and grades, personnel actions, calculations, verification, payment approval, and budget checks. These systems are typically integrated with IFMIS.



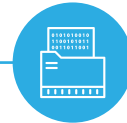
*Payments can be initiated simply and flow into accounts reliably, quickly, and at a low cost.*

## Account directory

To simplify payment routing, an account directory or mapper can be useful.<sup>16</sup> An account directory is a system that maps a recipient’s unique identifier (that matches the record in the program or agency management or information system) to the transaction account where the recipient wishes to receive their G2P payment. The identifier can be a national ID, phone number, or other number or alias that can uniquely identify individuals across social protection and financial sector databases.

An account directory can take several guises: it may be a database or a piece of software that pulls data from multiple registries. The specific design will depend on the country context, as well as its location, which may be embedded within social protection systems or the payment systems infrastructure, or may be a stand-alone solution interoperable with the relevant systems and databases.

A well-designed account directory or mapper requires each government program to “seed” recipients’ ID information into its database. Thereafter, to initiate a payment, the program needs only to send the ID number to the mapper where it is paired with the standing payment and account information. This means that each program does not need to separately maintain the payment and account information. Recipients can thus enroll in several different payment streams without duplicating efforts and, when a change is desired, make those changes centrally, at the mapper level.



*A dynamic directory matching recipients and their account numbers enables multiple programs to direct payments to the same account and recipients to switch PSPs.*

A well-designed account directory allows recipients to easily change or update their preferred account information across multiple government programs through a single interface. It also incorporates consumer protection measures to protect against any abuse.

Instituting an account directory makes administering G2P payments easier and therefore less error-prone for programs. Recipients gain from receiving their funds through a more robust system. They can expect fewer targeting errors, faster payments, less hassle, and less need to appeal to any recourse mechanism.

In a modern G2P architecture, there will be a shared directory available that can serve multiple government payment streams and programs. This will support recipient choice by allowing programs to keep up-to-date account information of recipients without necessarily having a contractual relationship with all PSPs and giving recipients the option to receive payments into the account of their preference. Thus, a well-designed mapper embodies the following characteristics:

- ▶ Utilizes a form of identification that is widespread among the recipient population and easy to use. A robust national ID is ideal.
- ▶ Complies with data handling procedures for data sharing and consumer protection legislation and protocols.
- ▶ Simplifies payments administration for programs and agencies making G2P payments, as well as for recipients.
- ▶ Allows for a single point of integration for G2P distribution (plug and play) so that any participating program can make use of it to route payments.
- ▶ Eliminates the need for each program to administer payments routing information for their recipients.
- ▶ Eliminates the need for recipients to modify their information for multiple programs or payment streams.
- ▶ Minimizes the risk of recipient account information data breaches or misuse in G2P operational activities that might occur if data are managed across multiple databases.<sup>17</sup>
- ▶ Supports rapid scaling up of existing programs and the creation of new programs in emergencies such as COVID-19.
- ▶ Utilizes relatively simple hardware and software.

### 5.1.4 Connectivity

Many of the physical components needed for recipients to access funds in a modern G2P architecture—for example, mobile phone, point of service (POS) devices, or biometric scanners—rely on a country's mobile and broadband network and electrical grid. For instance, a connected and charged mobile phone is required for recipients to receive a short message service (SMS) message notifying them of a cash transfer, to receive a one-time-password (OTP), to transfer funds using unstructured supplementary service data (USSD) on their phone, or make digital payments using a debit card or quick response (QR) code, while the agent or PSP branch they visit to withdraw funds will



*A stable connection to mobile and broadband network, and to the electrical grid are accessible where recipients are located.*

need to complete the withdrawal transaction on their POS device, which also must be connected to the Internet and to a power supply.<sup>18</sup>

Thus, to adequately support G2P payments at scale, connectivity infrastructure will have the following characteristics to ensure convenient access to and usage of payments for recipients:

- ▶ A stable connection to the mobile network is available to rural areas as well as urban.
- ▶ Broadband connectivity is available and supports mobile Internet connection in rural areas as well as urban.
- ▶ Access to the national electrical grid is nearly ubiquitous, and where it is not available, there are affordable and accessible off-grid options for recipients to charge phones and other devices.
- ▶ Mobile phones of sufficient quality are affordable and accessible, with no perceivable gender gap in mobile phone ownership. While basic mobile phones are sufficient for most G2P payments at this time, smartphone ownership and Internet data plans are becoming increasingly affordable. This is noteworthy as smartphones can support pathways to more robust financial service products.

## 5.2 PRODUCT AND MARKET DESIGN

Recipients of G2P payments often come from diverse populations. Some may be better served by one bank but not another. Others may prefer payments to a mobile money account instead of to a conventional bank account. Programs or agencies that require all recipients to use the same provider do not account for diverse recipient circumstances. Recipient preferences may differ from what program designers expect and underscore reasons recipients should be able to choose for themselves.

With sufficient investment in raising recipients' awareness of different providers so that they can make a truly informed decision, recipient choice can shift providers' incentives in a fundamental way: their goal becomes winning the loyalty of recipients. In a G2P architecture with informed choice, if a provider's service quality slips, that provider stands to lose the recipient's business to a competitor. The shift toward recipient empowerment and better recipient service could help build a foundation for greater financial inclusion, as it can instill greater trust in financial services and better recipient service.

Empowering recipients to choose agents or other points of service they value the most reduces leakage (including corruption), discrimination, and fraud. Recipients are likely to prefer and therefore choose the agent who best meets their needs and is least likely to charge unofficial fees.<sup>19</sup> Women can choose an agent with whom they feel the safest.

### BOX 7. Bangladesh's Female Agents

In Bangladesh, a 2018 survey found that 52 percent of female users preferred female agents because they were perceived to be more trustworthy and approachable than male agents. However, with only 1 percent of agents being female, 97 percent of female users visited

male agents to conduct transactions. Those who visited female agents made, on average, a higher number of transactions than those who visited male agents (Barooh et al. 2018).

There are other likely cost reductions for recipients, including not having to open new accounts to enroll in programs and instead routing payments to an existing account. In a modern G2P architecture, recipients do not have to repeatedly open accounts. A better user experience for recipients will increase support for the programs or agencies making the payments, and may also contribute to increased usage.

Governments also have reasons to support greater recipient choice. One factor is cost. Leveraging the existing infrastructure of many different providers, rather than relying on the proprietary network of one, lowers delivery costs by leveraging the existing infrastructure more effectively. Governments also benefit by minimizing, or removing, the need to procure the services of individual banks, mobile payment providers, or other payments providers, leaving them less vulnerable to vendor lock-in in the long run. By enabling disbursement via any PSP, the government can move funds over to existing payments schemes, agent networks, and infrastructure that have established standards and pricing. In some countries, this change in procurement may reduce the risk of corruption arising through the procurement process.

Over time, empowering recipients with choice will lessen the government's need to enforce service standards. When recipients can choose which provider to use, providers will have stronger incentives to compete with better products, and governments will need to rely less on service-level agreements (SLAs). Ultimately, it is about creating a situation whereby the need for managing payments shifts away from the programs and agencies making payments, to the payments system where it belongs, in effect allowing government programs to fully focus on what they are best at: improving the lives of their recipients.

An architecture that enables government programs and agencies to connect into it at one end and PSPs to serve their recipients at the other end enables scale. The architecture suggested in this note seeks to pool this large number of recipients and make them accessible for PSPs and drive the development of the digital payments ecosystem.

## 5.2.1 Bank and Nonbank Payment Service Providers

In the context of G2P payments, payment service providers (PSPs) are the institutions—banks, mobile money providers, or other nonbank regulated financial institutions—that channel the G2P payments to recipients. In the case of account-based payments, the payment service providers are the account issuers—the institutions that hold and manage recipients' accounts, which could be directly contracted by the government or not—or, in some cases, a principal financial institution hired by the government to channel the G2P payments to recipients' accounts that might be held in other PSPs.



*Open to a variety of PSPs—state and commercial banks; bank and nonbank PSPs.*

In a modern G2P architecture, there are several providers distributing G2P payments, including bank and nonbank providers, leading to competition, better service, and wider access. This requires enacting regulations allowing for nonbank and e-money issuers to provide payment services (including fully functional accounts) since nonbank payment service providers may, in some cases, be better placed to serve low-income clients because they have lower cost structures than traditional

commercial banks.<sup>20</sup> In cases where a country's legal framework specifies the type of PSPs allowed in the distribution of G2P payments, this needs to be reformed to allow any PSP, bank, or nonbank regulated financial institution to participate.

Having many different types of providers included in the architecture means that recipients have as wide a choice of providers as possible. Ultimately, if payments are routed leveraging interoperable national payment systems (RTGS/ACH/FPS) and an account directory exists, all connected PSPs could be an option for recipients. With program support to ensure that recipients are fully informed of their options and that safeguards are in place to ensure provider transparency in pricing and other features, recipients will be able to make the best choice for their individual circumstances.

Maintaining quality and standards across payment service providers is crucial. Any provider seeking to provide accounts to G2P recipients will need to be able to provide, and be accountable for, a level of service for the recipients. The government may have certain development objectives in mind and may stipulate financial inclusion-friendly requirements for the accounts, such as no minimum balance or maintenance fees. Other quality metrics for providers may include agent opening hours, cash-out success rates, recipient satisfaction targets, availability of female agents, and geographical coverage commitments. The exact metrics will depend on the context and the government's priorities. Standards should be applied equally across all providers to ensure a level playing field.

## 5.2.2 Payment Service Provider Business Models

In some cases, providers view G2P payments as a social responsibility rather than as a business opportunity, which may result in poor service if G2P recipients are not prioritized, as well as overlooked opportunities to transition recipients to additional financial services. In a modern G2P architecture, connecting G2P recipients from multiple programs to a single architecture means that they can be competed for by providers in aggregate. Combined in such numbers, providers may be enticed into competing for this large market segment. This, in turn, introduces competition among providers, which is a healthy impulse for interested providers to seek to attract recipients with an appealing mix of products, fees, and services. Competition also incentivizes providers to maintain standards, as other providers may seek to peel away recipients if the opportunity presents itself.



*Market-based fees and commissions to PSPs; competition driving prices down and better service.*

### BOX 8. Choice of PSP in Kenya Reduces Account Opening Time

In 2018, Kenya's Hunger Safety Net Program allowed recipients to choose between four banks to receive their transfers. In tandem, the program created a three-tiered commission structure for banks based on the different zones' population density, economic activity and distance to branch. This tiered approach was implemented to

incentivize banks to serve remote locations and fees are only paid out until beneficiaries withdraw money (McKay et al. 2020). Banks started to approach customers even before the new program began to pitch their service, reducing the time to open customer accounts from six months to two (Baur-Yagzbeck, Chen, and Roest 2019).



In a modern G2P architecture, the bank and nonbank payment service providers business model is characterized by:

- ▶ A level playing field among providers.
- ▶ A fee or incentives structure that allows PSPs to at least cover their costs
- ▶ A compensation structure that is guaranteed for a sufficient period to allow providers to make the requisite investments into servicing G2P recipients.
- ▶ A compensation that is calculated in an understandable, consistent, and equitable manner across providers.
- ▶ A fee structure (or lack thereof) that is affordable and justifiable when benchmarked against the cost of manual distribution and other similar distribution costs such as electronic airtime distribution or some similar comparator.

There are different business models ranging from procuring a specific set of PSPs with specific fee structures to an open-choice model where payment service providers are not contracted and no fees are paid by program administrators. Compensation structures for payment service providers also vary widely, from paying them a fixed or varying fee for every payment made or every successful cash withdrawal to allowing them to earn on the float.<sup>21</sup> Each approach will have advantages and disadvantages. For instance, by paying for successful withdrawals, the provider is incentivized to ensure the recipient does so, thereby forgoing the potential benefits from keeping and using some of the funds in the account.

The business model should align closely with the agency or program's objectives by incentivizing desirable behaviors among providers and recipients. These could include providers striving for good service and a motivation to retain recipients in the face of competition. For recipients, this would imply increasing opportunities and reducing costs for account usage beyond cash-out.

### 5.2.3 Distribution Networks

Distribution networks, also referred to as cash-in cash-out (CICO) networks, are the financial access points where recipients can withdraw, in cash, the funds that are deposited in their accounts if they so desire. Distribution points can include agents, ATMs, and bank branches. These access points could belong to the PSP or be third-party partners. As long as the digital financial services ecosystem is still developing and recipients' financial lives are not yet completely digital (in other words, they still transact with cash), recipients of G2P payments will need to withdraw some (or all) of their cash. Therefore, distribution networks significantly affect the recipient experience, as they largely determine the time and costs required to access funds. From a gender lens, ensuring convenient and accessible CICO points can help overcome mobility constraints as well as time scarcity among women, who disproportionately bear the responsibility of child and elderly care.

Ensuring **physical proximity** of points of service to where recipients live and work is critical to minimizing time and travel costs while maximizing convenience. A specific proximity target should be established in each country considering distance traveled and cost of travel.<sup>22</sup> In certain cases, and in



*Recipients have an agent, bank branch, or ATM sufficiently close to make cashing out convenient. Cash-out fees don't pose a burden to recipients.*



particular for recipients residing in remote areas, it may not be possible to achieve target proximity by leveraging only account issuers' existing distribution networks. To ensure full coverage, program administrators may seek to include business incentives, such as paying cash-out fees to the operators of distribution networks to incentivize greater investment in new access points that are nearer to recipients. If available, program designers can also consider engaging agent network managers who establish and manage networks of agents that can conduct transactions for one or more account issuers. Another option is to look beyond financial sector distribution networks to include alternative players such as the postal service, courier companies, and retailers and e-commerce providers.

Ensuring **accessibility** of the distribution network is also important. Because recipients' work or childcare responsibilities may make it difficult to travel to distribution points during normal business hours, programs should prioritize distribution networks that are open from early in the morning until late in the evening. For example, ATMs can operate 24/7, while agents and alternative players such as retailers typically open earlier and close later than traditional banks or microfinance institution (MFI) branches.

Recipient **appropriateness** is also an important consideration when selecting the distribution networks that will be used for payment delivery. For example, ATMs may present challenges for recipients who are illiterate or need assistance to navigate menus. Recipients may also be uncomfortable transacting in bank branches, which they may consider to be spaces reserved for wealthier customers. Agents, on the other hand, are often a good choice for low-income, vulnerable recipients who require support in conducting transactions. Because agents are typically from the communities they serve, they also offer a level of familiarity that can help build comfort and trust with recipients. In particular, ensuring the agent networks used have female agents can contribute to women feeling more comfortable transacting with their accounts.<sup>23</sup>

Finally, in a recipient-centric payment system, it is important that distribution networks also have the **technical and regulatory capability** to perform transactions required for the country's programs and agencies making G2P payments. For example, if there are programs that rely on service points to conduct account opening and biometric authentication, they need to have the technology and regulatory permission to do so. While bank branches can typically perform a range of necessary transactions, in certain contexts, regulations may prevent agents from opening accounts. In other contexts, hardware like fingerprint readers may be unavailable at agent locations or ATMs.

Thus, the regulatory framework in any given country plays a critical role in determining how widespread a country's financial access network can grow, as regulators set rules regarding, for example, what type of institutions can use agents and for what purposes (for example, some agents can service transactions but are not allowed to onboard clients), interoperability requirements, financial inclusion goals, and so on.

In a modern G2P architecture, a wide and sustainable distribution network is supported by enabling regulations. These regulations and policies can include:

- ▶ Allowing both bank and nonbank payment service providers to use agents.



*Payment systems and financial sector policies and regulations are conducive to sustainable and competitive distribution networks.*

- ▶ Allowing for the existence of agent aggregators<sup>24</sup> that can reduce onboarding costs for individual PSPs and increase the availability of individual (not chain) agents in the market.
- ▶ Allowing for simplified agent onboarding requirements.
- ▶ Allowing a wide range of businesses to act as agents, including small and informal shops.
- ▶ Allowing agents to provide services beyond cash-out where appropriate.
- ▶ Supporting distribution network interoperability (meaning ATMs and agents can serve customers of multiple account issuers, effectively expanding reach). This can be pursued by, for example, establishing nonexclusivity of agents. In the case of ATMs, a switch can connect ATMs and allow for customers of one financial institution to withdraw at a competitor's ATM for a fee.

Finally, ensuring **liquidity** of distribution networks is key. Without the necessary level of cash liquidity, the recipient will be unable to withdraw their benefits. Particularly in rural areas, this can be a major problem for distribution networks. G2P payments, similar to other bulk payments, can exacerbate these everyday liquidity challenges, as a large number of recipients are likely to demand their cash immediately after the payment is received, placing a significant liquidity burden on agents in the surrounding areas. This can significantly raise costs for recipients: if a recipient pays travel fees and takes the time to travel to an agent and finds that the agent does not have sufficient funds to complete the transaction, then the recipient may have to travel two or three additional times. This can double or triple costs incurred. It can also lead to workarounds that increase the cost and risk to the recipient, including leaving their ID, personal identification number (PIN), or program-issued card with the agent to withdraw money once liquidity is restored.<sup>25</sup>

## 5.2.4 Payment Acceptance Networks

One of the benefits of receiving social assistance payments digitally is the possibility to transfer money and make purchases electronically using a payment card, a mobile wallet, or online/mobile banking. However, access to an account to store money or send and receive payments is just a gateway to potential benefits for recipients. There is the key issue of whether a transaction account actually provides benefits to its users, which is very often reflected in how frequently that account is used, including to access other financial services. A wide acceptance of noncash payments is a precondition to uptake and effective usage of transaction accounts to (1) perform most, if not all, payment needs, (2) safely store some value, and (3) serve as a gateway to other financial services.<sup>26</sup>



*Recipients can use their account to make electronic payments in a wide network of merchants and service providers.*

Acceptance of electronic payments across merchants is key to enabling recipients to transact electronically and create more convenience and benefits (including safety) for them. To expand electronic payments acceptance in a country, there are several incentives, policy measures, and private sector actions that can be employed.<sup>27</sup> Authorities can consider implementing fiscal and financial incentives to merchants and consumers, as well as regulatory measures to disincentivize cash or mandate the use of electronic payments for certain payments. Investing in the development of the ecosystem by promoting interoperability and standardization, strengthening consumer protection, and strengthening the telecommunications infrastructure are also key enablers to increased electronic

payment acceptance. Finally, the private sector can also play a role in incentivizing merchant uptake by providing value-added services such as credit supported by electronic payment flow data, as well as introducing technology innovations and new business models such as quick response (QR) codes that can lower the cost of accepting electronic payments.

## 5.2.5 Accounts and Payment Instruments

In an ideal scenario, the G2P payments system should be open choice. This means recipients should be given a choice in selecting the payment service provider where they would like their government payment sent and have the option to switch providers when and if they decide to do so. Recipients should also be able to choose the type of account (for example, mobile accounts, traditional transaction account, basic account, and so on) offered by these PSPs or use one they already have. The authorities and program administrator should ensure accounts with the desired characteristics listed below are available in the market and should foster a competitive market that leads to lower costs and better services for recipients.



*Recipients receive their payment in a transaction account, which allows them to make payments and safely store money.*

In the transition to this ideal scenario, however, program administrators might sometimes need to select a set of payment service providers to disburse these payments and the characteristics of the accounts that will be offered.

To achieve the financial inclusion benefits of digital G2P payments, the characteristics of recipients' accounts are very important. Recipients should be paid using a transaction account that enables them to cash out, safely store money, make payments, and access other financial services. If the characteristics of the account make it hard to open, expensive to transact, or impossible to use beyond cashing out, then it will be unlikely to lead to financial inclusion.

The **account opening process should be simple** and should not require documents recipients are unlikely to have.<sup>28</sup> This is especially important for women who on average are less likely to have identification documents. In several contexts, simplified or tiered KYC regulations—where requirements are simplified in proportion to the account characteristic risks and operational limits—can be an adequate solution. Furthermore, remote customer due diligence (CDD) can be considered to enable account opening at agents or through mobile phones to simplify the process. Information collected during enrollment to social assistance or social insurance programs, or that is part of the employee database, could also be leveraged to streamline recipient onboarding if shared with PSPs with the recipient's consent. Authorities can also consider automatically opening accounts for recipients through contracted PSPs by leveraging the data collected through registration process in the case of social protection payments.

The account where recipients receive their G2P payment should be a **transaction account**. This would mean the account is “fully functional,” that is, allowing recipients to transact and safely store money in the account instead of only being able to receive G2P payments and cash-out.<sup>29</sup> Sometimes G2P payments are not paid into transaction accounts, and instead “limited-purpose” accounts are used

that limit the way in which recipients can use them. The following are some types of “limited-purpose” accounts that should be **avoided**:

- ▶ Accounts that are part of a closed-loop system, where recipients can only use their account at certain distribution points, curtail the usability of the account, and limit the access points recipients can cash out from and transact in.
- ▶ Accounts that do not enable recipients to store their payments partially or fully to use or withdraw in the future. In the particular case of social assistance programs, this includes those accounts with clawback clauses, where resources not withdrawn within a certain period of time are reversed to the program administrators. Account closure due to inactivity is another important topic, as recipients in remote regions frequently accumulate payments over three or more months before traveling to a distribution point. Once the payment is deposited into a recipient’s account, the recipient should be able to leave a balance in the account to transact electronically or save if they so desire.

As much as possible, the option to receive payments through a transaction account should be given to recipients. This could be a bank account, mobile money account, or an account at another nonbank PSP such as cooperatives. In every case, the government agency or program in charge of the G2P payment should ensure recipients receive the necessary information and financial capability training to open and safely use their accounts.

If mobile payments are used, then recipients’ digital literacy and (type of) mobile phone ownership should also be considered. If mobile payments are used as the sole option, an unstructured supplementary service data (USSD) option should be provided to reach recipients with feature phones. When selecting the type of account, gender gaps in account, mobile phone, and identification ownership should be considered to avoid exclusion.

The fees associated with account opening and usage, if any, should be reasonable to recipients (aligned with value provided) and sustainable to payment service providers. To shield recipients from some of the costs (transaction fees, travel, opportunity costs) involved with accessing their benefits from certain providers, government/programs can top up their benefits with the required amount.

### **BOX 9. Zambia’s Choice Model at Market Prices**

In Zambia, the Girls Education and Women’s Empowerment and Livelihoods (GEWEL) project gave beneficiaries of cash transfers the option to choose among six different payment service providers. The government didn’t procure each of these providers, but instead PSPs just had to comply with basic requirements and sign a memorandum of understanding. The program didn’t pay a fee directly to PSPs and instead they provided a top-up to beneficiaries to cover cash-out fees based

on market prices. Three years after introducing choice, the new payment approach had created convenience for beneficiaries, cost-savings to the government and had contributing to increasing market competition. Specifically, recipients reduced time spent accessing their payment from six hours to two hours and the program reduced the cost of payment delivery from 4 to 2.8 percent of the payment value, among other positive outcomes (Baur-Yagbeck and Hobson 2021).

**Payment instruments** linked to these accounts should also be available for recipients to access their payments. These could include debit/prepaid cards, feature phones using USSD, smartphones relying on data, or biometrics such as fingerprints or facial recognition. The characteristics of the payment instruments made available to recipients have implications for the recipient experience, as well as for the reliability, security, and cost of payments. These payment instruments should aim to be:

- ▶ **Intuitive:** They need to be straightforward to use and easy to learn.
- ▶ **Safe and secure:** Recipients are often the most vulnerable with the least ability to weather fraud, and, through a lack of numeracy and literacy, the most susceptible to fraud.
- ▶ **Low cost:** Inexpensive for recipients to use and providers to deploy.
- ▶ **Interoperable:** They must be designed to be accepted at a variety of access points and from a variety of providers.

## 5.3 INCLUSION AND EMPOWERMENT

### 5.3.1 Communication and Literacy

Communication and awareness campaigns help achieve the immediate objectives of a program, as well as supporting longer-term gains such as financial inclusion and women’s economic empowerment. Delivering G2P payments into an account is not sufficient to support these long-term outcomes—the design has to be intentional with communication and beneficiary digital and financial literacy being prioritized.

Financial capability is “the capacity to act in one’s best financial interest, given socioeconomic environmental conditions [encompassing] the knowledge (literacy), attitudes, skills, and behaviors of consumer regarding managing their resources and understanding, selecting, and making use of financial services that fit their needs.”<sup>30</sup> As previously unbanked adults are brought into the formal financial system for the first time through G2P payments, adequate financial capability is needed for the recipients to be able to access and use their account effectively.



*Recipients are well-informed; they understand how their payment method works, any associated costs, how to use their payment instrument, and how to access their payment.*

#### BOX 10. Indonesia’s PKH: Link between Awareness and Usage

Lack of awareness is one of the main reasons that recipients do not use financial accounts, but rather withdraw their payment in full as soon as possible. For example, in Indonesia’s flagship social assistance program called Program Keluarga Harapan (PKH), 85.4 percent of recipients surveyed said that it is not possible to use their account for anything other than a cash withdrawal—despite the fact that the program shifted

to digital, account-based payments in large part because the government wanted to offer recipients the options to do more with their payments under the national financial inclusion strategy. The same study found that many recipients were fearful of the ATM, and nearly one-half (44 percent) rely on an ATM security guard, agents, or family members to help withdraw money from their account (Theis, Rusconi, Panggabean, and Kelly 2020).

Financial education and training should be embedded directly into the existing delivery model of government programs and agencies making G2P payments, considering the following:

1. The training should be delivered during “teachable moments”—when recipients are about to make an important financial decision or use a financial service. In the case of G2P payments, these include when registering for a social assistance program, when first receiving or opening their account, and when receiving their first payment, among others.
2. The training should be delivered by people who are most trusted by the participants, such as community leaders.
3. The content of the training must respond to the specific needs of the target population, prioritizing risk mitigation (including explaining the recourse mechanisms) and the information needed to adequately access and use their account.
4. A range of channels that leverage multiple delivery methods, such as face-to-face training and nontraditional channels such as through technology, mass media, or behavioral interventions, should be used.
5. Lecture-based curriculums that can become boring should be avoided—fun and practical content should be prioritized. For example, “doing by practice” approaches where recipients can practice how to transact with mobile money with pretend or tiny provided funds can build confidence and trust.
6. Messages should be reinforced.

### BOX 11. Incentivizing Savings Among Peru’s Juntos CCT Beneficiaries

The *Juntos* conditional cash transfer (CCT) program in Peru saw much success with its Saving Promotion Pilot (SPP) from 2010 to 2012, which sought to promote savings among participants who were considered the poorest of the poor. The SPP targeted *Juntos* recipients who already received payments to personal banks accounts and offered them financial education. SPP was

voluntary, with about 50 percent uptake—95 percent of whom were women.<sup>a</sup> The SPP sequenced financial education in four modules, starting with awareness and group building, and moving through to savings and entrepreneurship. An impact evaluation found positive change in terms of financial awareness and economic welfare (Boyd and Aldana 2018).

<sup>a</sup>At the beginning of the program, there was also a small incentive offered—a food bundle of about US\$60 for savers only—but this was later discontinued.



### 5.3.2 Recipient Protection and Grievance Redressal

Distributing digital G2P payments through accounts to recipients who did not previously have these products creates particular concerns around consumer protection, given their lack of familiarity and trust in these products. Without assurances, lower-income individuals may fear their transaction history could be used to disqualify them for future benefits, thus discouraging positive financial behavior such as saving in lieu of converting all funds immediately to cash to signal that the recipient is in continued need of benefits.

Recipients should have a recourse mechanism to appeal in the case of any errors or disputes. Redressal and complaint mechanisms must include an escalation process and a set of predefined resolution mechanisms. These mechanisms should be available to address both errors and disputes of the transaction account, as well as those directly related to the agency or program in charge of the G2P payment (for example, social assistance benefit eligibility). Given the multiple actors involved, this could be achieved through two different grievance redressal mechanisms, in which case communication of these recourses should be clear to recipients and information exchange across grievance redressal mechanisms should be considered.

Ultimately, grievance redressal mechanisms are necessary to ensure two-way communication; successful examples of communication within programs highlight those that consider both communication to recipients and communication with recipients—ensuring that they can report and receive feedback on issues related to fraud, inconsistencies, or unfair treatment.



*Recipients can easily access and know how to access effective grievance redressal mechanisms; recourse is clear, quick, and responsive.*

#### BOX 12. Philippines' 4Ps Chatbot

In the Philippines, the 4Ps program piloted the use of the 4PBot in 2018, a chatbot run on Facebook Messenger, to address key implementation challenges, including (1) the power dynamic between 4Ps constituents and government workers that led to unresolved issues, (2) unpredictable payment dates, and (3) confusion created by gossip and information asymmetries between villages. The 4PBot runs in multiple languages, including

Tagalog, Bisaya, and English, and offers the ability to have a conversation relevant to onboarding, reporting problems, calculating payments, and news. The piloted version works for only a small audience, since it requires access to a smartphone with a data plan, but there are plans to implement short message service (SMS) and interactive voice response (IVR) versions.

To ensure that the objectives of the program or agency are being achieved, and that recipients' well-being is prioritized, the following monitoring functions should be completed at the program or agency level, and supported by the existing G2P architecture.

- **Payment reconciliation information** is provided to the program administrators. In it, funds can be traced from origin to recipients, and the payments flow has been secured to ensure that targeted recipients are the ones receiving the funds.



- ▶ There is a **continuous monitoring** of the needs and characteristics of recipients, including their financial services' needs and usage of financial services provided through G2P payments. This includes proactively monitoring the recipient's experience through recipient-centric research, especially when transitioning to digital payments.
- ▶ The agency **monitors developments** in the financial services market and can ensure that main features of financial services provided to G2P recipients are not withdrawn by providers and have enough flexibility to migrate recipients to more convenient payment instruments and transaction accounts.

### BOX 13. Kenya's Multi-channel Grievance Redressal Mechanism

In Kenya's Hunger Safety Net Programme (HSNP), the case management system has evolved through a series of adjustments to better meet the needs of recipients, local government administrators, and program staff. The system is decentralized and synchronizes daily with the program management information system (MIS) platform to register and resolve program complaints

and updates. Cases can be registered through multiple channels using paper forms, a toll-free phone line, or a combination of mobile phones (via SMS) and a public web interface. Cases can be registered through chiefs, assistant chiefs, HSNP program managers and officers, county drought coordinators, or beneficiary welfare committees (Gardner et al. 2017).

### 5.3.3 Data Protection and Cybersecurity

As recipient information is stored and shared across different databases, systems, and devices—both within and across organizations to deliver G2P payments—ensuring measures for data protection and cybersecurity is critical. While shared infrastructure and interoperability across systems offers great opportunities for strengthening transparency, efficiency and effective delivery of G2P payments, it also comes with risks that should be mitigated.<sup>31</sup>

Recipient information often includes personal data.<sup>32</sup> This information is important to facilitating access and confirming eligibility to social protection programs or any other G2P payment. Once a recipient has been enrolled to a particular program, different pieces of recipient information is required to deliver payments to them. Collection of such information from recipients in the first place, followed by using and managing such data can create a range of risks that are not limited to:<sup>33</sup>

- ▶ **Security breaches:** Physical or cyberattacks on data in transit or at rest.
- ▶ **Unauthorized disclosure:** Inappropriate transfer of data between government agencies, private companies, or other third parties.
- ▶ **Exposure of sensitive personal information:** Disclosing sensitive and potentially sensitive personal information (for example, ethnicity, disability status, income, employment status, among others) for unauthorized purposes.



*Recipients' data is safeguarded and systems mitigate cybersecurity risks.*



- ▶ **Function creep:** The use (and even sharing) of data for purposes beyond those for which consent was given.
- ▶ **Identity theft:** Identity theft in the digital world can lead to consequences that are at least as serious as those in the “real”, physical world, and, given the global, decentralized nature of the internet, damages that are often more difficult to repair. In a digitized world, impersonation can be undertaken by just about anyone.<sup>34</sup>
- ▶ **Surveillance risks:** The ability to correlate identifying information across databases increases surveillance risks.
- ▶ **Discrimination:** Personal data might be used to discriminate against particular people or groups.
- ▶ **Unjust treatment:** Incomplete or inaccurate data can lead to mistakes or unjust treatment.

To mitigate these risks and ensure the sharing and using of recipient data is done safely, it is important to have the right combination of:<sup>35</sup>

- ▶ The inclusion of privacy by design principles, techniques and technology in the underlying systems that facilitate the delivery of G2P payments. These include, for example, ensuring recipient consent, authentication, encryption, tamper-proof audit logs, and authorization.<sup>36</sup>
- ▶ A robust legal and regulatory framework on data privacy and protection.
- ▶ Management controls for monitoring and oversight.
- ▶ Operational controls that promote security awareness, training, and detection.
- ▶ Technology controls that limit and protect the processing of personal data and ensures the physical and virtual security of G2P systems that process personal data.

#### BOX 14. What Is Data Privacy versus Data Protection?

**Data privacy** is appropriate use and governance of personal data—things like putting policies and processes in place to ensure that consumers’ personal information is being collected, shared, and used in appropriate ways. Data privacy is the right to have control over how your personal information is collected and used, and a system’s design should ensure to build privacy into the design of the system.

**Data protection** also known as information security, focuses on protecting data from malicious attacks and the exploitation of stolen data for profit. While security is necessary for protecting data, it’s not sufficient for addressing privacy. Data protection is an essential aspect of information technology (IT) for organizations of every size and type. Various technologies applied to ensure data security include encryption, digital signing, backups, data-masking, and data erasure. Data security also protects data from corruption.



### 5.3.4 Gender Lens

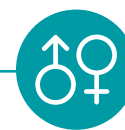
G2P payments hold immense promise for women's economic empowerment. Digital payments can help facilitate access to formal financial services, such as transactions, payments, savings, credit, and insurance. For women in particular, G2P payments can provide a reliable source of income and a private and safe place to store their finances, as well as a way to cope with shocks and smooth consumption. When women have their own G2P accounts, they can also protect these funds from appropriation from others in the household. Increased control over income can also enable more bargaining power in the household. Importantly, when women are financially included, they can also make a wider range of decisions related to employment, marriage, and contraception.<sup>37</sup>

Yet many of the factors associated with digital G2P payments disproportionately exclude women, including mobile phone ownership, connectivity, and foundational ID systems. Furthermore, skills gaps also play a role, particularly in relation to literacy and digital financial capabilities. There are also supply-side issues, such as the lack of relevant financial and digital products that suit women's needs. Restrictive gender and social norms also limit women's time and mobility and ultimately constrain women's economic empowerment.

As with financial inclusion, the pathway to economic empowerment is not automatic. In fact, digital G2P payments risk exacerbating existing inequalities, especially during rapid response efforts such as the efforts to address the impact of COVID-19.<sup>38</sup>

Gender-smart program design is a cross-cutting feature that considers disparities between women and men and works to narrow these gaps in ways that meaningfully advance women's economic empowerment within the G2P architecture. These approaches include:

- ▶ **Eliminating gender legal barriers:** Legislators can eliminate gender legal barriers such as mobility, employment, marriage, and asset ownership, among other areas. Removing these barriers is also associated with a range of benefits; for example, reforming laws that restrict women's movement, ability to sign contracts, or work outside the home are correlated with higher levels of female labor supply.<sup>39</sup> And when women have the right to control assets, such as land, their bargaining power in the household increases.<sup>40</sup>
- ▶ **Providing equal access to identification:** Government agencies, such as ID authorities, civil registrars, and ministries of information and communication technology (ICT), interior, or justice can ensure equal access to identification through eliminating laws or regulations that require married women to be accompanied by male guardians or provide a marriage certificate when applying for a passport. Addressing nonlegal barriers should also be considered, including the cost of transportation, lost income due to long waiting times, and social norms that restrict access (like having to seek permission to travel or restrictions because of care responsibilities).<sup>41</sup>



*Gender gaps and restrictive social norms must be considered in the design to ensure digital payments are empowering instead of exacerbating exclusion.*

- ▶ **Closing gender gaps in ICT access and usage:** Barriers to ICT access and use for women include a lack of physical infrastructure, affordability, lack of digital literacy and skills, and threats to safety and social norms, among others. Even when physical infrastructure is present, social and gender norms may limit access and use. As a result, women may rely on sharing and borrowing devices more than men, thereby limiting privacy or financial autonomy.<sup>42</sup> When designing a modern G2P architecture, identifying and addressing these additional challenges are important for the creation of a truly inclusive system.
- ▶ **Increasing the share of women agents and establishing codes of conduct:** Increasing the share of women agents is one potential approach that could help increase women's access to financial services. Gender norms might prohibit women from interacting with a male agent or there might be a higher risk of sexual harassment.<sup>43</sup> In seven African countries, women agents were significantly more successful than male agents, with both a higher volume and value of transactions.<sup>44</sup> Agent codes of conduct with explicit principles and enforcement mechanisms related to nondiscrimination and gender-based violence can also help to increase women's safety and security.
- ▶ **Designing women-friendly training programs:** When designing financial and digital capability training programs, program designers can use thoughtful design approaches and tweaks to better meet the needs of women. Some simple considerations include actively recruiting women through women's groups or other relevant community organizations, organizing single-sex sessions when culturally appropriate, hosting programs at times that keep in mind women's schedules, and covering the cost of transportation or locating training sessions close to their homes.<sup>45</sup>
- ▶ **Integrating a gender lens in consumer protection frameworks:** A gender lens can be applied to consumer protection frameworks and grievance redress mechanisms. These could include transparency measures that ensure clear and simple information about terms and services are shared by PSPs in addition to awareness campaigns through women's networks, integrating multiple trusted and reliable reporting channels, implementing and enforcing nondiscrimination policies, and codifying agent codes of conduct that include redress for sexual harassment or sexual exploitation and abuse.<sup>46</sup>
- ▶ **Directing payments to women:** Directing payments to women in their own account (in their own name) can enhance women's economic empowerment by providing a safe and private place to store money, as well as control and financial autonomy, and reducing the risk of appropriation by other family members. A bank or mobile money account can also provide an entry point to women's financial inclusion. The use of transaction accounts in the delivery of G2P payments, which not only allow recipients to cash out but also enable them to make digital payments and safely store money, should be prioritized to maximize the potential benefits.<sup>47</sup>
- ▶ **Integrating accompanying measures:** Incorporating accompanying measures such as economic inclusion interventions can typically include a cash transfer, along with training and coaching to build capacity, social capital, life skills, and confidence.<sup>48</sup> Research on economic inclusion demonstrates that these programs increase women's asset ownership, increase their contributions to household incomes, and improve their social status both inside and outside the household. They also start shifting gender norms through increasing women's mobility.<sup>49</sup>

- ▶ **Addressing social norms and gender-based violence:** Despite the potential of digital financial services to enhance women’s economic empowerment, social norms often act as a binding constraint.<sup>50</sup> Designing activities that engage men and boys to enable behavior change and build buy-in are critical when working to increase women’s empowerment. Programs can consider interventions that challenge accepted gender roles, redistribute care and income-generating activities, promote shared financial decision-making, and address gender-based violence.<sup>51</sup>

## BOX 15. Spotlight on Sex-Disaggregated Data and Measurement

Social protection agencies can also expand and adapt social registries and management information systems to collect sex-disaggregated data. Better gender data can also help improve future targeting.<sup>52</sup> Within the financial services sector, supply-side sex-disaggregated data on account and use can be used to establish baselines, set national targets, and facilitate the design and development of tailored financial products that help increase women’s financial inclusion. At the program level, sex-disaggregated data can help track performance

and flag unintended consequences. Tools like journey mapping can provide information on unforeseen barriers and pain points and facilitate course corrections. Gathering data on women’s financial autonomy, asset ownership, and household decision-making, among other areas, can help shed light on women’s economic empowerment. Without collecting and analyzing sex-disaggregated data, programs and agencies making G2P payments, especially social protection programs, cannot effectively include and empower women.





# 6

## Looking Forward

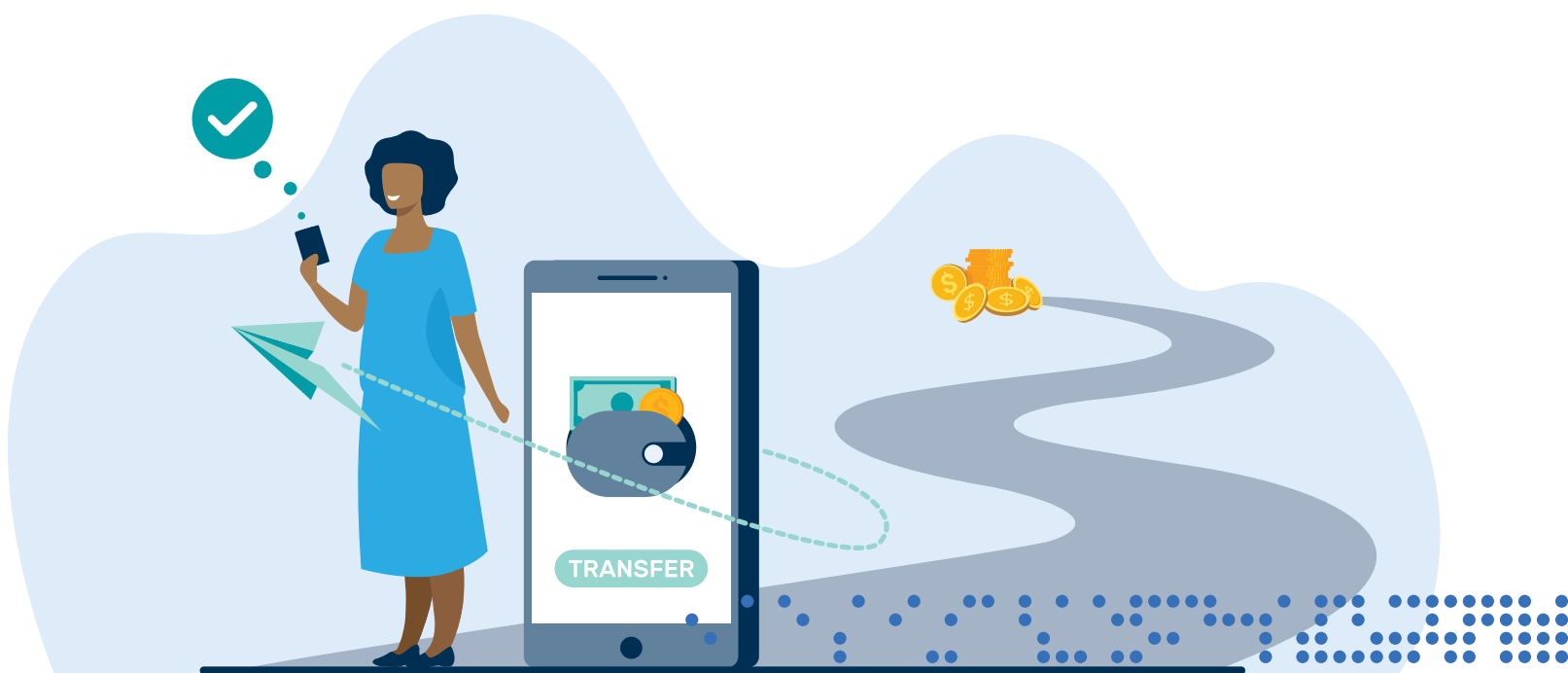
Digitizing government-to-person payments (G2P)—including social assistance payments, pensions, subsidies, and public wages—can help accelerate financial inclusion, increase recipient convenience, contribute to the development of the financial market, and create fiscal savings. Modernizing G2P payments can bring positive outcomes for recipients, government, and private sector alike, yet there is no single path countries should follow in this digitization journey.

This note provided a framework for the characteristics a modern G2P architecture should strive to achieve and, as such, highlights the design principles every country should keep in mind when designing their own G2P architecture. The actual infrastructure and policies implemented can vary across countries, and achieving these design principles is possible with different approaches. The journey to modernizing a country's G2P architecture will take time and will not necessarily be linear. However, assessing the current state of the various building blocks, having clarity on what the ideal scenario looks like for a country, and developing a roadmap to prioritize the actions to get there will be critical. The move toward digital payments will not happen overnight and sequential moves in the direction of a modern G2P architecture should be the goal, especially in countries that require substantial reforms and investments in digital public infrastructure to achieve their vision.

The modernization of G2P payments will require strong coordination—a cross-sectoral, whole-of-government approach. Coordination across government agencies that make G2P payments and those that manage or oversee the relevant digital public infrastructures, as well as between the private and public sector, will be essential to modernize a country's G2P architecture.

Once a country starts their journey toward a modern G2P architecture, there can be opportunities to leverage some of the architecture building blocks across other payment flows and actors. In particular,

contributory social insurance programs where person-to-government (P2G) payments are made. P2G payments can be integrated in the same access channels used by recipients of digitized G2P payments. This can generate gains in terms of convenience for individuals, as well as lowering the costs for the government and increasing revenues for payment services providers. However, to integrate both streams at the points of access will require strong coordination across authorities and proper attention to financial literacy needs and the capabilities of providers. Furthermore, implementing a digital G2P architecture that leverages digital public infrastructure in the country can be used across actors including nongovernmental organizations (NGOs) and development partners. This additional volume of payments could contribute to the development of the digital payments' ecosystem by, for example, incentivizing the expansion of financial access points and the offer of innovative financial products and services, ultimately contributing to increasing recipients' convenience, inclusion, and empowerment.



# Glossary

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**Access point:** Point that is necessary to initiate a payment. Access points can include branch offices, ATMs, terminals at the POS, or a personal device of the user (for access via the Internet or other telecommunication networks) (Bank for International Settlements and World Bank Group 2016, 65).

**Account mapper:** Also referred to as account directory, a database that matches a recipient's unique identifier and account number.

**Agent banking:** Business arrangements of banks and nonbank payment service providers using local entities (in other words, "agents") such as small shops to provide basic payment and transaction account-related services on their behalf. This arrangement is also referred to as banking through business correspondents (Bank for International Settlements and World Bank Group 2016, 65).

**Application programming interface (API):** Allows software programs to interact by exchanging data, which can prompt certain actions such as making a transaction. There are four main categories of APIs: payment APIs, which help third parties make and receive payments; data APIs, which share individual (with proper customer consent) and aggregate data with third parties, enabling them, for example, to better understand the risk profiles of individuals; "ecosystem expansion" APIs, which enable loan origination or account creation; and "consent and identity" APIs that facilitate KYC, enable sharing of data and movement of money by third parties (World Bank 2020c, 34).

**Automated clearing houses (ACH):** An electronic clearing system in which payment orders are

exchanged among financial institutions, primarily via magnetic media or telecommunications networks, and then cleared among the participants. All operations are handled by a data processing center. An ACH typically clears credit transfers and debit transfers, and, in some cases, also checks (World Bank 2020c, 34).

**Basic account:** A bank account that is typically focused on payment services and characterized by low-cost and no-frill features. These accounts are often offered in combination with a debit card (Bank for International Settlements and World Bank Group 2016, 65).

**Cash-in cash-out (CICO) networks (access points/distribution networks):** Defined as the place where customers can convert their e-money into cash or vice versa to facilitate their use of digital financial services (DFS). Various CICO network types exist: bank branches; ATMs; and banking, mobile money, and other types of agents (Hernandez, 2019).

**Clawback clause:** In the context of G2P payments, these are clauses or policies in social assistance programs whereby payments already paid into an account are reverted or "clawed back" by the program under certain conditions, such as if the recipient does not withdraw the funds within a certain time frame.

**Digital public infrastructure (DPI):** Front- and back-end systems, such as identification, payments, and data exchange, provided by the government or in partnership with the private sector, that serve as "rails" that underpin digital transactions and connections for people, businesses, and governments, including service



delivery and operations across the public and private sectors (World Bank, 2022a).

**Digital stack:** The layering of digital public infrastructure, such as identification, payments, and data exchange, so they can work together and interoperate seamlessly for various use cases.

**E-money account:** Prepaid instrument based on e-money that can be offered by banks and other authorized deposit-taking financial institutions, as well as by non-deposit-taking payment service providers such as mobile network operators. Such accounts include prepaid accounts (PAFI, 2016).

**Fast payment systems (FPS):** An infrastructure focused on clearing or settlement of fast payments for its participants, where “fast payment” is defined 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 to a 24-hour and seven-day (24/7) basis as possible (World Bank 2020c, 35).

**Financial management information system (FMIS):** Supports the automation and integration of public financial management processes including budget formulation, execution (for example, commitment control, cash/debt management, treasury operations), accounting, and reporting (World Bank 2022c).

**Float:** The amount of funds withdrawn from the account of the payer but not reflected immediately in the account of the payee. In the e-money context, float is typically referred to as the total value of outstanding customer funds (World Bank 2020c, 35).

**Fully functional accounts:** See transaction account.

**G2P architecture:** Encompasses all systems, infrastructure, regulations, policies, and design

choices that enable and characterize the end-to-end delivery of G2P payments.

**G2P payment:** Payments made by the government to individuals. These can include social assistance payments, subsidies, scholarships, pensions, public wages, among others.

**Integrated financial management information system (IFMIS):** Whenever FMIS and other PFM information systems (for example, e-procurement, payroll, debt management) are linked with a central data warehouse (DW) to record and report all daily financial transactions, offering reliable consolidated platforms can be referred to as integrated FMIS (or IFMIS) (World Bank 2022c).

**Interoperability:** A situation in which payment instruments belonging to a given scheme may be used in platforms developed by other schemes, including in different countries. Interoperability requires technical compatibility between systems but can only take effect where commercial agreements have been concluded between the schemes concerned (World Bank 2020c, 35).

**Know your customer (KYC):** Regulation that requires all financial institutions to ensure that they validate the identity of all of their clients (World Bank 2020c).

**Limited-purpose account:** An account that can only be used for a specific purpose. It has restricted access to account or the use of its funds, with limitations on how long funds can be stored in the account. The beneficiary cannot deposit money into the account and may not be able to make purchases using an associated payment instrument.

**Mobile money:** E-money product where the record of funds is stored on the mobile phone or a central computer system, and which can be drawn down through specific payment instructions to be issued from the bearer’s

mobile phone. Also known as m-money (World Bank 2020c).

**Mobile money account/wallet:** An e-money account primarily accessed using a mobile phone (GSMA 2015a, 73).

**Mobile money provider:** Organization that offers mobile money services that enable users to add funds, transfer money, and conduct a digital transaction using an account on the mobile phone.

**Money transfer operator (MTO):** A non-deposit-taking payment service provider where the service involves payment per transfer (or possibly payment for a set or series of transfers) by the sender to the payment service provider (for example, by cash or bank transfer)—that is, as opposed to a situation where the payment service provider debits an account held by the sender at the payment service provider.

**National payment system (NPS):** National payment systems encompass all payment-related activities, processes, mechanisms, infrastructure, institutions, and users in a country or a broader region (for example, a common economic area). This could also be referred to in the report as “payments system” (PAFI, 2016)

**Payment service provider (PSP):** 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 (PAFI, 2016).

**Payment switch:** An electronic clearing system that interconnects multiple financial service providers, transaction channels, and payment systems to one another.

**Payment system operator (PSO):** An entity that operates a payment network or other payment infrastructures (PAFI, 2016).

**Point of sale (POS):** A retail location where payments are made for goods or services. A POS device denotes a specialized device that is used to accept the payment (for example, a card reader) (GSMA 2015a, 74).

**Prepaid card:** Payment card provided in exchange of prior deposit of funds specifically for use through this card product (World Bank 2020c).

**Real-time gross settlement systems (RTGS):** The real-time settlement of payments, transfer instructions, or other obligations individually on a transaction-by-transaction basis (World Bank 2020c).

**Seeding:** One-to-one mapping of identity records in an existing database with those in another database (for example, via a unique ID number) (ID4D Glossary).

**Social registries:** Information systems that support outreach, intake, registration, and determination of potential eligibility for one or more social programs (Leite et al., 2017).

**Transaction account:** An account held with a bank or other authorized or regulated service provider (including a nonbank) that can be used to make and receive payments. Transaction accounts can be further differentiated into deposit transaction accounts and e-money accounts.

**Treasury single account (TSA):** A treasury single account is either a single bank account or set of linked accounts through which the government transacts all its receipts and payments.

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# Endnotes

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- 1 According to Global Findex 2022, 28 percent of adults worldwide were receiving payments from the government. This percentage has likely increased with the scale-up of social assistance in response to the COVID-19 crisis.
- 2 This is a rough estimation based on administrative data from the WBG's Atlas of Social Protection Indicators of Resilience and Equity (ASPIRE), the WBG's 2019 Pension Expenditure Database, and the IMF's public wages data. The sample of 46 developing countries was based on those for which data was available. Years across data point vary from 2010 to 2020.
- 3 See Gentilini et al. (2022)
- 4 From 2014 to 2021, the proportion of G2P recipients receiving transfers into accounts increased from 56 to 64 percent in developing countries.
- 5 Staschen and Meagher (2018) provides good examples for Ghana and Uganda, while Cook and Raman (2019) provide a detailed account of competing interests and the regulatory response in India.
- 6 A modern G2P architecture should also strive to achieve, among others, the Principles for Digital Development (<https://digitalprinciples.org/>), the UN Principles for Responsible Digital Payments (<https://responsiblepayments.org/>), and the Principles on Identification for Sustainable Development (<https://id4d.worldbank.org/principles>).
- 7 However, there can be other factors that curtail the development of the necessary systems and infrastructure, such as conflict, war, or even vested interests that favor market incumbents in the case of interoperability.
- 8 For a full review of principles of identification systems, please see the "Principles on Identification for Sustainable Development Toward the Digital Age" (World Bank 2021a; ID4D 2021).
- 9 Errors could include, for example, 1) that the amount value received by the recipient is less than the amount expected because fees are incurred; or 2) that the transactions are rejected because of errors in the recipient information. These errors must be mitigated, for example, for the latter, account validation services could be used.
- 10 Including (1) allowance of credit to recipients' accounts directly, (2) credits to recipients' accounts in real time, (3) open access participation arrangements, with proportional access and operation rules, (4) allowance for interoperability of different payment instruments offered by different types of financial service providers, (5) operational continuity, cybersecurity arrangements, (6) scalability, and (7) an open architecture that allows to integrate new functionalities and participants, and to integrate its services and functionalities to different access channels. For more information on payments systems for G2P payments, see Cirasino et al. (2012).
- 11 A modern interbank payments infrastructure usually includes a real-time gross settlement systems (RTGS) and one or more automated clearinghouses (ACH) to process interbank payments. An RTGS system handles the settlement of fund transfers, usually large-volume payments but increasingly bulk payments as well, in real time (without netting). An ACH is an electronic clearing system in which payment orders (usually bulk) are exchanged among financial institutions and handled by a data processing center.
- 12 For more information on trusted data sharing see World Bank (2021b).
- 13 Cirasino, Bajjal, Garcia, and Kitchlu (2012).
- 14 Leite et al. (2017).
- 15 For more information on social registries and a thorough review of their characteristics and desired principles, see Lindert et al. (2020).
- 16 Directories that link IDs to payment information are still relatively new. Fortunately, this part of the infrastructure is among the easiest to develop. A directory is a basic database that links an individual's ID number to the account(s) into which the individual wants his or her payments to flow. This simple software is called a directory or mapper.
- 17 There is some nuance; on the one hand, a centralized repository may present an attractive target for hacking; on the other, it allows for security efforts to focus on a single entity.
- 18 For more information on the impact of connectivity infrastructure on G2P payment programs, refer to Zimmerman and Baur (2016).
- 19 For more information on the benefits of choice, refer to Baur-Yazbeck, Chen, and Roest (2019).
- 20 Staschen and Meagher (2018).
- 21 Allowing providers to earn on the float can be inefficient, as it encourages them to delay distribution or transfer into recipient accounts. In addition, FSP staff may discourage withdrawals by the recipients. In its favor, it is relatively simple for governments or programs to manage.
- 22 In many cases this target is set at 5 km, but it can vary based on a country's specific context.
- 23 Reitzug et al. (2020).

- 24 Agent managers or aggregators are individuals or companies that manage a network of agents—aggregating from a few to hundreds of independent merchants or individual agents.
- 25 McKee, Kaffenberger, and Zimmerman (2015).
- 26 World Bank (2020). “Gap Analysis of Electronic Payment Acceptance Incentives: Literature Review and Country Examples.”
- 27 For more information and guidance, refer to the FIGI Electronic Payments Acceptance Package available at <https://www.worldbank.org/en/topic/financialinclusion/brief/figi>.
- 28 However, AML/CFT requirements must be met, and these requirements should be proportional to the risks. For more information, see FATF Guidance (2013-2017).
- 29 Please refer to CPMI and World Bank (2016) on transaction accounts in the context of *Payment Aspects of Financial Inclusion*.
- 30 For more information on how to design and implement a financial education program for G2P recipients. see World Bank (2018c).
- 31 This section is adapted from World Bank (2018d).
- 32 Personal data are any information that relates to an identified or identifiable living individual. Different pieces of information, which collected together can lead to the identification of a particular person, also constitute personal data, for example, a name and surname; a home address; an e-mail address; an identification number; location data (for example the location data function on a mobile phone); and an Internet Protocol (IP) address. Personal data that has been de-identified, encrypted, or pseudonymized but can be used to re-identify a person remains personal data. Personal data that has been rendered anonymous in such a way that the individual is not or no longer identifiable is no longer considered personal data. Further information is available at *Financial Management Information Systems*, World Bank, Washington DC. (<https://www.worldbank.org/en/topic/governance/brief/financial-management-information-systems-fmis>).
- 33 Clark and Daly (2019).
- 34 World Bank and United Nations (2017) and Gercke, Marco (2007).
- 35 Clark and Daly (2019).
- 36 For a more detailed discussion of this topic see Mittal and Malhotra (2018).
- 37 Theis et al. (2020); for a brief review of the evidence, see Bull (2021).
- 38 For guidance to policymakers on empowering women through the rapid scale of digital cash transfers in the wake of COVID-19, refer to Zimmerman et al. (2020).
- 39 Amin and Islam (2015); Htun et al. (2019); Field et al (2021).
- 40 Agarwal (2003); Daley et al. (2010).
- 41 Hanmer et al. (2021).
- 42 World Bank (2018b).
- 43 Ryan (2019).
- 44 IFC (2018), the seven countries are Senegal, Nigeria, Cameroon, the Democratic Republic of Congo, Rwanda, Tanzania, Madagascar; see also Bin-Humam et al. (2018).
- 45 World Bank Group (2018c); Hammond et al. (2018).
- 46 Adapted from: Izaguirre (2020); Kospers (2018); Botea et al. (2021).
- 47 Zimmerman et al. (2020).
- 48 See the section “Spotlight 2: Promoting Women’s Empowerment through Economic Inclusion” in Andrews et al. (2021).
- 49 Ibid.
- 50 JPAL (2021).
- 51 Ibid.
- 52 Valenzuela (2020).





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