Digitalising person-to-government payments

Leveraging mobile to improve government revenue and access to public services

October 2020

About the GSMA
The GSMA represents the interests of mobile operators worldwide, uniting more than 750 operators and nearly 400 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and internet companies, as well as organisations in adjacent industry sectors. The GSMA also produces the industry-leading MWC events held annually in Barcelona, Los Angeles and Shanghai, as well as the Mobile 360 Series of regional conferences.

For more information, please visit the GSMA corporate website at **gsma.com**

Follow the GSMA on Twitter:
@GSMA and **@GSMAPolicy**

Report published in **October 2020**

Authors:
Nicolas Fichers, Senior Economic Research Manager
Lamia Naji, Senior Insights Manager

Contents

1. Executive summary

Mobile technology plays a key role in the digital transformation of governments, enabling efficient delivery of government services and improved access for citizens and businesses. Digitalisation makes government services and payments more convenient and efficient for users in both urban and rural areas, and this leads to greater reach and compliance which, in turn, increases revenue generation for governments.

For governments, mobile services facilitate four main steps along the digitalisation journey: access, registration and authentication, payments, and public service delivery and communication. This study focuses on the payments step and, in particular, the digitalisation of person-to-government (P2G) payments using mobile money, highlighting its benefits for governments, citizens, businesses and the wider economy. Cases in Rwanda and Cambodia are included to demonstrate the impact that can be achieved by digital government services and payments. The study concludes with a series of recommendations for successful implementation of mobile money P2G payments.

Mobile money P2G payments are an untapped opportunity globally. P2G payments can be applied to a wide range of government services, covering payments such as monthly utility bills, annual education fees or one-off payments for a business registration tax. An array of public entities could benefit from digitalising P2G payments — from local schools and municipalities to regional utility companies and national ministries. Governments can achieve simple wins by first integrating mobile money for less complex services, then transition to other categories considered more complex.

Digitalising P2G payments using mobile money reduces administrative costs and leakage, while increasing government revenues by expanding the collection base. For example, the introduction of mobile money as a mode of payment by the Ministry of Public Works and Transport (MPWT) in Cambodia led to a growth in revenue from 60 billion riel ($14.8 million) in 2017 to 150 billion riel ($37 million) in 2019. Other benefits include improved government financial planning as well as increased transparency, accountability and traceability of funds collected.

For citizens and businesses, mobile money P2G payments eliminate travel time and the cost of transport to and from government payment offices. Digital payments bring public services closer to citizens, which drives voluntary compliance, and this helps to formalise the informal economy. In Rwanda, mobile money is the most popular option to pay for government services on the IremboGov platform, an online portal for digital government. Mobile services allow users to access government services remotely and in a convenient manner, providing access to multiple government departments at once.

The digitalisation of all payments to governments in developing countries could generate savings of about 0.8% to 1.1% of GDP each year through reduced leakage and fraud and increased efficiency of payments. About 29% of this would accrue to the digitalisation of P2G payments, amounting to a saving for governments of about 0.2% to 0.3% of GDP ($64–93 billion) on average across the developing world.[1] Countries with a high level of cash payments and receipts, such as developing countries, would particularly benefit from digitalising payments.

1 Lund S., White O., Lamb J. (2017). The value of digitalizing government payments in developing economies, in IMF (2017). Digital revolutions in public finance.

This report identifies a number of recommendations that public entities could consider to successfully digitalise government services and payments:

- **Define a clear strategy, supported at the highest level**
- **Conduct a landscape study of government services to identify the most promising opportunities**
- **Digitalise services end to end**
- **Support expansion and usage of connectivity**
- **Implement user-friendly digital payments and services accessible by all**
- **Adopt measures to improve awareness and usage of digital government services and payments**

Digitalising P2G payments using mobile money reduces administrative costs and leakage, while increasing government revenues by expanding the collection base.

2. The potential of digital government services

A growing number of governments are prioritising the digitalisation of public services as part of ambitious national agendas aimed at enhancing public services and mobilising domestic resources. This involves transforming multiple steps of the public service delivery process to enable digital access, manage service requests and accept digital payments. This study focuses on the digitalisation of person-to-government (P2G) payments through mobile money in low- and middle-income countries, highlighting the benefits for governments, citizens and the wider economy. In particular, it highlights how the digitalisation of P2G payments contributes to increasing government revenue.

For this study, P2G payments are defined as any payment from an individual or a business (payer) to a public entity (payee), including payments for public services, taxes and utility services.[2] Such payments can be collected from public entities at the local, regional and national level.

In low- and middle-income countries, mobile money is widely available, and network operators are well positioned to facilitate payments from their large base of customers to public entities using mobile money. Mobile money distribution networks have, on average, seven times more reach than automated teller machines (ATMs) and 20 times more reach than bank branches.[3]

Furthermore, due to its USSD channel, mobile money is enabled on both feature phones and smart phones, catering to low-income and tech-savvy population segments in both rural and urban settings. In 2019, the number of registered mobile money accounts surpassed 1 billion across 95 countries.[4]

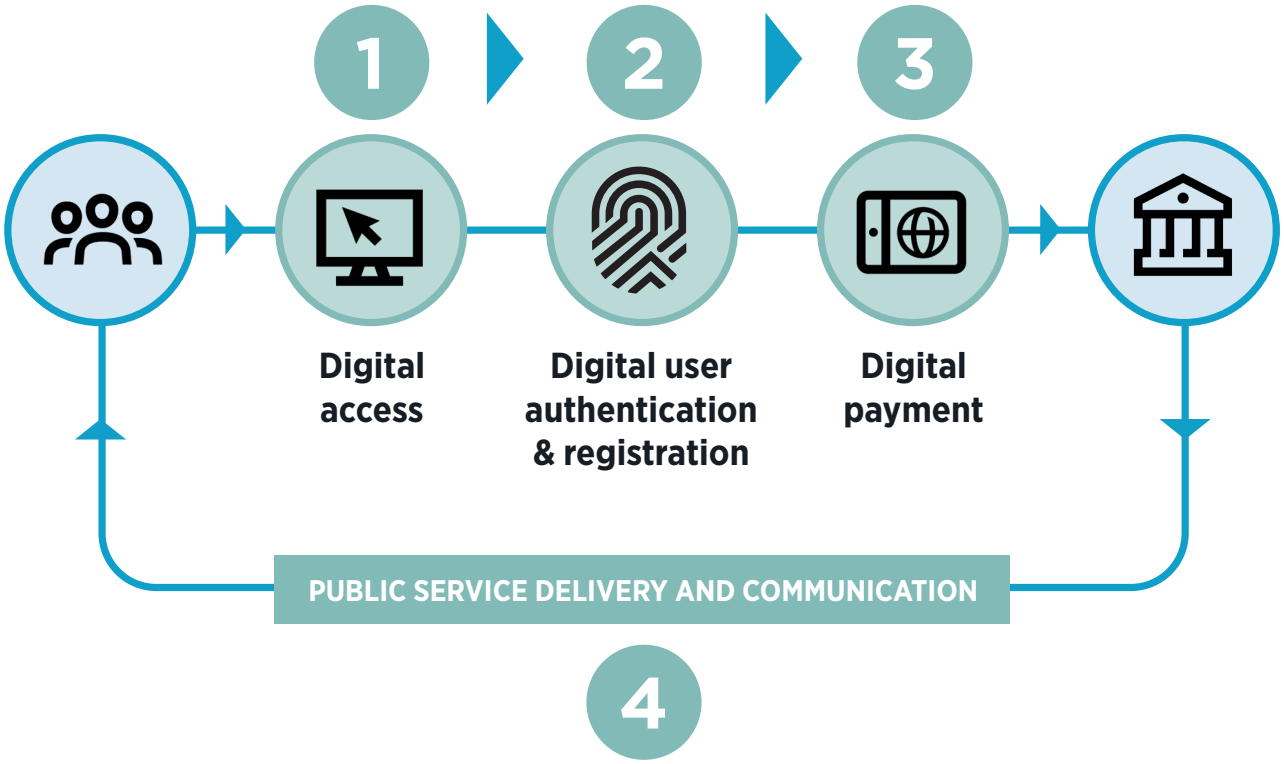
2 Utility payments are considered as P2G payments based on the assumption that water, electricity and gas utility companies are government owned. Section 3 provides a detailed list of mobile money P2G payments.
3 GSMA (2019). State of the Industry Report on Mobile Money.
4 GSMA (2019) State of the Industry Report on Mobile Money. [East Asia and the Pacific (40,317,367), Europe and Central Asia (4,017,162), Latin America and the Caribbean (8,580,424), Middle-East and North-Africa (11,672,862), South Asia (65,219,517), and Sub-Saharan Africa (131,583,251)].

2.1 Contribution of the mobile sector to digital government services

The digital journey of a public service consists of four main steps: access, user authentication and registration, payment, and public service delivery and communication (Figure 1). For a successful transition towards digital government, countries should take a holistic approach, digitalising public services end to end to create greater value for citizens. Citizens benefit more from a fully digitalised public service than from a public service that can be paid digitally but still requires in-person interaction.

Figure 1

Main steps of digital government service delivery



The mobile sector plays a critical role in each step of the digital public service journey.

1 DIGITAL ACCESS

According to the UN e-government survey, mobile broadband access is necessary for citizens and businesses to benefit fully from digital government services.[5] Network coverage and affordability are two preconditions that allow governments to interact digitally with citizens, including the poorest and most vulnerable populations.

For a successful digital government, it is crucial to reduce the digital divide. At the end of 2019, the 'coverage gap' — people who live in areas that are not covered by mobile broadband — represented 7% of the world's population compared to 20% in 2015. However, the 'usage gap' — people who live in a location that is served by a mobile broadband network but who are not using mobile internet — has only slightly decreased in recent years, moving from 45% in 2015 to 44% in 2019. In low- and middle-income countries, the main barriers to mobile internet usage are affordability, low levels of literacy and digital skills, a perceived lack of relevance, and safety and security concerns.[6] To facilitate access to digital government services, it is critical to address these barriers.

How the United Kingdom is saving costs by doing digital

Increasing digital inclusion also generates cost savings for governments as people and businesses become connected.

According to the United Kingdom digital efficiency report, transitioning to digital public service delivery brings considerable savings for governments, as a digital transaction is 50 times cheaper than a face-to-face transaction. A body of evidence indicates that digital delivery of public services is at least as strong as other delivery channels, but at a lower unit cost.

In the UK, between £1.7 billion and £1.8 billion (about $2.1–2.4 billion) could be saved annually by the government and by service users by shifting transactional services from offline to digital channels. Savings would arise through reduced staff time, estates and accommodation, materials and office equipment costs.[7]

Table 1

Relative cost of different public service delivery channels

Public service delivery channel	Relative unit cost
Digital	1
Telephone	20
Post	30
Face-to-face	50

Source: Gov.uk (2012). Digital efficiency report.

2 USER AUTHENTICATION AND REGISTRATION

Most digital public services require some form of registration, and this often requires user authentication. Citizens' access to life-enhancing services including healthcare, education and financial services relies, therefore, on the ability to prove their identity.[8] Taxpayer registration, for example, is the basis of an effective tax administration on which subsequent steps such as tax filing and payment depend.

Mobile provides a convenient and secure solution to ease the authentication process. In Rwanda, the online portal for digital government services, IremboGov, requires its users to register using their national ID and associated mobile phone number.

Mobile network operators are uniquely placed to help improve access to official identification. Their retail outlets and agent networks can serve as registration channels, and they can contribute to public-private partnerships addressing enrolment challenges and digital literacy gap. Mobile-led digital birth registration initiatives have proved to be very successful in providing access to official identification. For example, Telenor Pakistan has been collaborating with local authorities and UNICEF to digitalise the birth registration process. During the pilot phase of the programme, registration of newborn babies increased from 30% to 90% in just six months.[9]

Liberia's revenue authority, the LRA, has found it difficult to register small and informal businesses. To overcome this issue, the LRA used Kobo, a mobile data collection toolbox, to easily and accurately collect taxpayer information from small and informal businesses.[10]

5 United Nations (2018). E-government survey 2018.
6 GSMA (2020). The state of mobile internet connectivity 2020.
7 Gov.uk (2012). Digital efficiency report.
8 GSMA (2019). Access to Mobile Services and Proof of Identity 2019.
9 Telenor. Giving Pakistani children an identity. Accessed on 28/02/2020.
10 African Tax Administration Forum (2017). African tax outlook 2017.

3 PAYMENT

Mobile money allows citizens and businesses to pay for public services remotely via their mobile phone or through a mobile money agent. Governments that facilitate mobile money transactions as part of their digital services are able to access to a wider base of citizens and businesses. While increasing payment convenience for payers, the digitalisation of government payments improves public finance management and strengthens financial transparency.

Mobile money providers use three main integration models to facilitate P2G payments: (i) direct integration between the mobile money provider and the government agency, (ii) integration through a third-party payments aggregator, and (iii) integration through a centralised official digital government platform connecting several government agencies.[11]

The digitalisation of payments to government remains a significant untapped opportunity in developing countries. In Nigeria and Indonesia, only 9% and 15% of transactions for tax receipts, respectively, were digital, representing 34% and 61% of tax receipts by value.[12]

11 GSMA (2017). Person-to-government (P2G) payment digitisation: lessons from Kenya.
12 Lund S., White O., Lamb J. (2017). The value of digitalizing government payments in developing economies, in IMF (2017). Digital revolutions in public finance.
13 World Bank (2019). How mobile text reminders earned Madagascar a 32,800% ROI in collecting unpaid taxes.
14 Mascagni G., Nell C., Monkam N. (2017). One size does not fit all: a field experiment on the drivers of tax compliance and delivery methods in Rwanda.

4 PUBLIC SERVICE DELIVERY AND COMMUNICATION

To maximise adoption of digital public services, it is important to digitalise the full journey from end to end, that is, all of the steps from public service request to delivery, to the fullest extent possible. For example, an increasing number of countries have digitalised their travel visa process, from application through to delivery. In countries that allow tax payments to be completed via mobile phone, a digital receipt is conveyed to the taxpayer via SMS confirming submission of the tax report and the payment, completing the service journey. Of course, awareness about the availability of digital public services is necessary to drive usage.

The financial gains from a simple text message

Mobile services also improve the communication between the government and citizens, which in turn brings wider efficiency benefits.

In Madagascar, for example the Directorate General for Taxation and the World Bank experimented with the use of text messages via mobile phones to remind late tax filers. This resulted in a significant increase in compliance, allowing the tax authority to collect an additional $329 in revenues for every $1 spent in text messages.[13]

In Rwanda, a similar experiment generated about $9 million in additional revenue for the Rwanda Revenue Authority (RRA) by using SMS and email to improve tax compliance.[14]

3. Digitalisation of P2G payments through mobile money

Person-to-government (P2G) payments are the transfer of funds from individuals or businesses to governments for public services.

After detailing the different types of person-to-government payments, this section presents the state of mobile money P2G payments in low- and middle-income countries and describes the main benefits of digitalising payments for public services. This section concludes with two case studies on government service digitalisation in Rwanda and Cambodia.

3.1 Typology of mobile-enabled P2G payments

Person-to-government (P2G) payments are the transfer of funds from individuals or businesses to governments for public services (e.g., to obtain documents such as birth or marriage certificates or business licenses), statutory payments such as taxes, and payments for state-owned utility services. Recipient agencies and institutions can be at the municipal, state or national level, and include public schools, police forces and revenue authorities, for example. Table 2 presents the categories and definitions of government services requiring payments from citizens and businesses.

P2G payments may be for recurring or periodic services such as monthly utility bills or daily parking fees, or they may include annual expenditures for property tax or one-off payments for a business registration tax.

Table 2

P2G payment categories and definitions

Government service	Public entity	Scope of P2G payment
Utility	State-owned utility company	Bill payments for electricity, water and gas
Education	School, university, ministry of education, etc.	Payments for school fees, university fees, examination fees or enrolment fees
Public Services	Local authority, ministry of interior affairs, etc.	Payments of fees relating to services such as passports, marriage certificates, trade name registration, fire inspections, etc.
Transport	Ministry of transport, state-owned entity in charge of transport services, police, etc.	Payments related to transportation activities such as penalties and fines (e.g., traffic violations), expenditures for driving licence, vehicle registration, vehicle technical control, motorway fees, bridge fees, parking fees, bus tickets, train tickets, plane tickets, etc.
Taxes	Revenue authority, local authority, etc.	Compulsory and unrequited payments to government including property tax, business registration, custom duty, income tax, import tax, employment tax, hotel tax, value added tax (VAT), etc.
Other	Public finance institutions, postal companies, etc.	Other payments such as treasury bond reimbursement, zakat,[15] microcredit public loan, postal services, etc.

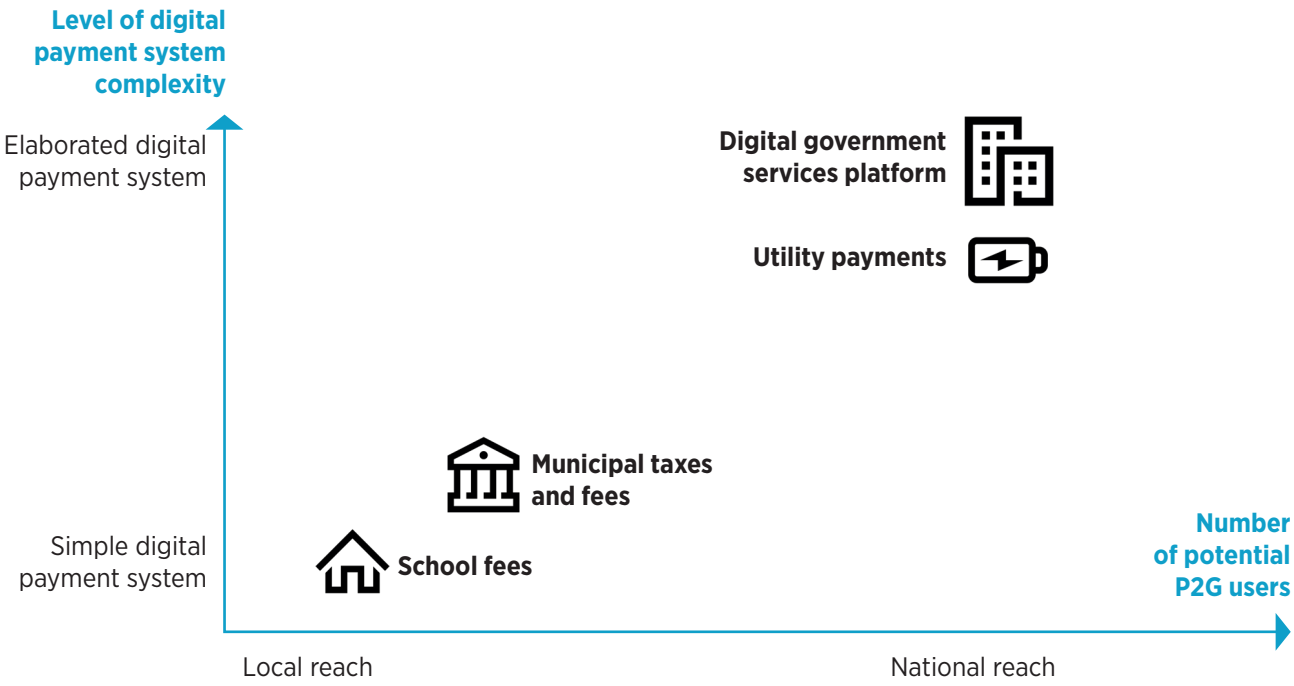
15 In Muslim communities and societies, Zakat is a private income transfer made by the more fortunate to those in need for the purpose of ensuring a minimum standard of living. See Islamic Development Bank (1999).

Given the range of government services and the prevalence of P2G payments, digital channels such as mobile money offer citizens and governments an alternative to conventional modes of settlement, namely in-person cash transactions that necessitate travel to and from a public entity. Paying for government services through digital channels such as mobile money delivers efficiency gains that increase convenience for citizens and businesses, reduce expenditures and leakages for the government and generate additional service revenue.[16] These benefits are further explored in Section 3.3.

To date, global research suggests that P2G payments of various types and frequencies can be digitalised, however simple or complex the back-end technical requirements may be. All public entities, irrespective of their size or scope, can enable P2G payments through straightforward or more elaborate systems. For example, municipalities and educational institutions can implement simple frameworks to enable digital payments by local citizens towards taxes or school fees. National governments can implement more complex systems that streamline a plethora of P2G payments. Figure 2 illustrates different levels of system complexity and scale associated with different types of service payments.

Figure 2

Comparison of digital P2G payment systems by reach and complexity



16 Wasunna, N., et al. (2019). Championing a unified digital person-to-government (P2G) payments strategy. Lessons from Orange P2G operations in Africa. GSMA.

3.2 Landscape of mobile money P2G payments in low- and middle-income countries

This section provides an overview of countries charting a path towards effective and successful mobile money P2G payments, most of which are provided through mobile operators.

In 2019, the GSMA undertook a landscaping study to better understand the reach, diversity and scale of mobile money P2G payments across Sub-Saharan Africa, Asia, Latin America, and the Middle East and North Africa (MENA), as well as the breadth of services available in different countries. The landscaping largely relied on secondary desk research and was validated through follow-up discussions with in-country stakeholders.[17]

The research surfaced 46 countries that enable mobile money P2G payments, while also outlining the most common categories of services paid through the channel by region. The study's findings underscore the widespread use of mobile money for both simple and complex transactions: in some scenarios, mobile money is applicable for one service with one public entity and, in other instances, mobile money is linked to over 100 services with several public agencies connected through a central payment platform. Collectively, the findings indicate that mobile money P2G payments are a growing phenomenon in low- and middle-income countries. While still fairly new in regions such as Latin America and the Middle East, progressive uptake within Africa highlights the potential of digitalising P2G payments through mobile money in emerging markets and beyond.

3.2.1 A deeper scan of the landscaping study

Out of the 46 countries captured in our landscaping analysis, utility payments are the most common mobile money P2G payment type. Mobile money is accepted as a mode of payment for at least one type of utility service (e.g., water or electricity) in 45 countries. Within the utility category, electricity is the leading service (44 countries), followed by water (40 countries) and gas (6 countries). After utility payments, tax and education-related payments are the second and third most common types (29 and 28 countries respectively).

These trends are aligned with a growing body of literature on P2G payments, particularly with respect to the increasing prominence of digitalised P2G payments for utilities and taxes. According to a bi-annual e-government survey of both developed and emerging economies, utility payments are the leading digital P2G payment type (140 countries).[18] This data suggests that utility services represent the most practical entry point for governments considering a digital P2G payments approach or strategy, or for countries in the initial phases of transitioning from cash. Governments can pursue simple wins by first integrating mobile money for less complex services, then transition to other categories considered more complex.

Beyond payments for utilities, tax and education, mobile money is increasingly used as a method for collecting fees for public services including payments for passports, birth certificates and marriage certificates. These services are basic necessities for the general public. For countries that have already adopted mobile money solutions for utilities, tax and education, general-public services can be the next option to consider, given their day-to-day relevance for the mass market.

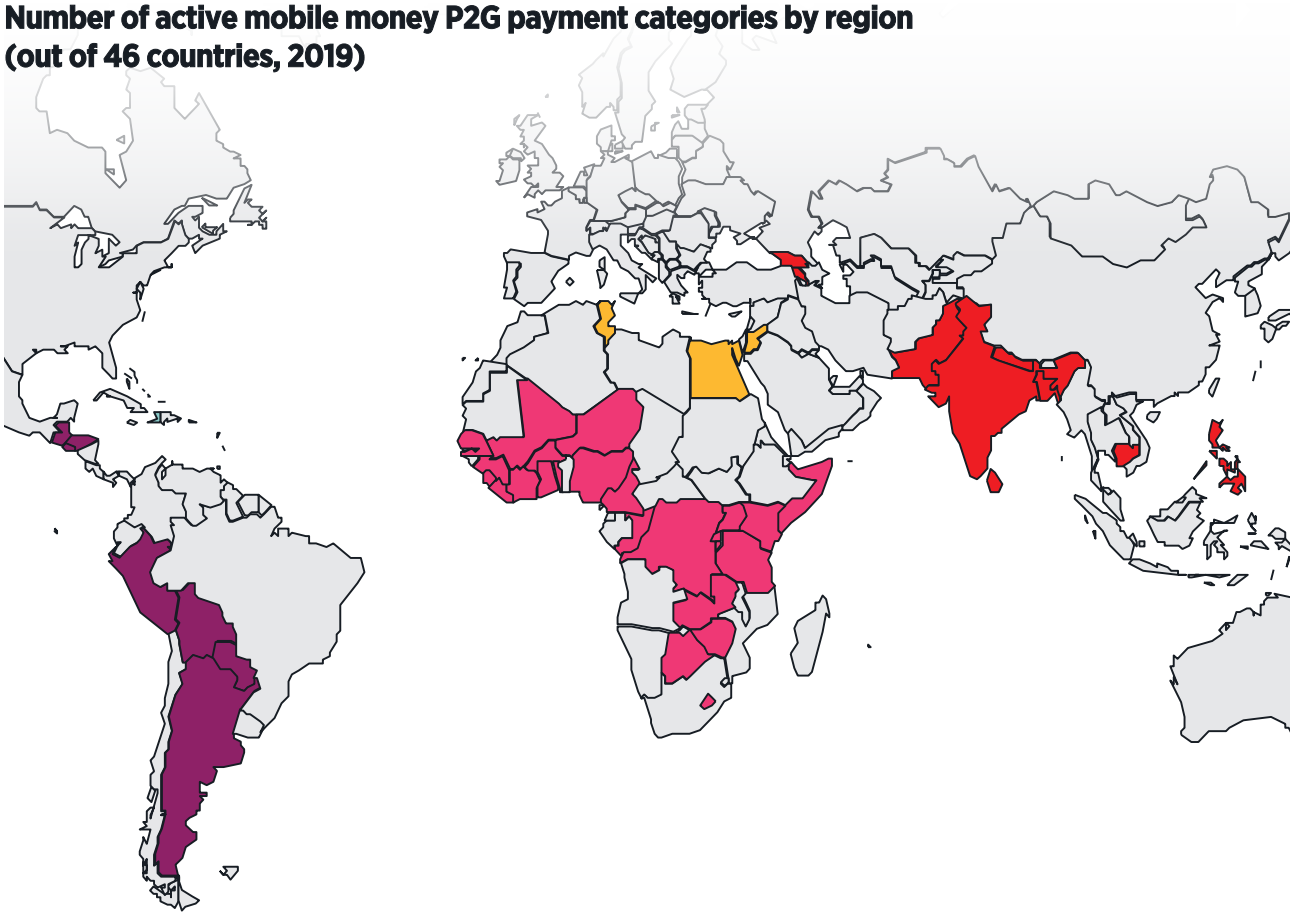
Similar to general-public services, transport-related payments are a growing category of mobile money P2G payments. Transportation payments include a wide range of services, from bus tickets and driving licences to motor-vehicle registrations, traffic fines and toll fees. Various types and levels of government entities such as ministry of transport, police and local transport company collect transportation-related fees. Both the general-public service and transportation categories represent domains that can be further tapped into for mobile money P2G payments globally.

17 The landscaping study was finalised in December 2019. The COVID-19 pandemic lead to accelerated digitalisation of payments through mobile money, including P2G payments. This study does not cover new mobile money P2G payments launched in 2020. The research includes 46 countries across Sub-Saharan Africa (25), Asia (10), Latin America (8), and the Middle East and North Africa (MENA) (3).

18 United Nations (2018). E-Government Survey 2018.

Figure 3

Number of active mobile money P2G payment categories by region (out of 46 countries, 2019)



Categories	SSA	Asia	LatAm	MENA	Total
Utility	24	8	10	3	45
Taxes	20	3	5	1	29
Education	21	1	4	2	28
Transport	13	2	5	2	22
Public services	14	3	4	1	22
Other	2	2	1	0	5

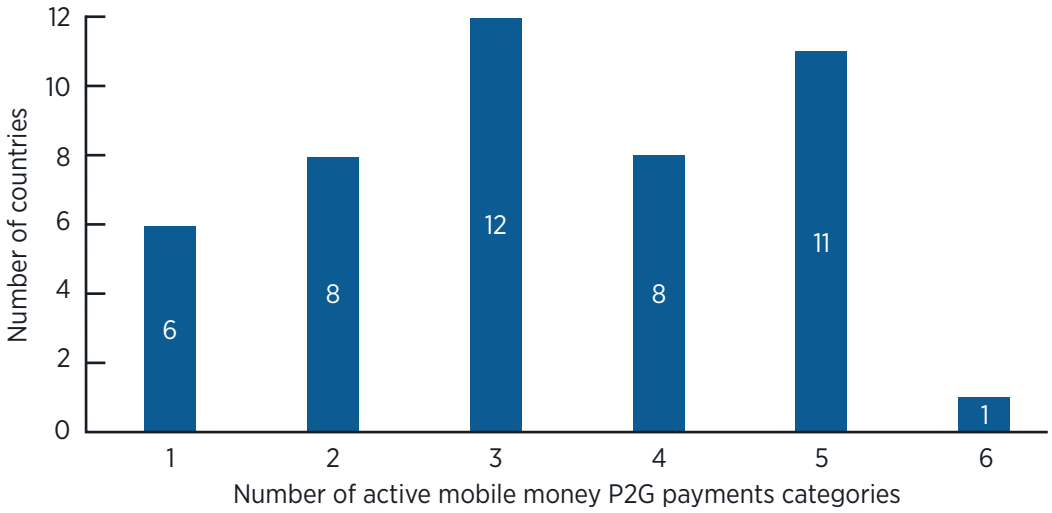
The research includes 46 countries across Sub-Saharan Africa (25), Asia (10), Latin America (8), and the Middle East and North Africa (MENA) (3).
A person-to-government (P2G) payment category is considered as active when mobile money payment is enabled for at least one government service of that category.

Most countries accept mobile money as a mode of payment across a wide range of government service categories, highlighting applicability across various domains, as well as the potential for replicability. A country can introduce P2G payments for utility and tax categories and link mobile money to subsequent government services, particularly as upfront costs to digitalise diminish with each added service over the long term. Our research finds that it is quite common for countries to enable mobile money payments for more than one government service. Out of the 46 countries captured in our study, 26 countries have one to three active mobile money P2G categories and 20 countries have four to six active categories.[19]

19 A person-to-government (P2G) payment category is considered as active when mobile money payment is enabled for at least one government service of that category.

Figure 4

Number of countries per number of active mobile money P2G payment categories (2019)



In Sub-Saharan Africa, Côte d'Ivoire has adopted mobile money across a wide range of P2G categories. In addition to paying water and electricity bills, citizens can pay school and university fees, public transport tickets, vehicle safety tests and property tax. Enabling mobile money to facilitate school fees continues to be a deliberate strategy driven by the Ministry of National and Technical Education integrated by key mobile operators in the country, including MTN, Orange and Moov.[20] The National Treasury of Côte d'Ivoire also accepts mobile money as a mode of payment for treasury bonds.[21]

Many Sub-Saharan countries have digitalised their tax payments using mobile money. Property taxes, business taxes and sales taxes are the most popular taxes to be digitalised. In 2018, the Liberia Revenue Authority (LRA) and the Zambia Revenue Authority (ZRA) launched their first mobile tax payment platforms. In Liberia, the platform facilitates the payment of all taxes and non-tax fees including goods and services tax (GST), business income tax, personal income tax, birth certificate, and fire safety certificate.[22] Liberian citizens can also pay for school fees and utility bills (electricity and water) using mobile money.

To improve the delivery of public services, Kenya and Rwanda launched a digital government service delivery and payment platform named eCitizen (2014) and IremboGov (2015) respectively, both of which leverage mobile money significantly. In Kenya, 90% of digital payments undertaken on eCitizen are through mobile money. In addition to increasing the transparency, traceability and accountability, migrating services to eCitizen resulted in a doubling of revenue collection by the Kenyan National Transportation Safety Authority (NTSA), rising from $1.1 million to $2 million per month between July 2015 and October 2016.[23]

Mobile money P2G payments are also quite common for government services in Somalia. According to a study by the World Bank, 67% of survey respondents who pay for utilities indicated doing so via mobile money compared to 30% who pay at a service provider's branch and 25% who pay in cash. Respondents to the same survey indicated that the main reasons for sending money domestically are paying utility bills (63%) and education fees (39%). Paying taxes is a reason for 8% of survey respondents.[24]

In Pakistan, passport application and traffic fine payments were among the first P2G payments to be digitalised following conversations initiated by mobile money providers. The government's willingness to adopt a digital approach to P2G payments was a key catalyst to implement the initial transitioned approach. For both services, the time saved by citizens was the primary driver to launch these services. Digitalising these payments using mobile money reduced the process from one day to a few minutes for passport applications and from three hours to less than one hour for traffic fines.[25]

20 Frydrych J., et al. (2015). Paying school fees with mobile money in Cote d'Ivoire: A public-private partnership to achieve greater efficiency. GSMA.
21 Direction Générale du trésor et de la comptabilité publique, accessed on 3 April 2020. https://investir.tresor.gouv.ci/presentations/faq
22 Liberia Revenue Authority (2018). News release, Mobile tax payment begins in Liberia as LRA, RG3, UBA & Orange Liberia launch platform, LRA/PR-39/17-18.
23 GSMA (2017). Person-to-government (P2G) payment digitisation: lessons from Kenya.
24 World Bank, Altai Consulting (2017). Mobile money ecosystem in Somalia.
25 GSMA (2016). Person-to-government payments in Pakistan.

3.3 Benefits of digitising payments for government services

Digitising payments for government services brings wide-ranging benefits to governments, citizens, businesses and the economy. By providing an efficient, convenient and transparent revenue collection system, the digitalisation of payments supports governments to mobilise domestic resources more efficiently and to increase collected revenue. As such, digitising P2G payments contributes directly to the UN Sustainable Development Goal (SDG) 17.1: strengthening domestic resource mobilisation to improve domestic capacity for tax and other revenue collection. The digitalisation of P2G payments also increases resilience to shocks such has the COVID-19 pandemic.

For governments, the digitalisation of payments can generate savings and increase government revenues. This arises from a combination of factors:

Reduced administrative costs

By digitising payments, governments automate their payment systems, which reduces the cost of collecting, processing and tracking payments.

Reduced leakage in government revenue

By creating a recorded financial history, mobile money brings transparency and reduces the opportunities for leakage between the citizen or business and the government. A GSMA case study revealed that the digitalisation of P2G payments in Kenya increased transparency, accountability and traceability of funds collected, allowing public entities to minimise fraud.[26] According to McKinsey (2016), governments of emerging economies could save about $40 billion annually from reduced leakage in tax receipts by using digital payments. As an example, Pakistan could save about $2 billion annually.[27]

Expanded revenue collection base

The improved accessibility of digitalised services eases compliance, gives governments access to a wider base of citizens and companies. In 2011, Tanzania Revenue Authority (TRA) enabled tax payments over mobile money and mobile banking for property taxes, personal income tax and presumptive taxes. One year later, 15% of the tax base was using the new mobile payment option and, among those, some did not have a history of paying taxes. In addition, mobile payment capability was linked to a decrease in tax avoidance.[28]

Digitalising payments improves financial planning for governments. Digitalised payments facilitate reporting, reconciliation and settlement. With the shift from paper to digital recordkeeping, tasks are now done digitally and almost instantaneously, which improves data processing and reduces errors and time spent on manual processes. Digital records enable the comparison between different sets of data and allow governments to manage their financial resources based on more reliable and up-to-date information. In 2016, Guinea adopted mobile money as a mode of payment for the vehicle tax. This led to two main financial planning improvements for the government: a daily report on the amount of vehicle tax paid, and payments of the vehicle tax collected the previous day. In addition, the government has access to a digital platform that tracks vehicle tax payments in real time (the platform is updated every 15 minutes).

26 GSMA (2017). Person-to-government (P2G) payment digitisation: lessons from Kenya.
27 McKinsey & Company (2016). Digital finance for all: powering inclusive growth in emerging economies.
28 STATT (2012). Mobile finance and citizen security in East Africa.

For citizens and businesses, digital payments bring time and costs savings such as travel time and transport cost to and from the government payment office. In addition, citizens and businesses benefit from reduced opportunity costs from the time saved, especially if used to take on more work generating additional revenue. According to Ndung'u (2019), the launch of a mobile tax payment platform by the Kenya Revenue Authority (KRA) made payments easier and more convenient for small taxpayers, mainly in the informal sector. Thanks to the digital payment system, taxpayers no longer have to travel to the KRA office to pay their taxes, saving them time and money. The increase in mobile-phone based transactions between 2014 and 2016 confirms this trend.[29]

With digital payments, users benefit from a convenient and fast payment method allowing remote payment of government services. In Kenya, surveyed citizens mention using mobile money for P2G payments for three main reasons: ease (93%), convenience (56%) and speed (48%).[30]

Digitalising payments positively impacts GDP. According to McKinsey (2016), digital finance could increase the GDP of emerging economies by $3.7 trillion (6%) by 2025 through economic and social benefits to government, individuals, businesses and financial services providers. About 60% of the boost would come from an increase in productivity of businesses and governments. The rest would come from additional investment arising from broader financial inclusion of businesses and people.[31]

Digitalising government payments brings economy-wide savings. According to Lund, White and Lamb (2017), digitalising all government payments in developing countries could save about 0.8% to 1.1% of GDP, or about $220 billion to $320 billion in value each year for all developing countries.[32] Out of the total amount saved, the digitalisation of payments from citizens and businesses to governments would contribute to about 29% of total cost saving ($64–93 billion). In other words, digitalising P2G payments could generate cost and efficiency savings of about 0.2% to 0.3% of GDP. Lund, White and Lamb (2017) consider that savings arise from reduced leakage, fraud and costs of payment processing within the government. These figures are certainly underestimated, given the value of other direct and indirect benefits such as the increase of the tax base by incentivising compliance of citizens and businesses.[33]

Countries with a high level of cash payments and receipts would particularly benefit from digitalising payments. According to Lund, White and Lamb (2017), Nigeria could save about $5–9 billion annually, equivalent to 1% to 1.7% of GDP, by digitalising government payments.[34] Digitalising government receipts from citizens and businesses would contribute about 22% of the total savings.

Digital payments contribute to reducing the size of the informal economy. By bringing greater transparency and providing access to the formal financial system, digital payments reduce the size of the informal economy which, in turn, increases productivity. The formalisation of businesses increases compliance costs but can also boost productivity by providing access to capital and enabling them to grow. A study based on a panel of 101 emerging and developing countries found that adoption of mobile financial services (MFS) reduced the size of the informal sector. Over the period 2000–2015, MFS adoption decreased the informal sector between 2.4 and 4.3% percentage points of GDP. Some of the factors explaining the formalisation effect are improved access to credit, increased productivity and profitability of informal firms, and growth of companies already in the formal sector.[35] An econometric study on eight Central and Southern European countries found that "an increase in the value of card payments by 100% should lead to a reduction in the shadow economy in the analysed countries by 0.6–3.7% of GDP, and to an increase in government revenues by 0.1–0.8% of GDP".[36]

29 Ndung'u N. (2017). Digitalization in Kenya, in IMF (2017). Digital revolutions in public finance.
30 GSMA (2017). Person-to-government (P2G) payment digitisation: lessons from Kenya.
31 McKinsey Global Institute (2016). Digital Finance for all: powering inclusive growth in emerging economies.
32 Government payments include government receipts from citizens and businesses; government expenditures to public employees, individuals and businesses; and intra-government payments.
33 Lund S., White O., Lamb J. (2017). The value of digitalizing government payments in developing economies, in IMF (2017). Digital revolutions in public finance.
34 Lund S., White O., Lamb J. (2017). The value of digitalizing government payments in developing economies, in IMF (2017). Digital revolutions in public finance.
35 Jacolin L., et al. (2019). Informal sector and mobile financial services in developing countries: does financial innovation matter?
36 EY (2016). Reducing the shadow economy through electronic payments.

Table 3

Impact of digitalised P2G payments

Impact on public entities	
Increased government revenue	In **Tanzania**, water bill payments through M-Pesa led to a revenue increase of 28% (about $540,000 annually) for Dar es Salaam Water and Sewage Authority (DAWASCO) following the digitalisation of its payment options (2013).[37] In **Guinea**, enabling the payment of vehicle tax with mobile money strongly contributed to a threefold revenue increase from GNF 10 billion (2016) to GNF 34 billion (2017). The number of vehicle licenses sold increased from 124,000 to 360,000.[38]
Lower administrative costs	In **Pakistan**, the digitalisation of passport fee payments led to a cost reduction of about 50%. The cost of processing a passport payment decreased from about PKR 200–250 ($2–2.5) to about PKR 100 ($1). The fee covers costs incurred by both the implementation partner, the mobile money provider (JazzCash), and the National Bank of Pakistan.[39]
Reduced leakage in government revenue	In **Côte d'Ivoire**, payment of school fees via mobile money reduced the incidence of lost payments, fraud and theft. When school fees were paid in person, a large proportion of school fees payments were lost and armed robbery at cash collection points was common.[40] In **Tanzania**, the Ngorongoro Conservation Area Authority (NCAA) moved from cash to prepaid and credit cards for park entrance fees in 2011. In 2013, park gate revenues increased from TZS 37 billion ($16 million) to TZS 52 billion ($23 million). The NCAA attributed this increase to reduced leakage when moving from cash to digital payments.[41] Also in **Tanzania**, the introduction of mobile money for the payment of water bills reduced opportunities for petty corruption.[42]
Expanded revenue collection base	In **Senegal**, the Customs School noted a 50% increase in registration following the digitalisation of registration payments for its entrance exam. Registration increased mainly due to new candidates from areas outside the capital who saved at least $8 in transportation costs.[43] In **Tanzania**, the Dar es Salaam Water and Sewage Authority (DAWASCO) reported that mobile money attracted new and dormant customers, increasing the customer base from 25,000 (2013) to 148,000 (2016) households.[44] In **Kenya**, the digitalisation of voluntary insurance payments via mobile money led to a 500% increase in subscribers from fewer than 440,000 (2009) to about 23 million (2017). With the majority of payments done via mobile money, National Health Insurance Fund offices can focus on other tasks such as responding to customer queries and processing claims.[45]
Improved financial planning	In **Côte d'Ivoire**, the payment of school fees via mobile money allowed the government to collect fees earlier and over a shorter period of time, which makes it easier to manage annual budgets.[46] In **Kenya**, billing records showed that users paying their water bill with mobile money are 10% more likely to pay on time. Furthermore, the introduction of mobile money as a mode of payment led to a decrease in the number of monthly disconnections.[47] Mobile money drives more regular payments, which facilitates budget planning.

37 Better Than Cash Alliance (2016). Person-to-government payments: Lessons from Tanzania's digitization efforts; and Omary (2013). Dawasco hails M-Pesa billing, The Citizen.
38 Government of Guinea (2017). Minutes of ministerial council of 27 July 2017. GSMA (2017). Making a debut of P2G payments.
39 Karandaaz, CGAP, Dalberg (2016). Global landscape study on digitising P2G payments. https://www.karandaaz.com.pk/wp-content/uploads/2017/02/Global-Landscape-Study-on-Digitising-P2G-Payments.pdf
40 Frydrych J., et al. (2015). Paying school fees with mobile money in Cote d'Ivoire: A public-private partnership to achieve greater efficiency. GSMA.
41 Better Than Cash Alliance (2016). Person-to-government payments: Lessons from Tanzania's digitization efforts.
42 Krolikowski (2014). Can mobile-enabled payment methods reduce petty corruption in urban water provision?
43 Wasunna, N., et al. (2019). Championing a unified digital person-to-government (P2G) payments strategy. Lessons from Orange P2G operations in Africa. GSMA.
44 Better Than Cash Alliance (2016). Person-to-government payments: Lessons from Tanzania's digitization efforts.
45 GSMA (2017). Person-to-government (P2G) payment digitisation: lessons from Kenya.
46 Frydrych J., et al. (2015). Paying school fees with mobile money in Cote d'Ivoire: A public-private partnership to achieve greater efficiency. GSMA.
47 Hope R.A., Foster T., Krolikowski A., and Cohen I., (2011). Mobile Water Payment Innovations in Urban Africa. School of Geography and the Environment and Skoll Centre for Social Entrepreneurship at Saïd Business School, Oxford University, UK.

Impact on citizens and businesses

Time and cost savings	In **Kenya**, users paying their water bill with mobile money spend 82% less time to make the payment compared to those paying their bill at the bank. On average, mobile money users save about 54 minutes per payment from time spent travelling and queueing.[48] In **Pakistan**, the use of mobile money to pay for traffic fines reduced the time to process the payment from three hours to less than an hour.[49]
Ease, convenience and speed of service	In **Rwanda**, compulsory use of the electronic filing and payment system led to a decrease of 10 hours in the time required by businesses to prepare, file and pay taxes, from 119 hours (2015) to 109 (2016).[50]

Digitising payments for government services brings wide-ranging benefits to governments, citizens, businesses and the economy.

48 Hope R.A., Foster T., Krolikowski A., and Cohen I., (2011). Mobile Water Payment Innovations in Urban Africa. School of Geography and the Environment and Skoll Centre for Social Entrepreneurship at Saïd Business School, Oxford University, UK.
49 GSMA (2016). Person-to-government payments in Pakistan.
50 World Bank (2016). Doing business 2016.

3.4 Case studies of government service digitalisation

The following case studies from Rwanda and Cambodia describe the process of government service and payment digitalisation and the resulting benefits for government, citizens and businesses. These case studies are based on information collected through questionnaires and semi-structured interviews.[51]

Case Study

3.4.1 Digitalisation of public services in Rwanda

Driven by an ambitious technology agenda under Vision 2020, Rwanda is making strides towards a digitally enabled economy. In 2015, the Government of Rwanda established the service delivery and payment platform IremboGov, as part of a public-private partnership with local entrepreneurs and mobile operators to digitalise all government services.[52] IremboGov's mandate directly aligns with Rwanda's National Strategy for Transformation (NST1) by strengthening the capacity, service delivery and accountability of public institutions.[53] Rwanda's tax-to-GDP ratio stood at about 14% in 2018, well under the figure for Sub-Saharan Africa (19%).[54] The economy is highly informal, with informal employment representing 94% of total employment (2014), compared to 86% for all of Africa (2016).[55]

A comprehensive digital solution for government services

As the one-stop online portal for digital government services, IremboGov provides access to government services with ease, efficiency and reliability.[56] IremboGov is a USSD and web-based platform that allows citizens and foreigners to seamlessly apply for and pay for a range of public services including community-based health insurance, driving test registration, visa and national ID applications, among others. As of January 2020, 98 non-fiscal services representing 19 government ministries and agencies are available on the platform.

Mobile operators Airtel and MTN are contributing to IremboGov's success. In addition to enabling digital access to the platform through mobile connectivity, mobile operators contribute to a secure identification system requiring citizens and businesses to use their mobile number to register on IremboGov. Furthermore, mobile money is an efficient, secure and widely accessible payment solution which facilitates the transaction between users and IremboGov.

51 This report (Report) was prepared by the GSM Association using information and data from publicly available sources, as well as other reports authored by the GSM Association. In addition, for the purposes of the case studies on government services digitalisation (section 3.4 of the Report), the GSM Association also used information provided by Ernst & Young LLP. This information was part of a series of case studies prepared for our use by Ernst & Young LLP and the GSM Association assumes sole responsibility for the use of any extract or information in the Report.
52 Willie, J and Masinde, C. (2017). Home-grown technology firms help drive eGovernment expansion in East Africa. World Bank Blogs.
53 Government of Rwanda. National Strategy for Transformation (2017-2024).
54 World Bank DataBank. Values for 2018.
55 International Labour Office (2018). Women and men in the informal economy: a statistical picture. Third edition.
56 To access IremboGov, visit: https://irembo.gov.rw/rolportal/en/home.

Table 4

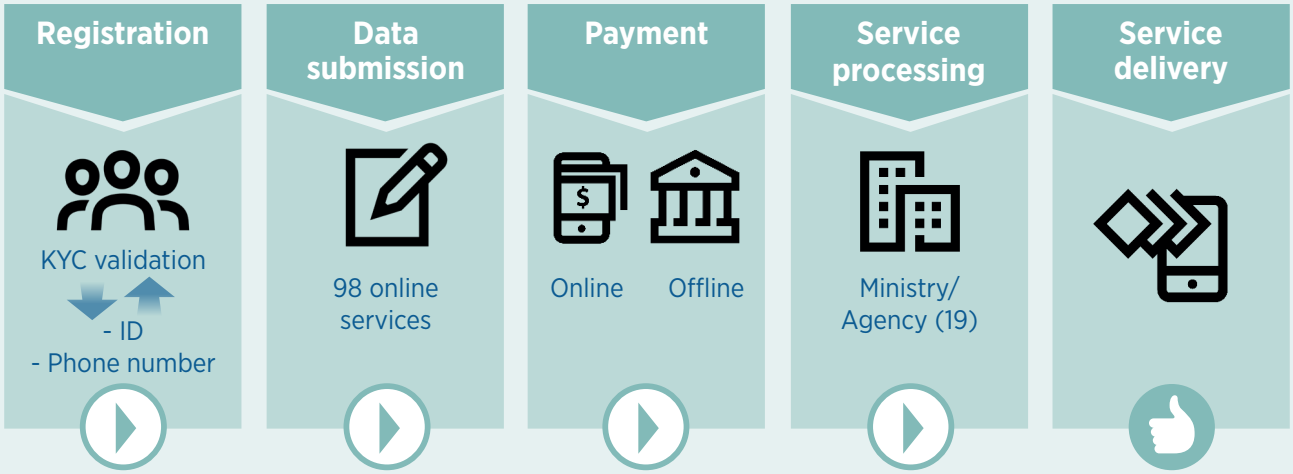
Selected IremboGov services by category

Civil status and ID	Land and real estate	Transport and driving	Tourism and foreigners	Health and education
Birth certificate, marriage certificate, application for national ID, e-passport application	Land transfer, land permit, building permit	Vehicle permit, traffic fines, driving license, registration for driving test, vehicle inspection	Visa application, tourist permit, visitor permit for national museums	Community-based health insurance, application for equating foreign qualifications for general and higher education

To request a service, users can connect to IremboGov directly using a digital channel — mobile or computer — or indirectly through one of the 4,000 IremboGov agents. Connecting to IremboGov requires a KYC (know your customer) validation, typically a form of national identification and an associated mobile phone number. After connecting, the user requests a service, submits required details and subsequently pays a fee using mobile money or one of the other payment options. Once the payment is successful, the service request is processed by the relevant ministry or agency. Where possible, the service is administered, finalised and delivered digitally. This is often the case for tourist or business visas, as well as certificates. For the delivery of other services, such as passports or national identification, the platform secures a window for an in-person appointment with the relevant public entity to receive the service.[57] For all services, IremboGov informs users about the status of their application through SMS.

Figure 5

IremboGov digital government services delivery process



Since its launch, IremboGov has administered an increasing number of successful service applications: from 1 million in 2017, to 5 million by 2019, and 8 million by 2020. In early 2020, about 200,000 to 300,000 service requests are successfully processed each month through the platform, up from 100,000 in 2017.[58]

Two methods of payment are available to users: offline and online. Online payments are processed in real time through mobile money (Airtel Money, MTN Mobile Money or Mobicash) or credit card. Offline payments are manual and administered through a mobile money agent or a bank, within 24 hours of a service request. For both methods, users provide a billing number generated by the platform. Online and offline payments for services are managed and triaged through an aggregated gateway which links participating financial institutions, including mobile money providers.

According to user data, online payments are the preferred modality for services on IremboGov, and represent 80% of all transactions on the platform.[59] Among these, mobile money is the preferred payment option, representing 55% of online payments. This marks a significant change from the early days of IremboGov, when 95% of payments were made manually, principally using cash at a bank.

57 As of March 2020, 31 IremboGov services were digitised end-to-end. Where possible, the remaining services will be also fully digitised.
58 Willie, J and Masinde, C. (2017). Home-grown technology firms help drive eGovernment expansion in East Africa. World Bank Blogs.
59 Rwanda Internet Governance Forum (2018). Accelerating the digital/ internet economy through e-commerce in Rwanda.

At the end of 2019, 99% of the country was covered by 4G mobile services, while 49% of the population was connected to mobile services.[60] Mobile money account ownership for Rwanda's adult population rose by 13%, leaping from 18.1% in 2014, to 31.1% in 2017.[61] In this context, mobile money is directly aligned with Rwanda's Vision 2020 ambitions for a cashless economy.[62] It holds enormous potential to boost the use of IremboGov services, allowing citizens to access the platform and pay directly from their mobile or through one of 102,181 mobile money agents spread across the country.[63] As mobile money transactions can be conducted via basic and feature phones, the service is also available to users without access to mobile internet (3G or 4G).

Key implementation steps

The development of IremboGov took approximately two years, and the site officially launched in July 2015, the result of joint efforts between the Government of Rwanda, particularly the Ministry of ICT and Innovation, and the Rwanda Development Board.

From a technical perspective, IremboGov includes three main application programming interfaces (APIs): identification, service database and payment. The system can access databases of multiple government institutions, including the national ID database, to query the type of service needed (e.g., to access the application for a driving license test).

Since its launch, the platform is constantly improving to integrate feedback and enhance the user experience by reducing the number of steps in a user pathway, increasing automation or decreasing the length of time required for a service. Irembo 2.0, the new version of the platform, has been created with local experts to allow more flexibility to adapt and improve the platform.[64] To maximise user adoption, the platform is available in three languages (local Kinyarwanda, English and French). However, there are a number of other factors that affect IremboGov's reach, including digital awareness and skills, convenient and dependable access to electricity, broadband connectivity such as through a mobile device, as well as affordability.[65] The need for public awareness campaigns, in particular during the early stages, is an important tool to increase adoption. [66]

Value of IremboGov for the government and citizens

The digital administration of public services and payments through IremboGov facilitates various benefits for both governments and users.

For the Government of Rwanda, IremboGov acts as an efficient, consolidated mechanism to improve government revenue. It provides clear pathways to pay for public services and state-administered resources, thereby increasing government revenue and reducing costs.

In terms of revenue, IremboGov increases the availability, accessibility and adoption of services by individuals and businesses alike. For example, the platform increased payments for compliance-related fees such as traffic fines, largely due to the convenient payment channels now available through the platform.

IremboGov generates cost savings for the government by reducing leakage and by decreasing administrative expenditures.[67] Because of IremboGov, operational costs associated with the administration and delivery of public services have fallen sharply.

IremboGov also yields efficiency gains through its coordinated whole-of-government model that streamlines interdepartmental services and fills costly information gaps prevalent across governments. Furthermore, the online payment functionality enables the immediate availability of funds for government authorities, reducing time lags from financial intermediaries.

As a one-stop portal, IremboGov increases transparency in how services are administered and paid for, offering both a detailed and big-picture lens on all public-service transactions in a way not previously captured through analogue and cash-dependent channels. The dual promise of micro-level and macro-level payment data enables a clear tracking of transactions, facilitating a system that is credible and reliable, and an approach less exposed to risks stemming from human error or leakage. The fully digitalised environment can help spot trends, equip officials with relevant data analytics and, in turn, provide opportunities for informed decision-making.[68]

60 GSMA Intelligence database. Data at Q4 2019.
61 World Bank (2018). Global Findex: Rwanda.
62 Musima P., et al. (2018). An evaluation of Rwanda Vision 2020's achievements.
63 National Bank of Rwanda (2019). Annual Report 2018-2019.
64 Republic of Rwanda, Ministry of ICT and Innovation (2020). Irembo kicks off phased migration of all services to its brand new platform.
65 Twizeyimana JD., et al. (2018). E-government in Rwanda: Implementation, Challenges and Reflections.
66 Karandaaz, CGAP, Dalberg (2016). Global landscape study on digitising P2G payments.
67 Ngabonziza D. (2019). Untold story of Irembo, Rwanda's one stop centre for gov't services.
68 Republic of Rwanda, Ministry of ICT and Innovation (2020). Irembo kicks off phased migration of all services to its brand new platform.

For users, the benefits of IremboGov are clear. The most pronounced among them is consistent, convenient access to government services from their mobile or computer at any time. Rather than having to travel to government offices during working hours, users can interact with government entities in a far more convenient, efficient and economical way. The fact that users can engage with more than one agency on the same platform in a consistent way adds another layer of convenience.

Linked to these advantages is the platform's widespread accessibility. Its mobile channel ensures access to USSD and app-based products, reaching feature and smartphone consumers, thereby catering to different socioeconomic groups. Furthermore, the platform is accessible within and beyond Rwanda's borders, which allows individuals who are not in Rwanda to apply for or pay for a service. International tourists wishing to visit Rwanda can simply submit a visa application virtually, without the need to travel to a consulate or embassy. Moreover, a Rwandan traveling overseas or living in the diaspora is able to apply for a local driver's license or marriage certificate from outside the country.

"IremboGov increases the availability, accessibility and adoption of services by individuals and businesses alike."

Case Study

3.4.2 Digitalisation of transport public services in Cambodia

Cambodia has one of the highest mobile penetration levels in Asia (67%)[69] and a low rate of financial inclusion (22%)[70], so the mobile sector plays a vital role in achieving the digital government objectives set out in the Government ICT Master Plan 2020. In recent years, Cambodia released several strategy documents promoting the development of digital government services, starting with the Rectangular Strategy Phase III 2013-2018.[71] In 2017, Cambodia's tax-to-GDP ratio (16%) was higher than the East Asia and Pacific average (12%).[72] Cambodia's economy is highly informal with informal employment representing 93% of total employment (2012), compared to 71% across East Asia and Pacific (2016).[73]

Mobile money as an enabler of digital transport public services

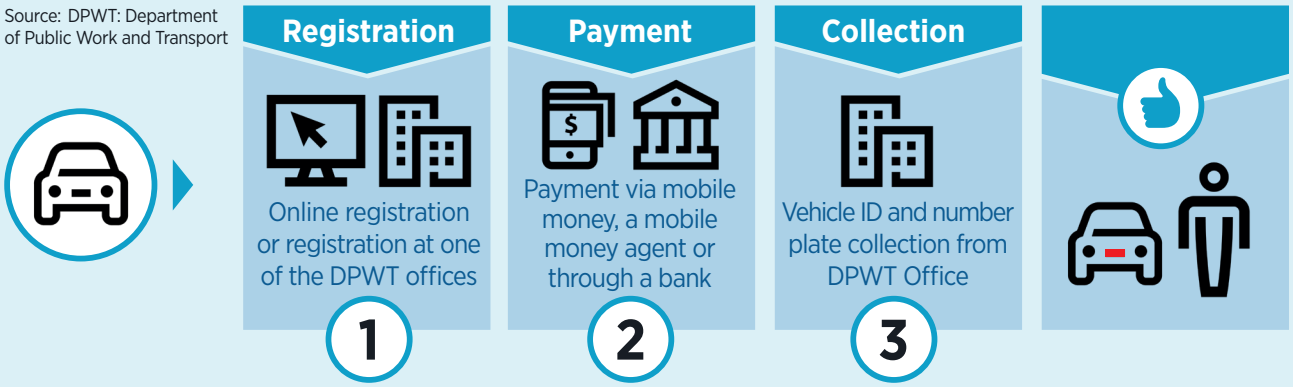
In 2017, the Ministry of Public Works and Transport (MPWT) launched an Automated Online Payment Gateway (AOPG) as part of an online platform making its services digitally available to citizens and businesses across Cambodia.[74] The introduction of this digital payment solution was one of the MPWT's top priorities to digitally deliver and facilitate payments for its services, including vehicle registration, driving licences, vehicle technical inspections and transport licences. This initiative was part of government-wide efforts to transform public services into digital services, driven by the ICT Master Plan 2020.

Mobile money providers play a key role in the digitalisation of MPWT services, offering an easy and secure mode of payment by mobile phone or by visiting a mobile money agent. Due to its wide-ranging benefits, mobile money is the most popular payment system for MPWT services, contributing greatly to the MPWT's digital transformation. To access MPWT's digital services, citizens connect to the dedicated digital platform through their smartphone, laptop or from one of the 26 Department of Public Work and Transport's (DPWT) offices in Phnom Penh and all provinces. Citizens can also go to one of two MPWT one-stop shops in Phnom Penh and Sen Sok shopping malls for individual support. Official vehicle dealers also provide support for the digital vehicle registration process. Users register on the platform by providing their name, email and phone number. Once they provide personal and vehicle information with the required documents, users proceed with the payment through one of two payment methods. Upon completion of the digital service request and payment, users travel to the DPWT office to collect their vehicle number plate, driving licence or transport licence, or to receive their technical inspection. As an example, the figure below describes the process to acquire a number plate for a new vehicle.

Figure 6

Vehicle number plate registration process for a new vehicle in Cambodia

Source: DPWT: Department of Public Work and Transport



69 In 2018, Q4. The unique subscriber penetration refers to individuals that have subscribed to a mobile service. Some individuals might hold multiple mobile connections. Source: GSMA Intelligence database.
70 In 2017. Source: Demirgüç-Kunt, Asli, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess (2018). The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution. World Bank: Washington, DC.
71 World Bank (2018). Benefiting from the digital economy, Cambodia policy note.
72 World Bank DataBank.
73 International Labour Office (2018). https://www.ilo.org/global/publications/books/WCMS_626831/lang--en/index.htm. Third edition.
74 Ministry of Public Works and Transport (MPWT): https://www.mpwt.gov.kh/en/public-services/vehicle-registration

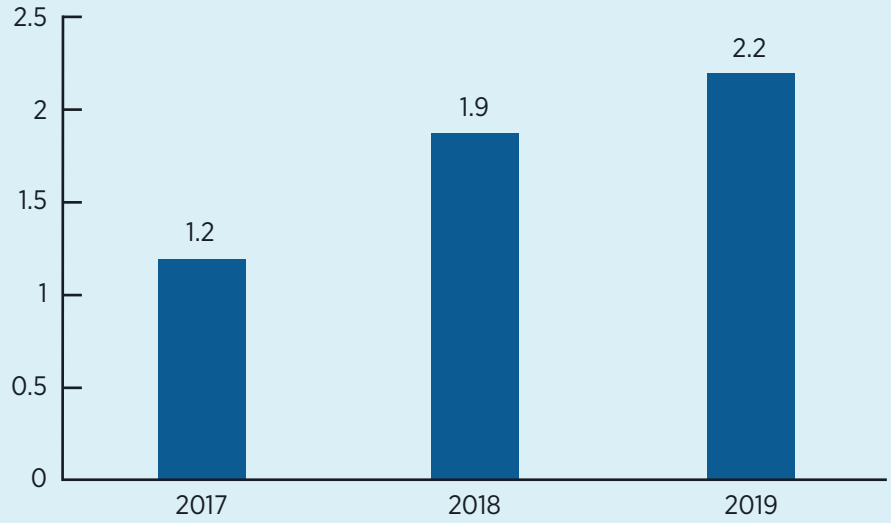
Due to its wide-ranging benefits, mobile money is the most popular payment system for MPWT services, contributing greatly to the MPWT's digital transformation.

Since the launch of digital services, users have two payment options: via mobile money (DaraPay, Ly Hour, SmartLuy and Wing) or through a bank. Mobile money payments can be done directly from the user's mobile phone or through one of the mobile money agents spread across the country. Bank payments are made at one of the bank's offices. For both methods, users have to quote their billing number generated by the platform. As of March 2020, four mobile money providers and two banks collect payments for the MPWT.[75] Payments via mobile money represent about 85% of total payments to MPWT while the remaining 15% are processed by banks. Payments through mobile money agents are particularly popular. The fee of each service is transparently displayed on the platform and includes the payment fee.

Between 2017 and 2019, the number of digital transactions per year increased steadily from 1.2 million in 2017 to 1.9 million in 2018 and 2.2 million in 2019.[76] As of March 2020, the AOPG processes an average of 2,500 payments per day, mainly from urban users and from Phnom Penh in particular. The direct integration of the AOPG with mobile money providers and banks provides a real-time settlement of payments made by citizens. The increase in service transactions suggests that users positively received the new digital service and payment system.

Figure 7

Total number of digital transactions per year on MPWT digital platform (million)



Source: Ministry of Public Works and Transport of Cambodia

75 Mobile money providers: DaraPay, Ly Hour, SmartLuy, Wing; Banks: Cambodia Public Bank, Acleda Bank.
76 The increase in number of transactions does not reflect the actual number of users as each user can use multiple public services can use multiple public services such as vehicle registration, driving licences, vehicle technical inspections and transport licences.

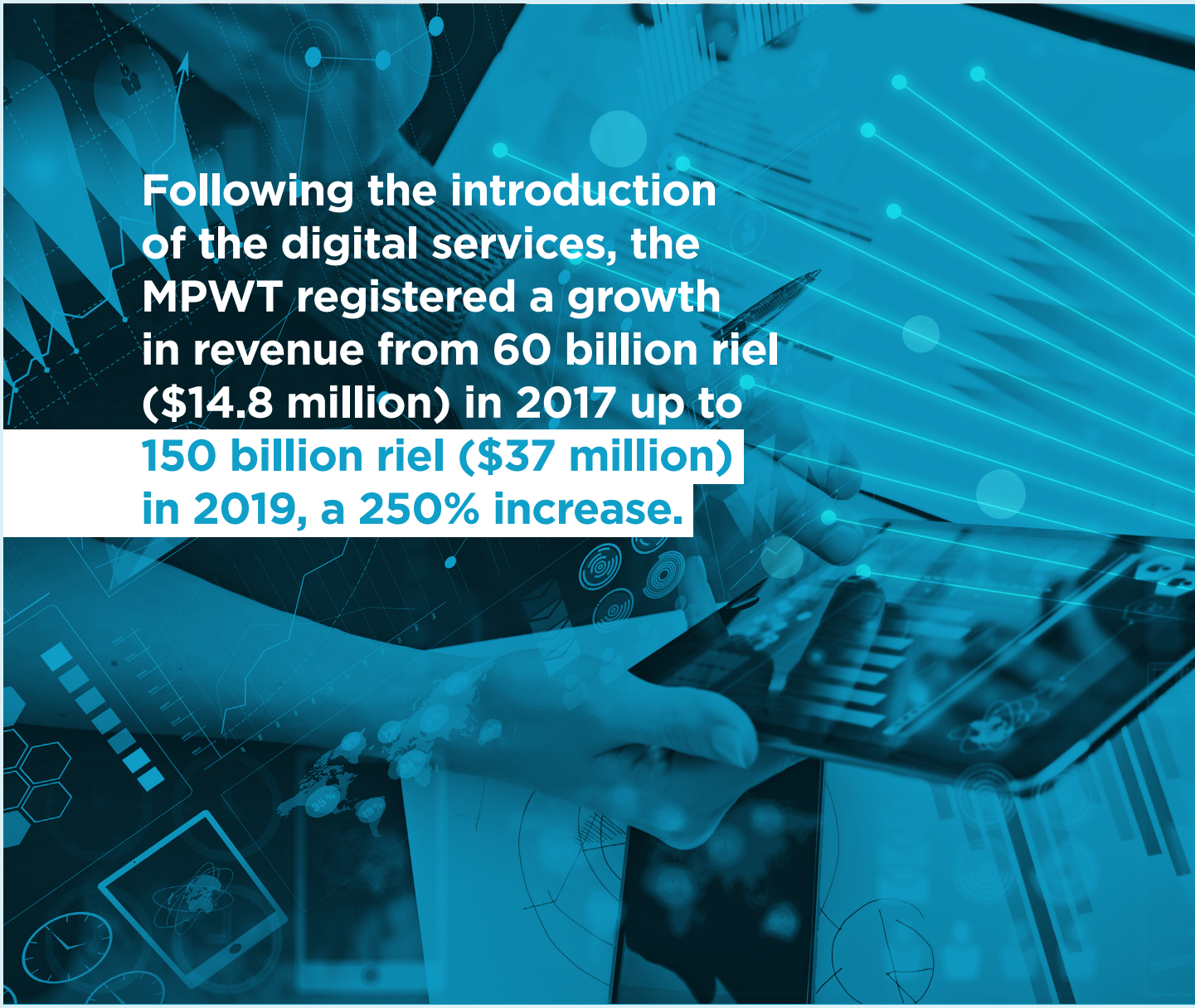
Key implementation steps

Initiated in mid-2016, the development of the AOPG took six months and was launched on 30 January 2017. It is the result of the joint work of the MPWT with the support of financial institutions including mobile money providers and banks. The initial development cost was about $4 million, and the platform has an annual operating cost of about $500,000.

As a first step, the MPWT developed its strategic vision based on digital payment systems offered by financial institutions in other countries. The focus was on developing a secure, reliable and user-friendly solution with limited human and financial resources.

The MPWT developed a standard API enabling mobile money providers and banks to integrate. The platform was designed to be maintained by internal staff and require minimal external support.

Looking ahead, the MPWT sees further opportunities to improve current digital services and digitalise other services such as the penalty fee system for overweight trucks.



Following the introduction of the digital services, the MPWT registered a growth in revenue from 60 billion riel ($14.8 million) in 2017 up to 150 billion riel ($37 million) in 2019, a 250% increase.

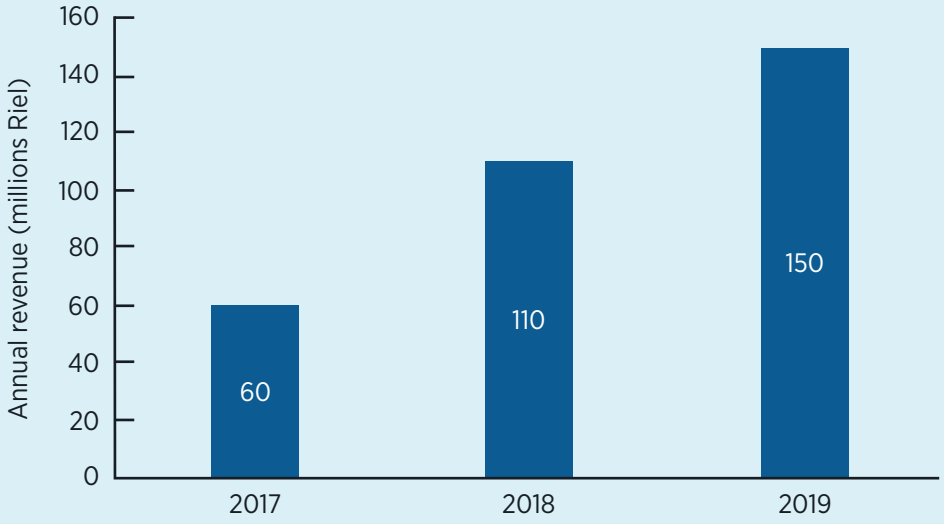
Benefits of digitalised payments and public services

For the MPWT, the digitalisation of its services and payments brought the following benefits:

- Following the introduction of the digital services, the MPWT registered a growth in revenue from 60 billion riel ($14.8 million) in 2017 up to 150 billion riel ($37 million) in 2019, a 250% increase (Figure 8). This followed from an increase in service requests as mentioned above, where the launch of the digital platform triggered an increase in compliance as illustrated by the increase in total digital transactions from 2017 to 2019. Moreover, the AOPG records all payments from users, which improves revenue transparency and eliminates opportunities for corruption.
- The AOPG improved public finance management. Thanks to digital payments, the settlement of service fees is processed instantaneously allowing the MPWT to monitor and manage its accounts more accurately. The digital record of fee settlement minimises the need for manual retention of documents and improves financial planning. In addition, digital payments make funds immediately available to the MPWT.
- The introduction of digital services led to a significant reduction in administrative costs, such as printing, stationery and labour costs. MPWT staff who were in charge of processing the service applications in paper format have been assigned to new tasks such as monitoring and evaluation.

Figure 8

Ministry of Public Works and Transport annual revenue (billion Riel; 2017-2019)



Source: Ministry of Public Works and Transport of Cambodia

- The platform provides easy access to transaction data and improves data reliability. The platform generates data (e.g., on usage or payments), which the MPWT can analyse to improve its services.

- The digitalisation of services coincides with an increase in compliance, which could be motivated by multiple factors. For example, the new platform makes it simpler and cheaper for users to request MPWT services, as detailed below. Digital payments bring transparency to the transactions, positively impacting public trust in government service delivery.

For citizens, the digitalisation of MPWT services and payments brought the following benefits:

- Digitalisation has brought ease of access and convenience to users. Users can access services from anywhere with an internet connection, removing the physical need to travel to request a service. MPWT digital services are available 24/7. The process is designed to be simple and user friendly. The application and payment are processed in real time.

- Citizens also save time and money. The new system no longer requires citizens to travel to an MPWT office and queue, saving time, which can be dedicated to productive tasks, for example.

- The AOPG brings standard and transparent fees. The digital platform displays the standard fees for each service in full transparency. Thanks to the digital mode of payment, citizens only pay the standard fee and additional side payments no longer exist.

4. Lessons learned for successful implementation of digital P2G payments

Digitalising P2G payments through mobile money remains a significant untapped opportunity globally. As illustrated in this report, it is a cost-effective solution that yields beneficial outcomes for governments, citizens, businesses and the broader economy. Mobile money also enhances national resilience during periods of crisis, as evidenced during the COVID-19 crisis.[77]

Based on our analysis of mobile money P2G payments throughout low- and middle-income countries, we recommend that governments consider the following points as they advance their digitalisation strategies.

- **Define a clear strategy supported at the highest level.** When governments have a digitalisation strategy that is led and evangelised by a high-level champion, the transition to digital payments becomes easier. A clear objective supported by technical leadership and political will remove barriers, allowing stakeholders to be mobilised more quickly and problems to be overcome more effectively. In the cases of Rwanda and Cambodia, governments gave their full support, appreciating how the transition to digital public payments and services is linked with the national digital strategy. Allocation of specific budget and human resources for the initiative is also essential to drive the project to completion in a timely way.

- **Conduct a landscape study of government services to identify the most promising opportunities.** Multiple types of payments to public entities can be digitalised — from utility services to education fees, public services and taxes. Non-complex, high-demand and high-frequency services should be digitalised first. Users will more easily adapt simple payment habits and then transition to more complex ones. As highlighted in section 3.2, the most popular payments to start digitalising using mobile money are utility services, education and public services.

- **Digitalise services end to end.** To reap the full benefits of digitalisation, government services should be digitalised from start to finish. Furthermore, a streamlined technical integration can boost the digitalisation of P2G payments.[78] In Rwanda and Cambodia, for example, users can digitally request, pay for and, where possible, receive the public service.

77 Muthiora, B. (2020), Mobile money recommendations to central banks in response to COVID-19. GSMA.

78 A description of common technical integration methods is available in Wasunna, N., et al. (2019). Championing a unified digital person-to-government (P2G) payments strategy. Lessons from Orange P2G operations in Africa. GSMA.

- **Support expansion and usage of connectivity.** Governments should support the access and usage of connectivity as it is key for a successful adoption of digital government services. While the coverage gap (7%) is declining globally, the usage gap (44%) remains a challenge for the development of connectivity.[79] Globally, 44% of the global population do not use mobile internet even though they live in an area covered by at least one mobile broadband network (2019). In Sub-Saharan Africa, Latin America and South Asia, the usage gap represents 49%, 39% and 61% respectively (2019).[80] One of the main barriers to access mobile connectivity is the lack of affordability. In many low-and middle-income countries, the mobile sector is subject to sector-specific taxes, in addition to general taxes, which contributes to the lack of affordability. Improving affordability by alleviating the tax burden faced by consumers would lead to higher level of connectivity.[81]

- **Implement user-friendly digital payments and services accessible by all.** A government service with a simple and user-friendly digital process drives a higher adoption from citizens, as it is more convenient and inspires trust. The citizen journey to request, pay for and receive the digital government service should be constantly monitored in order to improve the user experience, which will drive usage and adoption. User feedback should be collected continuously, as this provides a rich source of information to improve the service.

- **Adopt measures to improve awareness and usage of digital government services and payments.** Among the barriers that hinder user adoption, the lack of awareness and the lack of digital skills deserve particular attention. Public awareness campaigns play a vital role in increasing adoption, in particular at early stages of the launch. Public entities should ensure that citizens have access to assistance, to maximise service uptake. In Rwanda, citizens are supported by a network of 4,000 Irembo agents.

Building digital public services and payments to governments brings significant benefits to all parties. In addition to saving time and expense for citizens and businesses, it also benefits governments by making service delivery more efficient and accessible, increasing government revenue and unlocking cost savings. Against the backdrop of COVID-19, digitalisation of P2G payments using mobile money will contribute to the resilience of governments and economies during challenging times. Governments should accelerate the digitalisation of P2G payments to weather external shocks and to unlock myriad social and economic benefits.

79 The usage gap refers to those that live within the footprint of a mobile broadband network but are not using mobile internet. The coverage gap refers to those that do not live within the footprint of a mobile broadband network.
80 GSMA (2020). The state of mobile internet connectivity 2020.
81 GSMA (2019). Rethinking mobile taxation to improve connectivity.

"Against the backdrop of COVID-19, digitalisation of P2G payments using mobile money will contribute to the resilience of governments and economies."

Appendix

Appendix 1:

List of active mobile money P2G payment categories across selected countries (2019)

A person-to-government (P2G) payment category is considered as active when mobile money payment is enabled for at least one government service of that category.

								Utility		
Country	**Region**	Education	Taxes	Public Services	Transport	Utility	Other	Electricty	Water	Gas
Argentina	Latin America	●	●	●	●	●	–	●	●	●
Armenia	Asia	–	●	●	–	●	–	●	●	●
Bangladesh	Asia	●	–	–	●	●	–	●	●	●
Bolivia	Latin America	–	–	●	●	●	–	●	●	–
Botswana	Sub-Saharan Africa	●	●	–	●	●	–	●	●	–
Burkina Faso	Sub-Saharan Africa	●	●	●	–	●	–	●	●	–
Burundi	Sub-Saharan Africa	●	●	●	●	●	–	●	●	–
Cambodia	Asia	–	●	–	●	●	–	●	●	–
Cameroon	Sub-Saharan Africa	●	●	–	●	●	–	●	●	–
Congo	Sub-Saharan Africa	–	●	–	–	●	–	●	●	–
Congo, Dem. Rep. of	Sub-Saharan Africa	●	●	–	–	–	–	–	–	–
Côte d'Ivoire	Sub-Saharan Africa	●	●	●	●	●	●	●	●	–
Egypt	Middle East and North Africa	–	–	–	–	●	–	●	●	●
El Salvador	Latin America	–	–	–	–	●	–	●	●	–
Gambia	Sub-Saharan Africa	–	–	–	–	●	–	●	●	–
Georgia	Asia	–	●	●	–	●	–	●	●	–
Ghana	Sub-Saharan Africa	●	●	●	–	●	–	●	●	–
Guatemala	Latin America	–	–	–	–	●	–	●	●	–
Guinea	Sub-Saharan Africa	●	●	●	●	●	–	–	–	–
Haiti	'Latin America	–	–	–	–	●	–	●	●	–
Honduras	'Latin America	–	–	–	–	●	●	●	●	–
India	Asia	–	●	–	●	●	–	●	●	●
Jordan	Middle East and North Africa	●	●	●	●	●	–	●	●	–
Kenya	Sub-Saharan Africa	●	●	●	●	●	–	●	●	–
Lesotho	Sub-Saharan Africa	●	●	–	–	●	–	●	●	–
Liberia	Sub-Saharan Africa	●	●	●	–	●	–	●	●	–
Maldives	Asia	–	–	–	–	●	●	●	●	–
Mali	Sub-Saharan Africa	●	–	–	●	●	–	●	●	–
Nepal	Asia	●	–	–	–	●	–	●	●	–
Niger	Sub-Saharan Africa	●	–	–	–	●	●	●	●	–
Nigeria	Sub-Saharan Africa	–	–	–	–	●	–	●	●	–
Pakistan	Asia	●	–	●	●	●	–	●	●	●
Paraguay	Latin America	–	●	●	–	●	●	●	●	–
Peru	Latin America	–	●	–	–	●	–	●	●	–
Philippines	Asia	–	●	●	●	●	–	●	●	–
Rwanda	Sub-Saharan Africa	●	●	●	●	●	–	●	●	–
Senegal	Sub-Saharan Africa	●	–	●	–	●	–	●	●	–
Sierra Leone	Sub-Saharan Africa	–	●	–	–	●	–	●	●	–
Somalia	Sub-Saharan Africa	●	●	●	●	●	–	●	●	–
Sri Lanka	Asia	●	–	–	–	●	–	●	●	–
Tanzania	Sub-Saharan Africa	●	●	●	●	●	–	●	●	–
Togo	Sub-Saharan Africa	●	●	●	●	●	–	●	●	–
Tunisia	Middle East and North Africa	●	–	–	●	●	–	●	●	–
Uganda	Sub-Saharan Africa	●	●	●	●	●	–	●	●	–
Zambia	Sub-Saharan Africa	●	●	–	–	●	–	●	●	–
Zimbabwe	Sub-Saharan Africa	●	●	●	●	●	–	●	●	–

gsma.com

To download this report, please visit
gsma.com/digitalising-person-to-government-payments

GSMA HEAD OFFICE
Floor 2
The Walbrook Building
25 Walbrook
London EC4N 8AF
United Kingdom
Tel: +44 (0)20 7356 0600
Fax: +44 (0)20 7356 0601