

# THE STATE OF INSTANT AND INCLUSIVE PAYMENT SYSTEMS IN AFRICA

## SIIPS 2022 - CASE STUDY

GHIPSS INSTANT PAY



## Origin story

### Challenge

**Financial inclusion and cash reliance, a challenge in Ghana.** Historically, Ghana has been characterized by low levels of financial inclusion. In 2011, only 29% of the population owned a bank account at a formal financial institution or mobile money provider, and bank branch coverage was 4.8 branches per 100,000 adults in Ghana (World Bank, 2021a). In 2005, the Bank of Ghana (BoG) identified key constraints that needed to be addressed to improve inclusion. The first was that banking services were considered relatively exclusive and inaccessible: most banks were only present in three of the 16 regions within Ghana, banking services were not available 24/7, and electronic payments were only available in areas with stable electricity supplies (Stakeholder interviews, 2022). Secondly, the Ghanaian economy relied heavily on cash as a medium of exchange (Boeteng, 2020). Such reliance resulted in undesirable outcomes for the Ghanaian economy, including the loss of audit trails, high costs, and increased risks of theft (Stakeholder interviews, 2022).

### Value addition

**Faster real-time payments to drive inclusion and economic growth.** In response to these issues, the Bank of Ghana sought to pursue a series of reforms to promote a financial inclusion and “cash-lite” agenda in Ghana (Boateng, 2018). One of the key tenets of these reforms was the proposed development of a payment system. While the central bank initially sought the involvement of the banking sector, the central bank struggled to obtain significant buy-in from these institutions (Stakeholder interviews, 2022). As such, in 2007, the Central Bank empowered Ghana Interbank Payments and Settlement System (GhIPSS), a wholly-owned subsidiary of the Bank of Ghana, with a mandate to develop and manage interoperable payment infrastructures in Ghana (Bank of Ghana, 2020b; GhIPSS, 2021a). As part of this mandate, and in response to a growing appetite for faster retail payments within Ghana, GhIPSS led the development and launch of the GhIPSS Instant Pay (GIP).

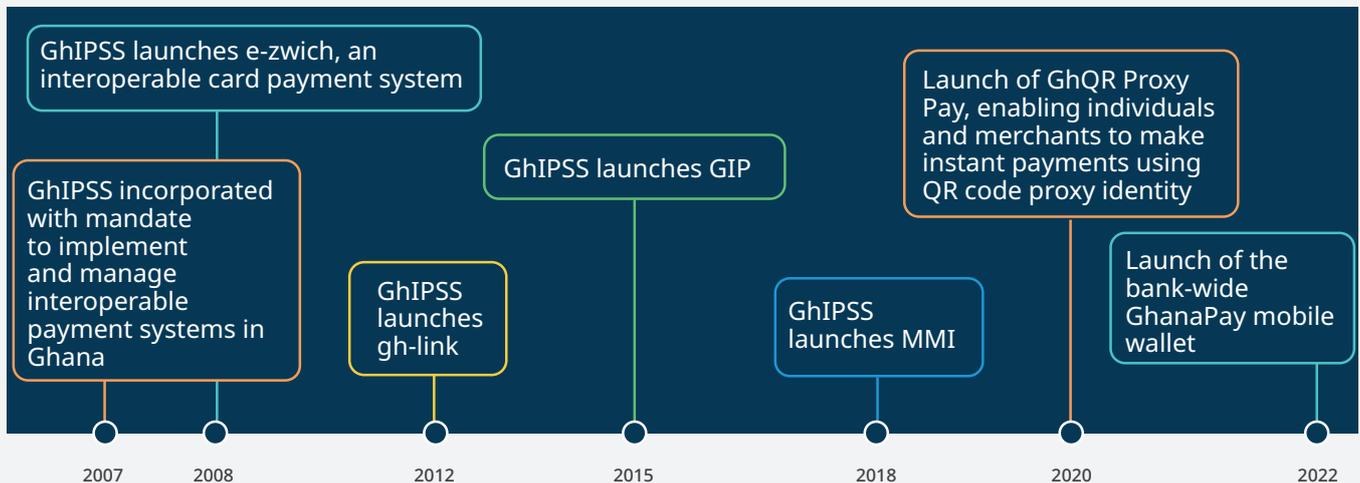


## Timeline

**Steady build to enhance functionality.** The first digital platform built was the e-zwich smart card solution in 2008. e-zwich is a biometrically enabled card that enables users to conduct banking services with any other e-zwich-enabled bank via an ATM. In August 2009, GhIPSS implemented the digitization of the clearing infrastructure known as Cheque Codeline Clearing with Cheque Truncation which equalized the check clearing cycle nationwide, reducing it from 3–10 days to just 24 hours. In June 2011, GhIPSS enhanced its service offerings to banks on the clearing infrastructure by adding the Automated Clearing House (ACH) services. The settlement underlying the direct credit for interbank account-to-account electronic funds transfer and the direct debit for interbank collections was sped up from a 24-hour window to a near-real-time window in a maximum of 15 minutes. In 2012, GhIPSS launched the ghlink, Ghana's interbank switching and processing system, which interconnects financial institutions and systems of third-party payment service providers. gh-link is a local electronic payment ecosystem based on the domestic ATM card with channels such as ATM, POS, and Browser.

In August 2015, leveraging the existing gh-link infrastructure, GhIPSS launched its real-time payment service called GhIPSS Instant Pay (GIP). The platform permits the real-time clearing of low-value, interbank transactions. In parallel, GhIPSS launched the Mobile Money Interoperability (MMI) service which facilitates instant transactions between all mobile money providers. MMI is connected to GIP, allowing interoperability between mobile money and bank accounts as well. In 2020, GhIPSS again leveraged the GIP platform to introduce Ghana's universal QR code solution (GhQR) and the Proxy Pay service. GhQR creates interoperability at merchant locations by allowing businesses to receive payments from different customer funding sources without the need for an expensive POS. Proxy Pay allows businesses and individuals to link proxy IDs to their bank accounts. Limited buy-in from financial institutions at the start of the service slowed the initial process of on-boarding; however, the system has since grown to include all 23 banks, 25 payment service providers (fintechs and mobile money operators (MMOs)) and four savings and loans companies.

**FIGURE 1. GIP timeline**



## Governance and operations

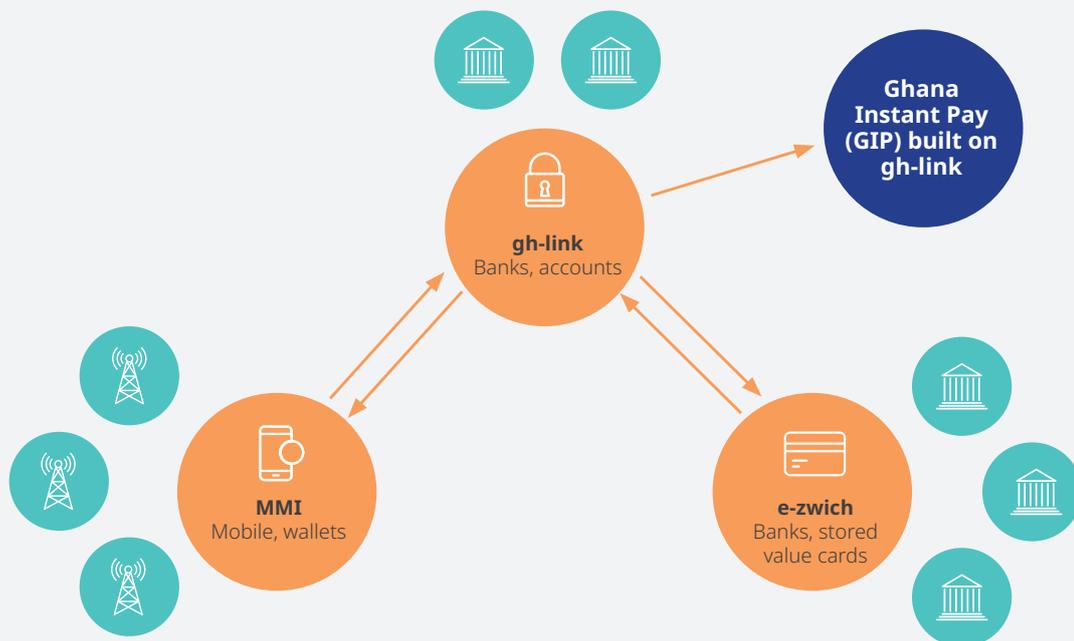
### Payment system overview

#### A three-tiered instant payments ecosystem in Ghana.

The payments interoperability system in Ghana, dubbed by GhIPSS as the “financial inclusion triangle”, comprises the three independently interoperable systems (the MMI system, the e-zwich biometric card platform, and gh-link).

By connecting these three independent schemes, GhIPSS has created an ecosystem of interoperability between all the channels and platforms, with ghlink being the center piece, as it is the foundational switch that connects electronic payments in the banking industry.

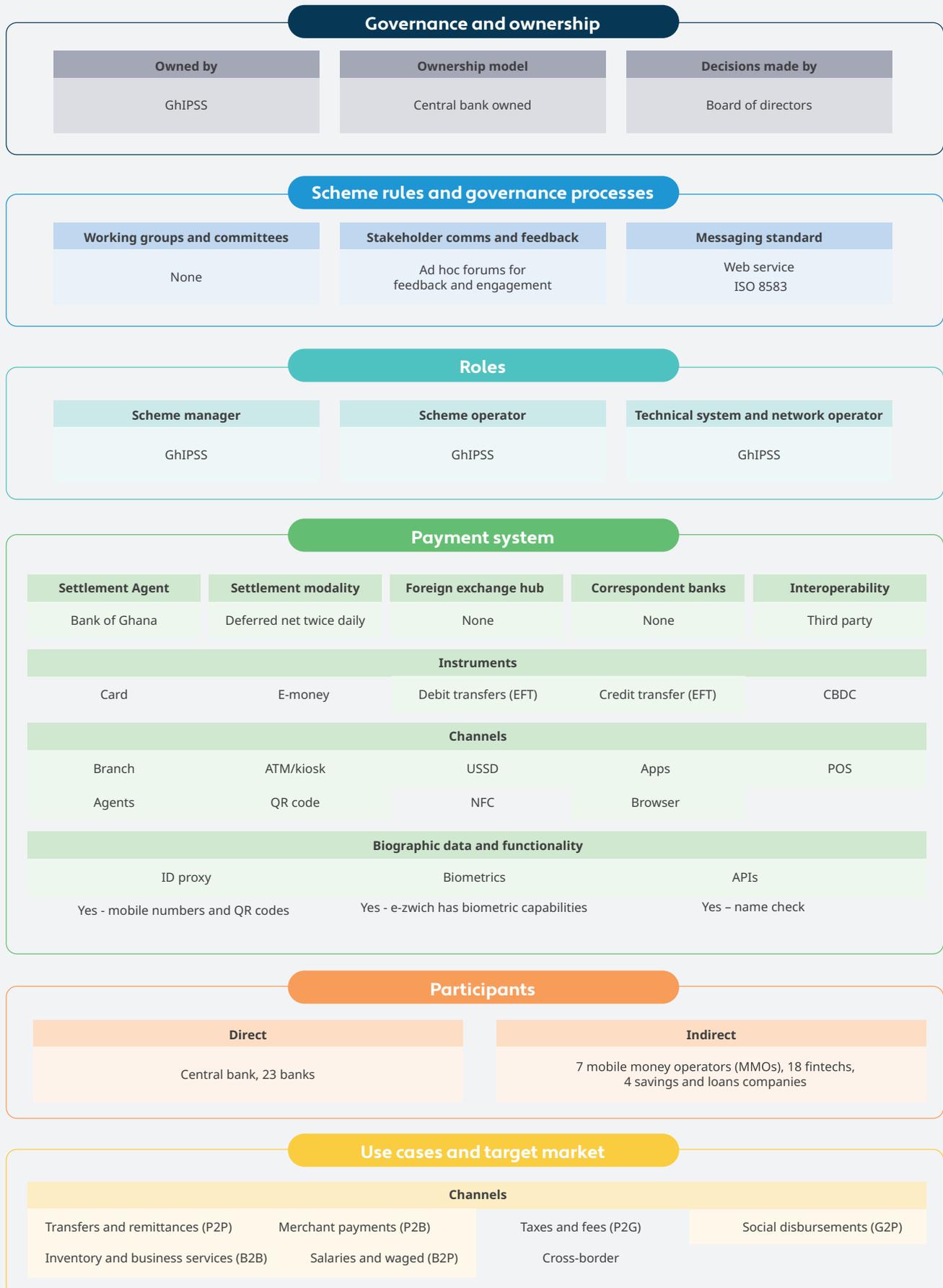
**FIGURE 2. Complete Ghana system view**



This broad interoperability ecosystem now includes all 53 financial institutions, with banks participating directly while e-money issuers (EMIs), payment service providers (PSPs) and savings and loans companies are participating through a sponsoring bank. As such, there is full interoperability between all licensed financial institutions at a systems level

in Ghana as illustrated above. MMOs clear between each other using the MMI switch. The mirrored trust accounts held by the MMOs transact bank to bank via gh-link. The transactions are then settled through the real-time gross settlement system (RTGS) if the accounts are not held at the same bank.

FIGURE 3. GIP model overview



## Governance structure

**Building toward a more inclusive ownership and governance structure.** Decisions in relation to GIP are managed by the GhIPSS board of directors, which consists of nine members, with the chairman being the Governor of the BoG. Banks are represented on this board through a seat held by the president of the Ghana Association of Bankers. The bulk of the decision-making power surrounding payment system infrastructures currently resides within the central bank. At the outset of GhIPSS, BoG envisioned ownership to include a stake for the participants; however, interest from banks was initially limited. As the reliance of financial institutions on the central switch has grown, so too has participant interest in an ownership stake. As such, GhIPSS is currently devising a plan to issue shares to participants (Stakeholder interviews, 2022). The preferred model for the new ownership structure is to have banks as majority shareholders. The central bank plans to grant bank participants greater representation at the board level with the objective of deepened involvement in the decision-making process and catalyzing the development of innovative products and services for the population (Marcopolis, 2018). The central bank would retain a small stake in GhIPSS, permitting them to ensure that the payment system continues to be provided as a public good and that it supports financial inclusion objectives.

## Functionality

**Convenience as a driver of adoption.** Enabling features for recurring usage of the system include 24/7 availability, as well as the existence of multiple interoperable payment channels and instruments. GhIPSS can be accessed through both physical and digital channels: branches, ATMs, agents, web, applications, and USSD. The launch of GhQR, permitting the use of QR codes as a means of payment, has further expanded access to GIP and streamlined P2B merchant transactions without requiring user acquisition of additional hardware or software. GIP is integrated into GhIPSS and is usable across mobile money and bank account transfers.

## Technical standards and use cases

**Accessible via all channels and instruments.** GIP caters for various use cases, including, P2P, P2G, G2P, B2B, P2B, and B2P. There are two settlement windows (12:00 AM and 12:00 PM). The processing time is a maximum of 40 seconds; but, in practice, a transaction requires between five and ten seconds. Messages are sent using web service fully or a combination of web service and

ISO 8583 standard. Importantly, being part of Ghana's "financial inclusion triangle", GIP is connected to the mobile money and card interoperability networks, providing full interoperability across channels and instruments.

## Business model

**GIP established as a cost-recovery business.** Banks charge consumers a 1% fee on all transactions, with 30% of these fees being routed to GhIPSS and the remaining 70% being retained by the sending financial institution. MMOs charge a 2% fee on all transactions. The cost-sharing modalities with GIP are unclear.

## Scheme rules

**Scheme rules requiring adherence to various bodies of legislation and regulation.** Participants in the scheme require a license from the Bank of Ghana to operate, which may be revoked or suspended if a participant is found to be in contravention of scheme rules. Participants must also adhere to 24/7 uptime requirements, including a 40-second response time for receiving institutions (Stakeholder interviews, 2022). Participants are further required to adhere to a compliance framework defined in the Payments Systems and Service Act of 2019, which prescribes various risk-control, anti-money laundering (AML), combatting the financing of terrorism (CFT), and customer due diligence (CDD) requirements. Moreover, participants must adhere to the recourse requirements defined in the Consumer Recourse Mechanism Guidelines for Financial Service Providers Framework defined by the Bank of Ghana.

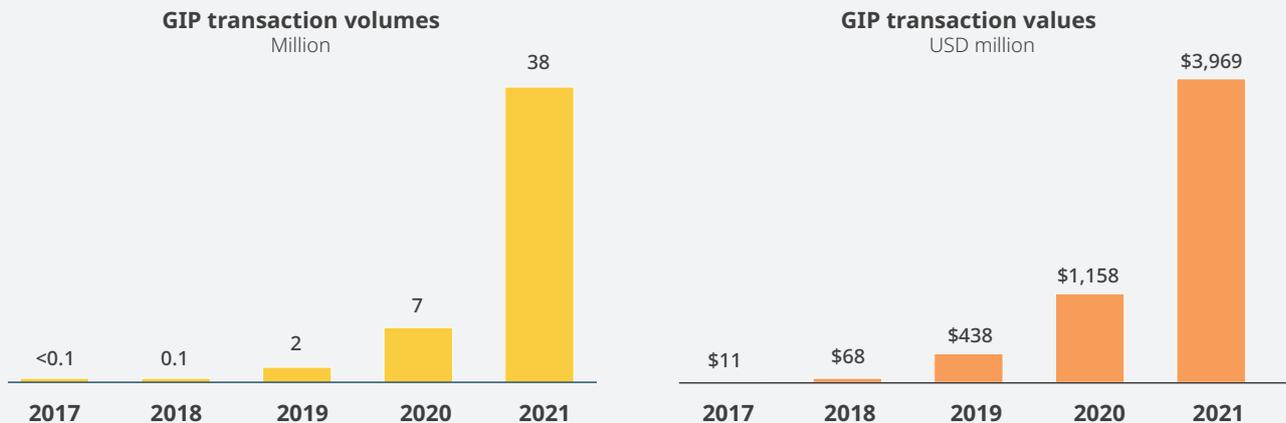
## Volumes and values processed by the payments system

**Rapid growth in usage since 2019.** As shown in Figure 25, while the system had slow uptake in transaction volumes and values from 2017 to 2019, GIP has shown a substantial increase in both metrics from 2019 onwards. In the wake of the COVID-19 pandemic and in line with the Digital Financial Services Policy 2020, the Bank of Ghana published measures aimed at promoting digital forms of payments that were retained for the duration of 2020; these included simpler, minimum KYC requirements for mobile money accounts and increased transaction limits (Bank of Ghana, 2020a).<sup>1</sup> The average transaction size per year has decreased from USD 253 (GHS 1,998) in 2019 to USD 105 (GHS 829) in 2021, which indicates that end-users are transitioning smaller ticket sizes to GIP.<sup>2</sup>

<sup>1</sup> The BoG allowed MNOs to use existing SIM registration details for on-boarding customers to basic mobile wallets.

<sup>2</sup> Ghanaian cedi converted to USD using an exchange rate of USD 1 = GHS 7.9 as of 7 June 2022.

FIGURE 4. GIP volume and values of transactions



Source: Bank of Ghana, 2020; GhIPSS, 2021b

## Regulation

Ghana's payments system has undergone significant transformation over the past two decades, as the country has looked to transition from cash to a digital payments ecosystem (Bank of Ghana, 2022). The Payment Systems Act, 2003 (Act 662) took the first step toward digitization, as it provided a legal foundation for digitization of interbank payments. Since then, several important enabling pieces

of regulation have been developed, such as the branchless banking guidelines (2008), the Electronic Money Issuers Guidelines (EMIG), and AML-CFT Act (2020), which has introduced the concept of digital customer due diligence (CDD). The 2019 Payments System and Services Act comprehensively addresses the participation of diverse providers such as fintechs and EMIs (Bank of Ghana, 2020b).

## Inclusivity learnings

**Progressed level of inclusivity.** Measured by the inclusivity criteria in Chapter 2.6, Ghana's combination of three national systems (the inclusion triangle) has a progressed level of inclusivity. In addition to the basic IIPS criteria, it has inclusive functionality, supporting the most used channels and essential use-cases (P2P and P2B). With updates to its model to allow more bank ownership and decision-making power by banks and non-bank PSPs, it would also be able to achieve inclusive governance.

The following learnings emerged in the design and rollout of GIP:

- Clarity of rules is important to ensure the customer experience is not compromised.** Initially, member banks were able to be onboarded onto GIP if they allowed for either payment origination, receipt, or both. Originating banks were also able to determine the implementation timeline for receipt, and vice versa. This resulted in a poor service for customers, as numerous onboarded financial institutions had partial functionality, only able to send or receive instant funds, despite being participants of GIP. This highlights the importance of making both origination and receipt capabilities mandatory to become a live participant of the system, with clarity for transaction clearing time and funds availability to customers.
- Hub-to-hub model can improve industry buy-in, scalability, and lower costs.** A key decision faced by payment system operators is what model of interoperability to pursue. The hub-to-hub model as an inter-switching layer between hub-switch models in Ghana requires three facets of payments infrastructure with a larger upfront investment. However, given the complementary reach of each component, the numerous participants, and independent viability, it was an efficient route.

Moreover, it is relatively easier to scale, as participants can negotiate jointly on interoperability, rather than relying on independent interoperability agreements.<sup>3</sup> In the case of Ghana, the hub-to-hub model was appropriate for industry participants and increased buy-in as it removed the need for various inter-party arrangements with different technical requirements and standards. It was able to rapidly scale due to backing from the central bank and integration of various channels and payment modalities.

- **Multiple overlay services and channel offerings improve access and adoption.** In the years following the launch of GIP, GhIPSS has gradually expanded the channels that can be used to access interbank transfers via GIP payment rails. This has substantially expanded the reach to consumers and increased adoption of instant payments in Ghana. Allowing customers to access GIP by using their

mobile phones through apps and USSD interfaces has reduced the reliance on bank cards. Moreover, the development of the GhQR overlay service—which permits customers to pay using QR codes—has allowed merchants to accept payments and to receive their earnings in real time without requiring the upfront investments of POS hardware. The Bank of Ghana is planning to provide participants with an ownership stake and board seats in the entity with the goal of improving the level of adoption of various products and services.

- **The structure of ownership is an important driver of inclusion.** Currently, the entity responsible for oversight of the instant payments system—GhIPSS—resides within the Bank of Ghana. This empowers the Bank of Ghana with the ability to protect the public good nature of the system and to ensure that it remains as inclusive as possible.



<sup>3</sup> Hub-switch model refers to a model with a central hub that each participant connects to, thereby facilitating connections between the participants. It simplifies the process of connecting and removes the need for multiple bilateral connections between institutions.



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