



REPUBLIC OF GHANA

Toward a Cash-Lite Ghana

Building an Inclusive Digital Payments Ecosystem



DIGITAL PAYMENTS ROADMAP





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ACKNOWLEDGMENTS

This Roadmap has been prepared with the help of various stakeholders and partners dedicated to digitization of financial services and financial inclusion. The government of Ghana wishes to acknowledge the galvanizing role that these bodies and individuals played in bringing the Ghana Digital Roadmap to fruition.

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Foreword

In recent times, Ghana has embarked on a conscious drive to digitize the whole economy under the World Bank–sponsored e-Transform project. This initiative is being undertaken to promote efficiency in, and coverage of, government business and service delivery in all areas, especially education, health, and judicial and parliamentary services, through the use of information and communication technologies (ICT). Central to the transformation vision is the establishment of a robust identification and verification system established on international standards and able to support efficient e-government service delivery and a viable e-commerce environment in which individuals and businesses can participate for greater productivity and economic development. As payments provide the vital interface between these services and economic entities, the digitization of payments falls within this vision of e-Transformation.

Experience has shown that digitizing payments has enormous benefits. Because of the audit trail generated, digital payments provide transparency and accountability to financial transactions making it possible to prevent the hemorrhage of government funds and make savings. Digital transactions are efficient since they are time-saving, convenient, and, in most cases, less costly than using cash. For government, the broad objective of digitizing payments is to leverage the efficiencies that digitization brings to make savings in government operations and to increase the collection of government revenues. It is therefore necessary to make digital payments a ubiquitous part of the lives of all Ghanaians in such a way that attracts the financially included to transact through digital means and onboards the excluded/underserved into the formal financial system.

The Ghana Digital Payments Roadmap is designed to chart the way to a vibrant and inclusive digital payments ecosystem that is both pervasive and transformational, capable of supporting and complementing the e-Transform initiative, providing Ghanaians with financial tools tailored to suit their needs, and propelling Ghana into an enviable digitized financial hub.

Honorable Ken Ofori-Atta
Minister for Finance



Contents

ACKNOWLEDGMENTS	2
FOREWORD.....	3
EXECUTIVE SUMMARY	6
INTRODUCTION	10
PART I: HIGH-LEVEL MAPPING OF THE DIGITAL PAYMENTS ECOSYSTEM IN GHANA.....	12
Introduction	12
Country Overview	12
Financial Sector Analysis.....	13
Legal and Regulatory Environment	17
Payment System Analysis.....	18
Key Issues.....	20
Recommendations from the Diagnostic Report.....	21
Way Forward: The Cash-lite Roadmap	21
PART II: ROADMAP TO DIGITIZATION OF PAYMENTS IN GHANA	22
Introduction	22
Roadmap Initiatives	23
<i>Phase One: Expanding the Road to Digital Payments</i>	23
<i>Phase Two: Driving Payments into Accelerated Digitization</i>	28
<i>Phase Three: Sustaining the Pace of Digitization</i>	30
Lead Actors/Champions	30
Key Success Factors	31
Potential Risks	31
Conclusion	31
PART III: ACTION-ORIENTED SUMMARY.....	32
Phase One: Expanding the Road to Digital Payments	32
Phase Two: Driving Payments into Accelerated Digitization	43
Phase Three: Sustaining the Pace of Digitization	48
PART IV: APPENDICES	50

EXECUTIVE SUMMARY

The government of Ghana is seeking to harness the benefits of a shift from cash to digital payments by developing a national inclusive digital payments ecosystem where everyone can make – and receive – payments digitally. This commitment to migrate the bulk of Ghana’s payments into digital streams has been articulated in several public forums, as well as in the following documents: 1. the National Payments Strategy, 2014, 2. the commitment made at joining the United Nations’ Better Than Cash Alliance in 2014¹, 3. the National Financial Inclusion and Development Strategy that is about to be launched, and 4. a draft Digital Financial Services (DFS) policy soon to be adopted by government.

To actualize government’s vision as well as to facilitate and fast-track the shift to digital payments, a Digital Payments Roadmap has been drawn up by the Ministry of Finance with support from the Better Than Cash Alliance. It is based on the above documents, results and recommendations from the **Ghana Diagnostic Study (2017)**, as well as several workshops and stakeholder meetings.



Ghana Diagnostic Study (2017)
Better Than Cash Alliance

KEY OBJECTIVES FOR DIGITIZATION:

- Bring efficiencies into fiscal operations that will achieve both savings through the stemming of leakages and increased government revenue collection
- Achieve operational efficiency in all aspects of the economy, including business, commerce, agriculture, health delivery, and finance
- Achieve transparency in all financial transactions to ensure sanctity and accountability
- Improve access to financial services and leverage the opportunity for broader financial inclusion and inclusive growth
- Enhance economic empowerment of the poor and marginalized toward improved economic welfare and poverty reduction



Ghana has made and continues to make positive strides toward increased digitization of payments. The growth of digital payments in Ghana, though low by global standards, has been made possible by several inherent strengths in the payment system as well as evolving developments that present opportunities for accelerated growth in the digitization process. Specifically, the country has built critical foundational financial market and payments infrastructure to aid the transformation into a “cash-lite” economy, including an automated clearing house (ACH), a real-time gross settlement system (RTGS), electronic funds transfer (EFT), a GIFMIS² system, a central securities depository with a trading platform, and ATM interoperability. Recently, government has launched an interoperable switch that facilitates payments across financial institutions and mobile money accounts.

Other factors that have strong potential to contribute to the growth of digital payments in Ghana are:

- An extensive banking and non-bank sector, including multiple mobile money offerings facilitated by generally broad banking and mobile money agent networks
- High mobile phone penetration and rapidly growing mobile money usage, along with strong internet coverage
- The launch of a national biometric identification system and a digital addressing system, both of which should support innovative digital KYC solutions to advance financial inclusion of the previously unbanked and provide the opportunities for digital payments to grow
- Government’s deep commitment and actions to digitize payments as part of its e-Transform Ghana agenda
- The establishment of a Payment System Council to spearhead and drive the modernization of Ghana’s payment system
- An enabling and continuously innovative regulatory environment spearheaded by the Bank of Ghana
- A strong and growing fintech community, which, in partnership with financial institutions, is supporting a digital revolution with innovative digital financial products and services

Better Than Cash Alliance Diagnostic Study and Report

To fully understand the state of digital payments in the country and to help develop informed strategies to drive scale, the Ministry of Finance, in partnership with the Better Than Cash Alliance, launched Ghana's Digital Payments Diagnostic Study, conducted between April and June 2017. The study measured **the baseline state of the shift from cash to digital payments using best available data. It also assessed** the trajectory of the shift in a way that helps inform government priorities and policy decisions on how to accelerate digital payments, and to bring those currently excluded into the formal economy.

Key findings of the Diagnostic Study were that Ghana's total annual payments in 2016 were GHS561 billion, made by individuals, businesses and government. By volume, 99% of the payment transactions were in cash and **1%** were by digital means. In terms of value, **63%** of total payments were via cash, whereas **37%** were processed digitally. While government payments constitute the lowest category, both by value and volume of total annual payments in Ghana, as noted above, the government is in the lead in terms of its rate of digitization, with **86%** of the value of its transactions being digitized. It is also the second highest (**23%**) in terms of digital payments by volume. This success is largely due to G2P and G2G payments. The largest component of government payments by value are made to businesses, and **90%** of these G2B transactions are still made through paper-based instruments.

It is clear from these numbers that government has taken the lead by shifting its cash payments to digital solutions. However, much more needs to be done to achieve the digital transformation that the government seeks. There is a need to accelerate the pace of digitization, and, to do this effectively, the private and public sectors must be brought together to develop a common approach to scale digitization in the country.

The Better Than Cash Alliance Diagnostic Study recommends the adoption of **five** (5) specific "Accelerators" that were identified in a separate Alliance report titled "Accelerators to an Inclusive Digital Payments Ecosystem,"³ published in September 2016. The five accelerators recommended for Ghana are:

- Roll out a biometric National Identification System as planned and make explicit efforts to enable its use for payments and other financial use cases
- Improve payment interoperability
- Digitize government procurement and G2B payments
- Leverage EFT/RTGS for B2B payments
- Incentivize digital payments at the point of sale

The government of Ghana identified three priority use-cases as having potentially the highest impact on the shift to digital payments while presenting the least friction in implementation. These use-cases are:

- Payment of fees for government products, services and fines (P2G, B2G). The Diagnostic Study found that an average of approximately 98% of payments to government are made in cash and by checks by persons and businesses, respectively
- Payments to public utilities: water, electricity
- Merchant and retail payments, especially within the Fast-Moving Consumer Goods (FMCG) value chain

Implementation of the first two accelerators recommended by the Better Than Cash Alliance is already under way. Major work needs to be pursued to achieve the rest of the recommendations and government's priority areas, as well as an overall strategy to shift to digital payments.

The Diagnostic Study also identified some limitations that hinder the process of digitizing payments and, by extension, the adoption of digital payments. Some of these are captured below:

- The Ghana E-Payment Portal (GEPP), operated by the National Information Technology Agency (NITA), to enable digital access to government goods and services by the public, has not seen much usage by the public since its inception. This is partly due to the following:
 - Failure of various Ministries, Departments, and Agencies (MDAs) to integrate with GEPP due to their weak internal processes and capacity
 - Fragmented back-end databases and inadequate IT hardware infrastructure of MDAs, which make integration with GEPP difficult and sometimes impossible and which also can result in reconciliation failures
- Lack of digitization champions within the staffing structure of MDAs, especially at senior levels
- Lack of suitable "smart" infrastructure for full end-to-end digital payment and distribution at retail and merchant points
- No specific government policies mandating or incentivizing digital payments of any form
- A strong cash culture, which will be difficult to dislodge unless the drive for digitization is sustained
- Low financial literacy and awareness among financial service consumers
- Lack of effective cooperation between stakeholders

The Roadmap

Although the country has made significant progress in increasing access to financial services, a good proportion of Ghanaians either do not have access to or are unable to participate in what is available. The Roadmap identifies key actions and initiatives that will leverage existing strengths and opportunities in the Ghanaian payments ecosystem to implement projects with potential for high impact for effective digital transformation. It is organized into three phases, each covering a period of two years as follows:

1 PHASE ONE: EXPANDING THE ROAD TO DIGITAL PAYMENTS

Phase one recommends scalable solutions to provide excluded Ghanaians with payment options in the shape and form they can relate to, thereby augmenting their payment opportunities. It also recommends actions that have potential for high impact to quickly open up and deepen the scope of digital payments in Ghana. These include the following:

- Issue an overarching DFS policy to set the cash-lite agenda
- Establish a highly empowered digitization team for the successful implementation of the Roadmap
- Accelerate the digitization of government services/products and merchant payments, especially in the Fast-Moving Consumer Goods (FMCG) value chain, while incentivizing same
- Introduce and enforce policy for increased communication and data coverage of the rural areas
- Support the deployment of subsidized mobile phones by using smart funding schemes to create access to basic smart-phones countrywide.

2 PHASE TWO: DRIVING PAYMENTS INTO ACCELERATED DIGITIZATION

The second phase describes key actions that have the capability of galvanizing digital payments and escalating the rate of digitization in the country. Prominent actions points are as follows:

- Institute payments system surveys to identify and inform policy in underserved areas for appropriate redress
- Appoint a financial sector ombudsman with statutory authority to settle financial sector disputes, prosecute offenders, and apply sanctions
- Enforce the use of digital modes of payment for all government services, especially in urban areas
- Digitize the transportation sector with tap-n-go technology at toll booths; establish pilot cashless lorry stations and car parks
- Digitize payments in the rural and agricultural ecosystem involving rural schools, hospitals, churches, farm inputs, and market systems to ensure the retention of e-value in the rural economy
- Establish a viable, sustainable, and fully digitized rural insurance scheme

3 PHASE THREE: SUSTAINING THE PACE OF DIGITIZATION

It is envisaged that the first two phases would facilitate the prevalence of digital modes of payment and set the parameters for escalating the pace of digitization. Phase three recommends longer-term actions, which will sustain the momentum toward increased digitization of payments in Ghana. Highlights of this stage are as follows:

- Continue to digitize payments in schools, hospitals, churches, farm inputs, and market systems in the rural areas to retain e-value within the rural ecosystem
- Ensure deployment of data and mobile technology to unserved areas
- Issue directives to penalize the use of cash
- Widen the scope of coverage of the digitized rural insurance scheme

For each phase, detailed initiatives are assigned where it is relevant, under seven thematic areas identified and distilled throughout the Roadmap exercise. These thematic areas are as follows:

1. Transformational Policy Initiatives
2. Improved Governance Structures
3. Enabling Regulation and Oversight
4. Increased Access, Service Delivery, and Digital Payment Use Cases

5. Enhanced Infrastructure
6. Improved Capacity
7. Consumer Protection

INTRODUCTION

Globally, countries are experiencing a rapid expansion of digitization and technological advancements that touch on nearly all aspects of life, both individually and institutionally. In general, the surge in digitization has improved operational efficiency and service delivery in all the key sectors of public and commercial importance, from manufacturing and industry, to business and commercial operations, agriculture, health, education, and finance.

Global payments, in particular, are being transformed by the digitization drive. The 2017 World Payments Report (WPR) estimates that “non-cash transaction volumes will record a CAGR of 10.9% during 2015-2020E.” It is envisaged that this growth will be driven by developing markets, which are expected to record a sustained CAGR of 19.6% of non-cash transaction volumes during the period. Asia alone is expected to post a CAGR of 30.9%, whereas it is estimated that mature markets will deliver a more modest growth rate of 5.6% during the same period. The WPR estimates that e-payments and m-payments will be critical components of this growth story. A 2016 McKinsey & Company report⁴ estimated that digital finance has the potential to boost annual GDP of all emerging economies by \$3.7 trillion by 2025. As one specific example, the report estimates that digital finance can add \$88 billion to Nigeria’s GDP by 2025. The G20’s Global Partnership for Financial Inclusion (GPII) 2014 report, “The Opportunities of Digitizing Payments,” posits that “digitizing payments and remittances is vital to achieving G20 goals.”⁵ Specifically, “rapid development and extension of digital platforms and digital payments can provide the speed, security, transparency, and cost efficiency needed to increase financial inclusion at the scale required to achieve G20 goals.”

Especially for emerging markets, the benefits of payments digitization have been enormous for governments, businesses, and individuals alike. Some benefits include the reduced use of cash in payment transactions for governments. This has, in turn, led to improved transparency in government financial transactions, the elimination of leakages, higher revenue mobilization, and savings in fiscal management. For instance, the government of India saved almost \$9

billion in less than four years, in social protection payments through electronic Direct Benefits Transfers.⁶ The enhanced transparency in payments digitization compels a reduction in corruption. India experienced a 47% reduction in bribery when it introduced digital smart cards in the payment of social security pensions at the village level.⁷ Payments digitization allowed the government of Ghana to remove approximately 50,000 ghost names from the government payroll and pensions register, thereby freeing up funds for other government expenditures. A cash-lite environment also means a greater proportion of money in the banking system, leading to more effective monetary management of the economy by the central bank.

Additionally, digitization of payments presents businesses the opportunity to integrate their payments operations into their internal accounting systems to streamline and improve efficiency in their operations. Individuals also gain from the payments digitization process through greater access to formal financial services at affordable prices. If supported by robust biometric identification systems, digital financial services provide the unbanked and unserved an avenue of entry into the formal financial sector and the opportunity to make investments that lift them out of poverty. Individuals can choose from a broad range of digital products and services best tailored to their needs and thereby elicit greater benefit and efficiency from their financial transactions.

Like other emerging economies, the government of Ghana is seeking to harness the benefits of a shift from cash to digital payments by developing a national inclusive digital payments ecosystem where everyone can make – and receive – payments digitally. Key amongst the benefits that government is seeking is the opportunity to onboard the unbanked and

underserved into the formal financial system in such a way that affords them access to financial services other than just payments. The government of Ghana is therefore committed to migrating the bulk of Ghana's payments into digital streams in a bid to curtail the use of cash and other paper-based instruments. This commitment is articulated in several public forums, as well as in the following documents: **1.** the National Payments Strategy, 2014, **2.** the commitment made at joining the Better Than Cash Alliance in 2014,⁸ **3.** the Financial Inclusion Strategy that is about to be launched, and **4.** a draft Digital Financial Services (DFS) policy soon to be adopted by government.

Ghana has made significant progress in increasing access to financial services; however, a good proportion of Ghanaians still either do not have access to or are unable to participate in what is available. It is envisaged that accelerating the digitization of payments will enable the government and the people of Ghana to reap the many benefits that come with payments digitization. To actualize government's vision as well as to facilitate and fast-track the shift to digital payments, the Digital Payments Roadmap has been drawn up by the Ministry of Finance with support from the Better than Cash Alliance.

The overarching theme of innovation runs throughout the Roadmap. This covers innovative regulation, new and creative products and services, systems, processes, and procedures that facilitate enablers such as e-KYC (digital know your customer) mechanisms, interoperability, and connected market solutions. It therefore emphasizes engagement with and empowerment of fintechs to facilitate such innovative solutions. The new National Identification Scheme and National Digital Addressing System, for example, provide the tools for fintechs to leverage to ensure that the unbanked can be easily brought into the formal financial system.

Key objectives for digitizing payments:

- Bring efficiencies into fiscal operations that will achieve both savings through the stemming of leakages and increased government revenue collection
- Achieve operational efficiency in all aspects of the economy including business, commerce, agriculture, health delivery, and finance
- Achieve transparency in all financial transactions to ensure sanctity and accountability
- Improve access to financial services and leverage the opportunity for broader financial inclusion and inclusive growth
- Enhance economic empowerment of the poor and marginalized toward improved economic welfare and poverty reduction

GOVERNMENT'S STATED VISION FOR DIGITIZING PAYMENTS:

To transform Ghana's payment system into a highly digitized regime that promotes inclusive growth and facilitates accelerated economic development "

The Roadmap is based on: **1.** the National Payments Strategy, 2014, **2.** the National Financial Inclusion and Development Strategy, which is about to be launched, **3.** a draft Digital Financial Services (DFS) policy soon to be adopted by the government, **4.** results and recommendations from the Better Than Cash Alliance Ghana Diagnostic Study (2017), and **5.** feedback from several workshops and stakeholder meetings.

The document is set in four parts.

Part I documents a high-level mapping of the existing digital payments ecosystem in Ghana, showcasing a country overview, financial sector analysis of financial institutions and access points, the different payment streams and products in Ghana, and the status of payments in the country.

Part II describes the intervention initiatives that will catapult Ghana into the inclusive digital ecosystem envisaged. The interventions are set forth in three phases, with each phase covering a period of two years. Phase one recommends scalable solutions to provide excluded Ghanaians with payment options in the shape and form they can relate to, thereby augmenting their payment opportunities. It also recommends actions that have potential for high impact to quickly open up and deepen the scope of digital payments in Ghana. The second phase describes key actions that have the capability of galvanizing digital payments and escalating the rate of digitization in the country. Phase three recommends longer-term actions that will sustain the momentum toward increased digitization of payments in Ghana.

Part III comprises annexures of spreadsheets capturing the Roadmap interventions in the three phases, along with the Responsible Actors and the Lead Actors for the various Roadmap initiatives. This provides the basis for more effective project planning and budgeting for each initiative.

Part IV contains the appendices of illustrative tables and a list of acronyms.

Part I: High-Level Mapping Of The Digital Payments Ecosystem In Ghana

A country diagnostic study commissioned by the government with support from the Better Than Cash Alliance in 2017 concluded that Ghana has “made significant progress in building the foundation of an inclusive digital payments ecosystem.”⁹ The country has an extensive banking system in place bolstered by a significant number of non-bank financial institutions. It also has in place an RTGS, an Automated Clearing House (ACH), and a central payment switch, which are critical to foundational payments system infrastructure. A booming mobile money and fintech sector, supported by growing internet connectivity, has added diversity, offering users greater access to formal financial services. All of these are underpinned by a robust set of laws, rules, and regulations, some of which are under review to make them more progressive and adaptive to innovative technology.

The Better Than Cash Alliance Diagnostic Report also points out that “the Ghanaian government is leading by example in digitizing many of its own payments and continuously improving the regulatory environment. Large businesses are also taking positive steps. Even so, Ghana remains at the initial stages of its digitization journey, with cash still prevalent in many parts of the economy.” Government’s commitment to taking digitization to the next level is therefore opportune, and the momentum needs to be sustained.

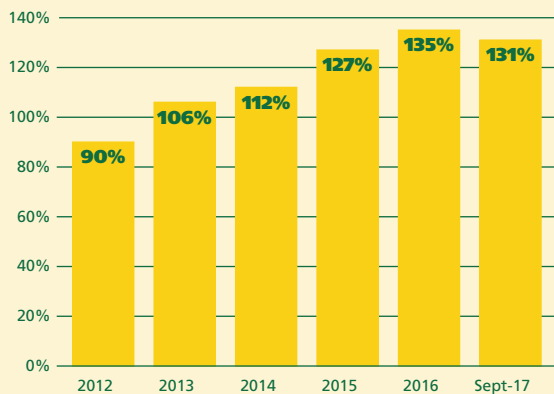
Country Overview

Ghana has a population of 28.3 million according to the Ghana Statistical Service. Significantly, 57% of the population are young adults between the ages of 15 and 34, which bodes well for digital acceptance and literacy. Further, 51% of the country live in urban areas, whereas 49% live in the rural areas, and 65% of total land area is used in agriculture. Ghana has a strong literacy rate of 74%, a basic numeracy rate of 95%, and, according to Financial Inclusion Insights (FII), December 2015,¹⁰ has a financially stable population, with 73% of adults living above the poverty line. With regard to financial services uptake, 67% of Ghanaian adults save through formal means, 59% have an insurance product, and 40% undertake

investments. Furthermore, 96% of adult Ghanaians own at least one form of identification, and 91% own a mobile phone.

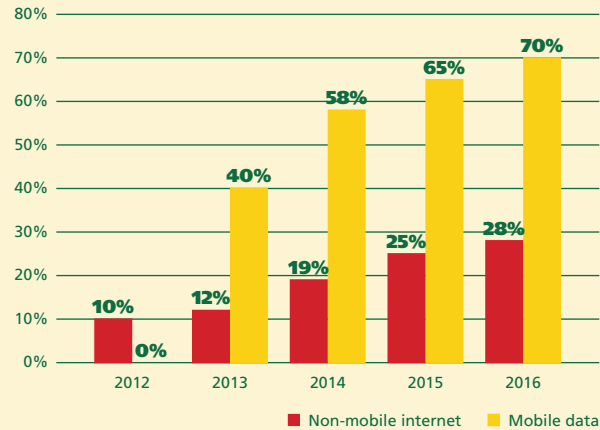
Six telecommunication companies (MTN, Vodafone, Airtel, Tigo, Glo, Expresso), supervised by the National Communication Authority (NCA), operate in Ghana. According to NCA’s Quarterly Statistical Bulletin on Communications in Ghana, Q3 2017, mobile (voice) subscriptions stood at a total of 37.4 million, while mobile phone penetration in Ghana stood at 131% as of the end of September 2017¹¹ (an increase of over 99% since the end of 2012), reflecting ownership of more than one SIM by Ghanaians (Chart 1). The Bulletin further states that Mobile Data subscription

**Chart 1
MOBILE PHONE PENETRATION IN GHANA**



Source: NCA

**Chart 2
MOBILE DATA AND NON-MOBILE
IN INTERNET PENETRATION**



Source: Better Than Cash Alliance Diagnostic Report

has consistently increased, from 19.3 million in third quarter of 2016 to 22.8 million at the end of the third quarter of 2017, while Mobile Data penetration measured 79.94% in the same period, having grown from 0% in 2012.¹² The Better Than Cash Alliance

Diagnostic Report suggests that mobile phone access and data penetration have played a significant role in increasing internet usage in Ghana (Chart 2). GSMA also puts mobile smartphone penetration in Ghana at 23.4% in 2016.¹³

Financial Sector Analysis

BANKING

Bank of Ghana recorded 34 universal banks,¹⁴ with a total of **1,495 branches** as of the end of 2017. Rural and community banks (unit banks serving mostly rural communities) numbered 141, with 910 agencies, while Non-Bank Financial Institutions (NBFIs) and registered Microfinance Institutions (MFIs) totaled 71 and 566, respectively. At the end of 2017, the universal banks operated a total of **13.6 million accounts**.

The banking system recorded a total of 2,044 ATMs at the end of 2017, most of which are currently shared through an **interoperable central switch (gh-link)** operated by the Ghana Interbank Payment and Settlement System Ltd (GhIPSS). Banks had also rolled out a total of 7,356 POSs by the same date at various merchant points, mostly in the urban centers.

There is a keen awakening to digital financial services amongst the banking fraternity, which has spurred several banks in Ghana to launch digital products and services tailored toward providing more convenience to customers, often in conjunction with mobile money operators (MMOs). Ecobank Capital Advisors

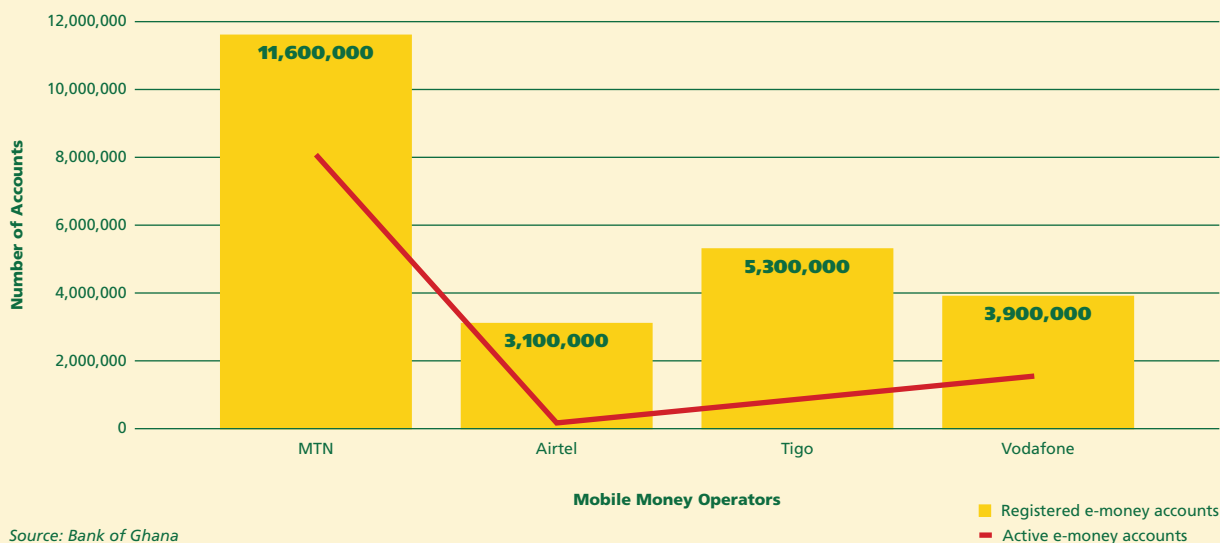
(ECA), for instance, together with Ecobank Ghana Ltd and MTN Ghana, has rolled out the TBILL4ALL application, which enables customers to purchase Treasury bills with mobile money on their mobile phones from the comfort of their homes in very low values.

Ecobank has also partnered with Visa, Mastercard, and various MMOs to deploy mobile payments via the Merchant Quick Response (QR) Code to promote fast, secure, and cost-effective means of payment.

A number of banks have launched mobile-based micro-accounts (i.e., low value accounts opened with minimum account opening requirements and subject to low transactional limits). Others, like Afb Ghana Ltd, a credit finance institution, have deployed a microloan service in which disbursements and collections are made through the mobile phone.

The Bank of Ghana's GhIPSS has also arranged with international remittance institutions and banks for the termination of remittances onto the national biometric payment card, the e-zwich card.

Chart 3
MARKET SHARE OF MOBILE MONEY ACCOUNTS (END 2017)



In May 2018, GhIPSS launched a national interoperability platform as part of the government's commitment to foster interoperability across the country's payments mechanisms. The platform ensures seamless payments across bank and mobile money accounts and across different mobile networks. Additionally, it offers assurance and certainty of settlement in central bank funds and the mitigation of settlement and liquidity risk.

MOBILE MONEY

Four¹⁵ of the six telecommunication companies (MTN, Vodafone, Airtel, and Tigo) offer mobile money service, which is allowed under the Electronic Money Guidelines and Agent Guidelines issued by the central bank in July 2015. The Guidelines require Telcos to set up separate entities to manage mobile money operations under the direct supervision of the central bank. Together, the four companies had a total of **23.9 million accounts** as of the end of 2017, out of which 11.1 million were active¹⁶ consumers of mobile money services. MTN is the dominant company, with 47.6% market share of voice¹⁷ subscriptions and 48.4% share of mobile money accounts.¹⁸

There were **194,688 registered mobile money agents**, with active agents¹⁹ numbering 151,745 at the end of 2017. Not surprisingly, agent distribution follows the same trend as ATMs and POSs, with Greater Accra (51,106), Ashanti (27,455), and Western (17,301) Regions having the greatest number, and Upper East (3,536), Upper West (3,870), and Northern (8,581)

Regions having the least (**Appendix 1, Appendix 2**). Volume of mobile money transactions totaled 981.6 million, while value of transactions constituted GHS155.8 billion at the end of 2017, recording growth rates of 78.4% and 98.5%, respectively, over the previous year.

INSURANCE

The 2016 annual report²⁰ of the National Insurance Commission (NIC) indicates that insurance penetration²¹ in Ghana is low, at less than 2%. At the end of 2017, NIC recorded 131 insurance firms offering life, non-life, reinsurance, and brokerage services, and 7,000 insurance agents. The government of Ghana runs a National Health Insurance Scheme (NHIS), with biometric membership registration and electronic claims processing, which provides Ghanaians with access to basic healthcare; however, the coverage of the NHIS is not extensive. Research work undertaken by Andoh-Adjei et al.²² found that active membership of the scheme as of the end of 2014 was only 38% of the population of Ghana. Participation in the scheme is voluntary, and subscription into the scheme is in two categories: the Informal Group, which pays a premium, and the Exempt Group, which does not pay a premium. Membership in this latter group is meant for all contributors to the Social Security and National Insurance Trust (SSNIT), pensioners enrolled in the SSNIT scheme, children under 18 years, adults above the age of 70, and people with mental disorders, amongst others.

In addition to the SSNIT scheme, there are a handful of private insurance schemes. The insurance sector has, however, seen remarkable growth in recent years, especially in micro-insurance products for low-income Ghanaians. These services have been bolstered by mobile technology, mobile money, and airtime (based on a revenue sharing arrangement between the Telco and the insurance firm), which make it convenient both for consumers to pay premiums and for providers to collect them. A case in point is BIMA Ghana, which has partnered with Tigo to provide access to micro insurance and mobile health services to 1.8 million customers in Ghana. Since early 2018, BIMA has partnered with Vodafone to deliver an investment-linked insurance product to fishermen through a project funded by USAID.

PENSION

The Social Security and National Insurance Trust (SSNIT) exists as the largest non-bank financial institution operating the first of a contributory three-tier national pension scheme. SSNIT's website²³ cites a registered membership of 1.3 million. In 2014 the National Pension Regulatory Authority was formed to oversee the administration and management of the three pension schemes and to bring depth into the pension ecosystem. In its 2018 budget,²⁴ the government of Ghana announced its commitment to

develop a framework for setting up a broad Informal Sector Pension Scheme under the third tier of the National Pension Scheme to cover cocoa, coffee, and shea nut farmers, among others. This contributory pension scheme for the nation's farmers is enshrined in the Cocoa Board Law of 1984 and is a primary initiative under financial sector reforms.

FINTECHS

Ghana, like the rest of the world, has witnessed a wave of technological advancements, which has given rise to a growing number of fintech companies and aggregators²⁵ providing payment solutions to the financial sector. These institutions can be categorized into various specialized areas, such as Payments (Mobile and Card Acquiring), Mobile Money and Agency Banking technology, Lending and Savings, Data Analytics, Insurance technology, and Remittances. Others are Microfinance, Agric Finance, Equity Finance, and Crowd Funding technologies. There are currently over 70 fintech companies in Ghana. Many of them are actively pursuing the formation of an association to promote visibility and advocacy for the sector. The association will also serve as a platform for engagement and for ensuring orderly behavior. Figure 1 depicts an array of some Ghanaian fintechs as of the end of 2016.

Figure 1
FINTECH LANDSCAPE IN GHANA (END 2016³³)





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FINANCIAL INCLUSION

Financial inclusion in Ghana has experienced impressive growth in recent years. The Financial Inclusion Insights (FII) report of December 2015 indicated that 48% of Ghanaian adults had financial accounts, of which 34% had bank accounts, 20% had mobile money accounts, and only 8% had NBFIs accounts. The World Bank Global Findex Database 2017 shows that these numbers have increased significantly, to 58% financial account ownership and 39% mobile account ownership as of the end of 2017. These figures are also well above the 2017 sub-Saharan regional levels of 43% and 21%, respectively. The FII report further indicated that men hold more bank accounts (43% in 2015) than women (31%), whereas women hold more non-bank formal accounts (26%) compared with men (19%). The report also revealed that access to formal financial services has grown slightly faster for women than for men, moving from 37% in 2010 to 57% at the end of 2015 for women compared with a growth from 45% to 62% in the same period for men.

A CGAP survey found that this expansion in financial inclusion is attributable to mobile financial services, which, the survey found, contributes nearly as much access to formal financial services as banks.²⁶ According to Bank of Ghana statistics, registered mobile money accounts have seen strong growth, from 3.7 million in 2012 to **23.9 million** at the end of 2017 compared with **13.6 million bank accounts** as of the end of 2017.

In terms of usage, mobile money transactions grew by 269% in volume, from 266.3 million in 2015 to 981.6 million in 2017. Mobile money transactions also grew by 340% in value from GHS35.4 billion in 2015 to GHS155.8 billion in 2017 (Appendix 4).

The FII report of 2015 showed that 41% of adult Ghanaians had digital access to their financial accounts, whereas 27% of adults had digital access to bank accounts, 20% to mobile money accounts, and only 4% of adults had digital access to NBFIs accounts at the end of 2015. The 2017 Global Findex Database reports that 49.5% of adult Ghanaians made or received digital payments in 2017, up from 25.1% in 2014 and well above the sub-Saharan regional average of 34.4% in 2017. The same report records that 32.2% of Ghanaian adults sent or received remittances through an account, 17.8% through an OTC service, and only 5.6% through cash means only, again above sub-Saharan regional levels of 22.7%, 11.0%, and 9.4%, respectively. Moreover, 34.4% of adults own debit cards, the most preferred means of payment after mobile money, while 13.7% own e-zwich cards (Appendix 3).

With a population of 1,495 bank branches and 2,044 ATMs, an average of 11,572 adults are served by one branch, while 8,464 adults are served by one ATM. Data from Bank of Ghana indicates that at the end of 2017, Upper East, Upper West, and Volta Regions were the most thinly populated with ATMs and POSs, while the regions with the most were Greater Accra, Ashanti, and Western Regions (Appendix 2). By comparison, an average of 115 adults were served by one of the 151,745 active mobile money agents in Ghana by the end of 2017.

Legal and Regulatory Environment

Banking and digital payments are about trust and confidence that the public and users have in the institutions, systems, policies, and products of the financial system. Security, safety, prudence, and transparency are therefore key to the success of any financial sector. To this end, the banking and payments system in Ghana relies on a robust set of laws, guidelines, and regulations that have promoted the evolution of the payments system. These include the following:

LAWS

- (a) **Bank of Ghana Act, 2002, Act 612:** The Act assigns responsibility for the supervision of payment and settlement systems in Ghana to the BOG.
- (b) **The Payment Systems Act, 2003, Act 662:** Further empowers the BOG to oversee, promote, manage, and supervise payment and settlement systems.
- (c) **The Bills of Exchange Act, 1961, Act 55:** Is an adaptation of the English Bills of Exchange Act 1882, which specifies how checks are drawn, accepted, and paid.
- (d) **Other laws:**
 - Credit Reporting Act 2007, Act 726
 - Central Securities Depository Act, 2007, Act 733
 - Borrowers and Lenders Act, 2008, Act 773
 - Anti-Money Laundering Act, 2008, Act 749
 - Electronic Transactions Act, 2008, Act 772
 - Deposit Protection Act, 2016, Act 931

RULES, REGULATIONS, AND GUIDELINES

There are also rules, regulations, and guidelines governing specific systems, such as:

- Ghana Bankers' Clearing House Rules
- Policy Framework for the Operation of ATMs and POSs
- Ghana Automated Clearing House Direct Credits & Debits Guidelines and Operational Procedures
- Guidelines for E-Money Issuers in Ghana
- Agent Guidelines

POLICIES

- The National Payments System Oversight Framework, 2013
- Draft DFS Policy to be adopted by the Ministry of Finance
- Draft National Financial Inclusion and Development Strategy (NFIDS)

REGULATORY DEVELOPMENTS

Regulatory Review: In 2016, the **Electronic Money Issuers and Agents' Guidelines** and the **Payment Systems Act, 2003 (Act 662)**, were reviewed and consolidated into one legislation, the **Payment Systems and Services Bill**. The bill is currently undergoing Cabinet and Parliamentary review for ratification and passage into law.

Deposit Protection: Initiated by Bank of Ghana, the **Ghana Deposit Protection Act, 2016 (Act 931)**, was passed in 2016 to protect small depositors from losses, and to promote financial inclusion. As stipulated by the Act, the central bank instituted a deposit insurance scheme in 2017.

Corporate Governance: Bank of Ghana has, since August 2017, initiated a "financial sector cleanup." To this end, the central bank recently issued a **Banking Business–Corporate Governance Directive**. The main objective of the Directive is to enforce the adoption of sound corporate governance principles, standards, and best practices in order to prevent regulated financial institution failures occasioned by poor corporate governance practices, thereby promoting public trust and confidence.

Cyber Security: There are plans to introduce Banking Sector Cyber and Information Guidelines in 2018.

BOG OVERSIGHT INITIATIVES

Improving Governance: The Bank of Ghana established the Payments Systems Council (PSC) in 2016. The Council is to serve as an advisory body to the Bank, drive developments in the payment systems, and support the attainment of sound and efficient payment, clearing, and settlement systems. Since it was set up, however, the Council has yet to constitute relevant working groups and commence work on the diverse issues affecting the payments industry.

Improvement in Data Collection: In July 2016, BOG launched a web-based data collection portal to collect payment streams data from the banks and other payment service providers in line with section 3(1) of the Payment Systems Act, 2003 (Act 662). The portal facilitates seamless submission and analysis of payment systems data.

Strengthening Supervisory Collaboration: In September 2016, the Bank signed a Memorandum of Understanding (MOU) with the National Communications Authority (NCA) to foster cooperation between the two institutions in the digital finance space. The MOU sets forth a statement of intent for the NCA to assist the Bank in specialized areas to ensure compliance with the financial laws, regulations, directives, and guidelines of the Bank. So far, supervisory cooperation between the two regulators has been lackluster, with no formal workplan developed.

Introduction of EMV Technology: The Bank has initiated a process to migrate all payment cards from magnetic stripe technology to Europay, Mastercard, and Visa (EMV) technology, to enhance electronic card payment system security.

Payment System Interoperability: On May 10, 2018, GhIPSS launched the long-awaited interoperable platform, dubbing it the “Financial Inclusion Triangle” due to the incorporation of bank, mobile, and e-zwich transactions on the platform. The launch was for the first phase of the initiative to enable users to transfer money seamlessly across mobile money networks (M2M), across banks (B2B), and across the bank and mobile money divide (B2M, M2B). The second phase will interconnect the e-zwich card to enable users to push money from mobile and bank accounts to their e-zwich cards and vice versa, thereby completing the triangular network and making payments truly interoperable.

Agent Registry: A digital Agent Registry is being developed by Bank of Ghana to enhance identification and oversight of agents as agent networks become more prominent and instrumental in the financial sector. The Registry focuses on mapping and capturing data on all agent access points across the country, leveraging mobile General Packet Radio Services (GPRS) data and location technology. When it becomes fully operational, the Agent Registry will interconnect with the national digital address system to provide unique identification for agents and to facilitate monitoring of agents on a real-time basis. The Registry will have the ability to record and blacklist agents who engage in undesirable practices. The Registry will therefore be a useful point of reference for Financial Service Providers before they engage agents, especially in recent times when, though on a low scale, there are increasing reported cases of agent-related fraud.

RegTech Project: The Bank of Ghana has signed an agreement with Bankable Frontiers Associates (BFA) to develop a **RegTech** (regulatory technology) **solution** to enhance supervision and provide the basis for evidenced-based policy development. As a first stage, collection and management of consumer complaints was identified as a key area of supervisory concern requiring immediate redress. A **Chatbot and Consumer Complaints Clearing House system** are therefore being developed for effective consumer complaints reporting and resolution. A prototype is expected to be completed in 2018 for pilot study with mobile money operators.

Payment System Analysis

The modes of payment in Ghana are cash, checks, electronic funds transfer (EFT), cards (including closed-loop cards), internet, mobile banking, and mobile money transfers. Despite significant progress in the payments ecosystem in recent years, the use of cash remains widespread and endemic, both in terms of value and volume. The Better Than Cash Alliance Diagnostic Report attributes the high prevalence of cash usage by volume to the large informal sector in Ghana, as is the case for other emerging African economies where Better Than Cash Alliance diagnostic studies have been performed, such as Malawi (over 99% of payments in 2014²⁷), Nigeria (98.4% of payments in 2013²⁸), and Uganda (95% of payments in 2015²⁹).

The Better Than Cash Alliance Diagnostic Report estimated that total annual payments by value in 2016 were GHS561 billion. By volume, 99% of the transactions were in cash and 1% were digital (Table 1). In terms of value, however, 63% of total payments were via cash, while 37% were processed digitally.

Business payments in 2016 were the highest by value, at GHS425 billion, of which 35% were made digitally. This was followed by Individuals and Government, with GHS100 billion (of which 29% were digital) and GHS36 billion (of which 86% were digital), respectively. By volume, however, Individuals constituted the highest, with 6.6 billion transactions

Table 1
PAYMENT TRANSACTIONS — VOLUME AND VALUE BY PAYER (2016)

PAYER	TOTAL VOLUME OF PAYMENTS (MILLION)	% VOLUME ELECTRONIC	% VOLUME CASH	TOTAL VALUE OF PAYMENTS (GHS BILLION)	% VALUE ELECTRONIC	% VALUE CASH
Govt.	106	23	77	36	86	14
Business	115	28	72	425	35	65
Individuals	6,606	0.4	99.6	100	29	71
Total	6,827	1	99	561	37	63

Source: Better Than Cash Alliance Ghana Payments Diagnostic Report, 2017

(97% of total payments by volume), of which only 0.4% were electronic, followed by Business and Government, with 115 million transactions (of which 28% were electronic) and 106 million transactions (of which 23% were electronic), respectively. These numbers are shown in Table 1 above.

While government payments constitute the lowest, both by value and volume, of total annual payments in Ghana, as noted above, the government is in the lead in terms of its rate of digitization, with 86% of the value of its transactions being digitized. It is also the second highest (23%) in terms of digital payments by volume. This success is largely due, however, to G2P and G2G payments. The largest component of government payments by value are made to businesses, and 90% of these G2B transactions are still made through paper-based mediums. This is mostly due to the lack of a centralized system for supplier payments by government agencies. A centralized supplier payment system is one of the components that government must employ to accelerate the shift into digital streams.

DIGITAL PAYMENT METHOD

Mobile money constitutes, by far, the largest mode of digital payment by volume (981.6 million) and the highest by value (GH¢155.8 billion in 2017). Mobile money transactions carried out in 2016, in fact, represented the bulk (90%) of the 1% digital payments by volume recorded by the Diagnostic Report. By value, they represented over 77% of the 37% transactions initiated by digital instruments in that period. It must be noted, however, that mobile money transactions are mostly domestic remittance transfers and airtime top-up transactions.

Direct Credit (the electronic transfer or deposit of money by a payer directly into a payee's bank account) and debit cards come in second and third, respectively, in terms of user preferences for digital payments. Direct Credit transactions posted significant numbers (6.1 million by volume and GH¢24.3 billion by value), while debit cards also recorded quite robust numbers (60.4 million transactions valued at GH¢17.8 billion) compared with other payment streams in 2017. The various modes of payments are shown in Appendix 4.

Despite the ongoing prevalence of cash and checks, digital financial services are steadily on the rise in Ghana, reflecting global trends. Appendix 4 shows that by the end of 2016, registered users of internet banking had grown by 14% over 2015, while transactions had almost tripled. 2017 data records a 43.7% growth in value over 2016. Meanwhile, mobile banking users grew by 50%, and transactions grew by 25%. It may be noted that although internet banking transactions are driven mainly by business payments, mobile banking transactions are mostly retail payments made by individuals.

Other electronic payments (e.g., debit cards, credit cards, and e-zwich) equally witnessed increases in both volume and value of transactions over the two-year period, 2015–2017. Growth is expected to continue, as several banks and fintechs deploy marketing campaigns to drive adoption and uptake of their digital payment products. Furthermore, various government pronouncements supporting the use of digital payments are set to shape the mindset and behavior of the public in the way they make payments.

Key Issues

Ghana continues to make positive strides toward increased digitization of payments. This has been made possible by several inherent strengths in the payment system as well as evolving developments, which present opportunities for accelerated growth in the digitization process. However, a number of challenges also remain that require the attention of authorities to ensure that the process of digitization is not derailed.

STRENGTHS:

On the plus side, the growth of digital payments in Ghana, though low by global standards, has been made possible by the following:

- An extensive banking and non-bank sector, including multiple mobile money offerings facilitated by generally broad banking and mobile money agent networks
- High mobile phone penetration and rapidly growing mobile money usage, along with growing internet coverage
- Robust financial market and payments infrastructure, including the launch of an interoperable switch that facilitates payments across financial institutions and mobile money accounts
- Government's deep commitment and actions to digitize payments as part of its e-Transform Ghana agenda
- The establishment of a Payment System Council to spearhead and drive the digitization process
- An enabling and continually improving regulatory environment spearheaded by the Bank of Ghana
- A strong and growing fintech community, which, in partnership with financial institutions, is supporting a digital revolution with innovative digital financial products and services
- The launch of a national biometric identification system and a digital addressing system, both of which should support innovative digital KYC solutions to advance financial inclusion of the previously unbanked

CHALLENGES:

The Diagnostic Report identified some limitations that hinder the process of digitizing payments and, by extension, the adoption of digital payments. Some of these are captured below:

- The Ghana E-Payment Portal (GEPP), operated by the National Information Technology Agency (NITA) to enable digital access to government goods and services by the public, has not seen much usage by the public since its inception. This is partly due to the following:
 - Failure of various Ministries, Departments, and Agencies (MDAs) to integrate with GEPP due to their weak internal processes and capacity
 - Fragmented back-end databases of MDAs, which make integration with GEPP difficult and sometimes impossible and which also result in reconciliation failures
- A lack of digitization champions within the set-up of MDAs
- Inadequate IT hardware infrastructure within the set-up of MDAs
- Lack of suitable "smart" infrastructure for full end-to-end digital payment and distribution at retail and merchant points
- No specific government policies mandating or incentivizing digital payments in any form
- A strong cash culture, which will be difficult to dislodge unless the drive for digitization is sustained
- Low financial literacy and awareness among financial service consumers
- Lack of effective cooperation between stakeholders

Recommendations from the Diagnostic Report

The Better Than Cash Alliance Diagnostic Report suggests that a lot more needs to be done if Ghana is to broadly digitize its payments. Included in the Alliance's recommendations is the adoption of **five (5)** specific "Accelerators" taken from those identified in a separate Better Than Cash Alliance report titled "Accelerators to an Inclusive Digital Payments Ecosystem,"³⁰ published in September 2016.

The five accelerators recommended for Ghana by the Alliance are as follows:

- Roll out a biometric National Identification System as planned and make explicit efforts to enable payments and other financial use cases
- Improve payment interoperability
- Digitize government procurement and G2B payments
- Leverage EFT/RTGS for B2B payments
- Incentivize digital payments at the point of sale

Implementation of the first two accelerators recommended by the Better Than Cash Alliance is already under way. Major work needs to be pursued to achieve the rest of the recommendations and government's priority areas, as well as an overall strategy to shift to digital payments.

The government of Ghana itself identified three priority use-cases as having potentially the highest impact on the shift to digital payments while presenting the least friction in implementation. These use-cases are:

- Payment of fees for government products, services, and fines (P2G, B2G). The Diagnostic Study found that an average of approximately 98% of payments to government are made in cash and by checks by persons and businesses, respectively.
- Payments to Public Utilities: water, electricity
- Merchant and retail payments, especially within the Fast-Moving Consumer Goods (FMCG) value chain

Way Forward: The Cash-lite Roadmap

From the foregoing, it is clear that a lot more needs to be done to bring Ghana's vision to fruition. Some key questions worth considering are: What are the key drivers of digital adoption and usage of digital products and services in Ghana? What areas present the opportunity for quick wins to harness the existing ecosystem strengths for accelerating digitization? What incentives can be leveraged? Furthermore, since the proportion of women to men is quite significant, it would be useful to adopt mechanisms that

overcome gender-specific barriers, such as the ownership of mobile phones and financial literacy, that keep women at a disadvantage in order to generate a good balance in the drive to scale up digital adoption and usage.

These considerations form the basis of the Ghana Digital Payments Roadmap developed to be implemented within the designated timeframe, focusing first on quick wins with potential for maximum impact.

Part II: Roadmap to Digitization of Payments In Ghana

The Roadmap identifies key actions and initiatives with potential for high impact. These initiatives will leverage on existing strengths and opportunities in the Ghanaian payments ecosystem, such as the growing use of mobile technology for financial transactions for effective digital transformation. The Roadmap is based on current government policy documents, results and recommendations from the Ghana Diagnostic Study (2017), as well as several workshops and stakeholder meetings held over the course of 2018.

It also relies heavily on the eight G20 High Level Principles for Digital Financial Inclusion. These are:

- 1 Principle One**
Promote a digital approach to financial inclusion
- 2 Principle Two**
Balance innovation and risk to achieve digital financial inclusion
- 3 Principle Three**
Provide an enabling and proportionate legal and regulatory framework for digital financial inclusion
- 4 Principle Four**
Expand the digital financial services infrastructure ecosystem
- 5 Principle Five**
Establish responsible digital financial practices to protect consumers
- 6 Principle Six**
Strengthen digital financial literacy and awareness
- 7 Principle Seven**
Facilitate customer identification for digital financial services
- 8 Principle Eight**
Track digital financial inclusion progress

The Roadmap is organized into three phases, each covering a period of two years, as follows:

Phase One: Expanding the Road to Digital Payments

Phase Two: Driving Payments into Accelerated Digitization

Phase Three: Sustaining the Pace of Digitization

For each phase, detailed initiatives are assigned to five thematic areas identified and distilled from various workshops organized by the Ministry of Finance with support from the Better Than Cash Alliance. These thematic areas are:

1. Transformational Policy Initiatives
2. Improved Governance Structures
3. Enabling Regulation and Oversight
4. Increased Access, Service Delivery, and Digital Payment Use Cases
5. Enhanced Infrastructure
6. Improved Capacity
7. Consumer Protection

Roadmap Initiatives

Phase One: Expanding the Road to Digital Payments

Phase one recommends scalable solutions to provide excluded Ghanaians with payment options in the shape and form they can relate to, thereby augmenting their payment opportunities. It also recommends actions that have potential for high impact to quickly open up and deepen the scope of digital payments in Ghana.

I. TRANSFORMATIONAL POLICY

A clear and strong articulation of Government commitment for the shift to digital payments will orient Ghanaians toward digitization and shape expectations and actions of the public.

1. Establish a cash-lite agenda

- a. Issue a DFS policy statement with a clear intention to shift to digital streams with well-structured, high-level implementation timelines
- b. Make pronouncements on commitment to and benefits of digitization at high-level meetings and forums
- c. Develop and issue policy directives targeted at dissuading cash usage at appropriate stages (rewards/penalties)
- d. Institute awards scheme in the second half of the phase for businesses (various categories), which excel in digitization journey
- e. Establish aggressive digitization targets for MMDAs (e.g., 100% digital payments starting in year 2). Ambitious targets will indicate the importance that government attaches to the digital transformation of the economy and set the tone for MDAs to follow.

2. Develop comprehensive incentive policy/schemes that targets lowering cost, increased access, and adoption of digital payments

- a. Tax Holiday (for fintechs)
- b. Tax Rebates (for consumers)
- c. Ghana First Policy (a decision to seek competent local firms for all of government's payment/digitization needs. In the absence of a competent firm, explore external providers who have to partner with local providers as is consistent with local content policy)
- d. Reduce taxes on smartphones, POSs, payment cards, and biometric authentication devices. Smartphones allow for greater innovation of DFS products and services and should be incentivized. Smartphones have data capability and will afford users internet facility

II. IMPROVED GOVERNANCE STRUCTURES

1. Streamline and strengthen existing governance structures for payment system development

A restructured and strong payment system governance architecture which gives clarity around roles and responsibilities and ensures effective implementation of strategies to drive long-term development of digital payments. It also provides a viable platform to work on solutions for ecosystem problems and challenges.

- a. Restructure the Payments System Council (PSC) set up by BOG.
 - i. Reconsider amending the existing membership structure to include: i) Chair, Governor, BOG; ii) Head, PSD, BOG; iii) Head FSD, MOF; iv) CEO, GhIPSS; v) GRA; vi) CAGD; vii) Telecoms Chamber; viii) Nominee from Ghana Assn. of Bankers; ix) NPRA; x) NIC; xi) NCA; xii) Data Commission; xiii) Payment System Expert
 - ii. Define minimum criteria for selection of representatives: a) Deep understanding of digital payments; b) Senior Executive level
- b. Reconstitute Working Groups (WGs). Instead of four, there should be five Working Groups as follows:
 - i. Standards
 - ii. Automation and Technology
 - iii. Operations and Fraud
 - iv. Pricing
 - v. Legal
- c. Identify capable leaders of the WGs and empower WGs to start work on various market challenges.
- d. Set up a Digital Payments Task Force (DPTF), an implementation body that can tap into knowledge base and expertise of all WGs under the PSC to drive the implementation of the Roadmap. Will work under the FSD and collaborate with the PSC for the period of the Roadmap implementation.

- e. Appoint a Chief Payments Digitization Officer to supervise the Task Force and provide leadership and drive to the implementation process. Will work directly under the Director, FSD to 1) Coordinate and lead the implementation process; 2) Collaborate closely with the PSC and with the Ministry of Communication on e-Transform Ghana Project; 3) Harmonize initiatives for successful implementation and the avoidance of duplication; 4) Track progress of implementation.

2. Establish a Public Relations Unit under FSD, MOF to coordinate the development of an integrated communication plan in concert with the Task Force, industry, MOI and a third-party public relations agency.

Such an entity would provide a strong voice to advocate and champion a successful and effective communication of government policy and orientation of the public to build confidence and trust and drive adoption of digital payments. It would:

- a. Draft a Communication Plan targeted at MDAs, individuals, merchants, and the public.
- b. Design uniform and agreed messages to be issued from time to time

3. Define governance structure of public digital infrastructure (e.g., GhIPSS, Ghana Post GPS, National ID platform).

- a. Publish requirements for access; rules for operating in the infrastructure; pricing/commercial/revenue models

III. ENABLING REGULATION AND OVERSIGHT

The regulatory system should suitably cater for and ensure the orderly integration and development of new technologies, such as RegTech, and of ecosystem players. RegTech utilizes digital data to improve oversight, develop smarter proportionate regulation, and ultimately, lower the cost of compliance. Through automation, regulators can save several man hours for both FSPs and regulatory authorities. Benefits from RegTech serve to strengthen consumer trust, consumer protection, data analysis, and risk-based KYC. Furthermore, data rules, regulations, and guidelines ensure clarity on rights of users of financial services and responsibilities of FSPs.

1. Enhance the existing enabling regulatory environment

- a. Spearhead and accelerate the passage of the Payment Systems and Services Bill into law
- b. Implement provisions of the Payment Systems and Services Act when passed
- c. Fully implement EMI and Agent Guidelines and requirements (e.g., grant the relevant licenses under the Payment Systems and Services Law)
- d. Institute legal framework and guidelines for e-receipts and e-invoices, e-KYC, digital signatures, etc.
- e. Institute a regulatory framework that supports innovation by fintechs, such as the implementation of standards, open systems, APIs, etc.
- f. Support the formation of an industry association by fintechs

2. Enhance and strengthen regulatory oversight

- a. Adopt regulatory technology (RegTech) to harness the power of data and technology to drive evidence-based policy making and market oversight
- b. Adopt regulatory innovations (e.g., Sandboxes to facilitate the approval process of innovative products and services)

3. Build strong collaboration amongst regulators

- a. Revive the Association of Industry Regulators and facilitate scheduled meetings

4. Institute structures to address fraud and cybercrime to build confidence and trust

- a. Introduce regulations to address cybercrime and provide a viable sanctions regime

5. Institute a data governance policy framework to enhance provisions of the Data Protection Act

- a. Issue guidelines on data management, data sharing, and data protection
- b. i) Build structures to enforce data-privacy laws, ii) Institute compliance cycles for FSPs and related companies to abide by
- c. Introduce consent-based data-sharing regulation between data controllers and other appropriately regulated DFS stakeholders
- d. Initiate a policy framework to institute “data democracy,” which gives consumers of financial products and services power over their own transactional data and protects them, the real owners of data, in line with global principles

IV. INCREASED ACCESS, SERVICE DELIVERY, AND DIGITAL PAYMENT USE CASES

Although the country has made significant progress in increasing access to financial services, a good proportion of Ghanaians either do not have access to or are unable to participate in what is available. It has been identified, for instance, that low ownership of mobile phones, especially among poor women and men, is a barrier to the uptake of DFS for that segment of population. Scalable solutions must be explored to meet the needs of this segment in the shape and form they can relate to: increase access to formal banking through agency banking, and achieve universal access to data and internet for all Ghanaians. At the heart of increased access to DFS is the deployment of internet and mobile technology to remote and unserved/underserved areas and government has targeted post offices to be upgraded into ICT centers to drive access to the government e-service platform to all citizens.

1. Conscious drive to increase access points for financial services

- a. Engage with FIs to increase agency banking for greater access to the unbanked
- b. Build interoperability of agent wallets to improve agent liquidity
- c. Develop a “white space” policy (i.e., areas without data coverage and infrastructure) to advance data access, especially to rural areas, based on need and level of economic activity
- d. Set aggressive communication coverage targets for GIFEC to ensure rural penetration. Targets should be informed by research/surveys

- e. Leverage post office network to create digital hubs for access to government e-services
- f. Support the deployment of subsidized mobile phones by using smart funding schemes to create access to basic smartphones countrywide

2. Accelerate digitization of all government payments (P2G, B2G, G2P, G2B, G2G)

This will facilitate the control of leakages, increase revenue collection, and make savings for government.

- a. Complete integration of the Public Financial Management (PFM), Ghana Integrated Financial Management Information System (GIFMIS), and the Treasury Single Account (TSA)
- b. Complete work on e-Procurement module
- c. Mandate the use of digital payments for all e-procurements
- d. Enable electronic of payments for all government services (market tolls, property tax, income tax). Aim to achieve 100% digital acceptance by end of phase two

3. Accelerate cash-lite agenda around basic economic activity

The potential for accelerating digitization, especially through merchant payments, is strong since it impacts the whole stratum of the ecosystem (government, business, merchants, and consumers).

- a. Provide support to digitize merchant payments, especially in the FMCG value chain. Identify value chain and provide solutions along the chain. Put security and reliability standards in place
- b. Set aggressive goals for merchants to digitize their payments
- c. Create incentives for companies to accept and/or make digital only payments.
- d. Tie in incentives (tax waivers, discounts, holidays) with proportion of digital payments transacted
- e. Facilitate discounts on purchases of POSs by merchants
- f. Engage fintechs to provide low-cost end-to-end solutions that integrate with internal systems of merchants
- g. Extend fintech engagements to support the digitization of payment transactions of market women and head porters in major markets
- h. Promote user choice of digital streams/products by improving user experience of digital modes of payment

4. Drive digitization of payments in the rural and agricultural ecosystem

The rural and agricultural ecosystem has not been adequately served with financial services. A targeted approach will help lift farmers and rural dwellers out of poverty. Value chain analysis is required to identify use cases and streamline the process of payments digitization.

- a. Design targeted policy underscored by research into areas of highest economic activity and crop cycles, specific needs of communities, pain-points, etc.
- b. Segment the value chain (e.g., Cocoa Marketing Company [CMC], Produce Buying Companies [PBCs], Agents, Farmers: planting, agricultural extension services, harvesting, marketing, transporting) and design appropriate policies
- c. Set up well-trained and equipped Transformational Teams to champion shift to digital in the rural communities
- d. Engage with FSPs to sign on grass-roots to improve last-mile access to financial services. In this regard, FSPs should be encouraged to leverage the electronic addressing system for financial services
- e. Incentivize PBCs to digitize their payment transactions
- f. Engage with fintechs to provide electronic support systems (pricing, demand, supply intelligence systems such as Mastercard's 2Kuze in East Africa, weather, crop advisories, troubleshooting) to farmers and other players in the value chain
- g. Engage with FSPs to introduce value-added services: credit, savings, insurance (tie in with primary needs: health, death, education, shelter, crop insurance)
- h. Capture and leverage work of NGOs in the development of appropriate products and services
- i. Institute e-KYC to support credit delivery
- j. Digitize the Susu system and devise packages that will draw unregistered Susu collectors into the formal system

5. Incentivize the use of EFT for RTGS payments in B2B transactions rather than the use of checks

- a. BOG to apply lower prices to EFT transactions than what pertains to checks
- b. Government to provide short-term income tax incentives for businesses that adopt digital means of payment

6. Promote deployment of e-insurance

- a. Address underlying issues of national ID system, national address systems, public education and integrated healthcare reporting system to tackle the issue of fraud
- b. Review Insurance Act of 2006 to be more progressive and forward looking. 1) Create incentives for products and policies that address scalable participation. 2) Eliminate "No premium no insurance cover rule." Rather, propagate a flexible premium payment system (e.g., "balloon-based" premium payment)
- c. Remove mandatory insurance policy requirements for insurance and instead allow use cases for insurance to drive customer buying decisions and create more competition within the industry. Insurance should be known for paying claims, not for amount of premiums collected

7. Promote digitization of remittances

- a. Engage with stakeholders to better understand needs of the remittance sector that would drive remittances into e-wallets, financial accounts

V. ENHANCED INFRASTRUCTURE

1. Enhance market infrastructure

- a. Complete work on the biometric identification system and escalate the registration process
- b. Ensure effective interoperability of bank and e-money payments (including e-zwich) on a single national switch
- c. Expand telecommunications connectivity

2. Revamp the internal systems of Public Utilities to enable them offer digitized services

- a. Upgrade smart distribution infrastructure of Public Utilities
- b. Upgrade legacy accounting systems to interface with sales, payment, and reconciliation systems
- c. Improve the business models of Public Utilities

3. Revamp the GEPP portal to achieve end-to-end processes and service delivery of government services

- a. Enhance GEPP payment Infrastructure:
 - a) digitally automate forms and processes;
 - b) develop USSD and app-based access for relevant services;
 - c) create open APIs;
 - d) re-engineer current internal processes
- b. Ensure smooth integration with MDAs
- c. Ensure smooth integration with national switch

VI. IMPROVED CAPACITY

A vibrant and enhanced digital ecosystem requires that the technical capacity of ecosystem players is primed to enable them perform efficiently and meet challenges that may arise.

1. Strengthen regulatory capacity:

- a. Undertake enhanced training for oversight practitioners
- b. Provide oversight tools and systems
- c. Provide technical assistance
- d. Increase the technical capacity and skill levels of the Data Protection Commission with regard to management of DFS data and enforcement of data protection laws

2. Build technical capacity and internal processes of Utility Providers: i) Electricity Corporation, Ghana Water Company; ii) MDAs

- a. Revamp the systems and processes of Utility Companies and MDAs
- b. Strengthen technical skills of MDAs and Utility Providers to enable them undertake and provide digital services

3. Strengthen technical skills of individuals

- a. Through financial literacy/education programs, strengthen technical skills of individuals to enable them undertake digital transactions

VI. CONSUMER PROTECTION

A public that is well informed and fully aware of the shift to digital and its implications is supportive of the vision to digitize

1. Deliver consumer awareness programs

- a. Design quality consumer awareness programs, which should be crafted to target public organs and the private sector
- b. Form partnerships with private sector to deliver sustained quality educational and awareness programs

2. Promote high-level financial literacy of Ghanaians

- a. Design quality educative financial literacy programs tailored to the needs and educational levels of target audiences
- b. Form partnerships with private sector to deliver sustained quality literacy programs

3. Create a comprehensive framework for financial consumer protection

- a. Implement and enforce the Consumer Recourse Guidelines and the Disclosure Rules for Credit Products
- b. Institute and enforce minimum Consumer Protection standards: convenient, free systems for complaint handling, liability, dispute resolution
- c. Implement deposit insurance scheme to ensure deposit protection for all financial accounts, including for individual e-money accounts
- d. Build structures to institute data democracy, which empowers and protects the real owners of data in line with global principles
- e. Strengthen market conduct supervision and monitoring to improve consumer protection
- f. Perform gap analysis on the existing consumer protection rules versus the proposed rules

Phase Two: Driving Payments into Accelerated Digitization

The second phase describes key actions that have the capability of galvanizing digital payments and escalating the rate of digitization in the country.

I. TRANSFORMATIONAL POLICY

This will build on the Better Than Cash Alliance Ghana Payments Diagnostic Report baseline survey to understand policy needs required to accelerate payment access and adoption. The output of this work can be used to properly identify:

- a. Adequately served areas
- b. Underserved areas with sufficient business potential
- c. Underserved areas with limited business potential

1. Establish a Payment Ecosystem Survey or data collection program to inform policy decisions

- a. Conduct a geospatial survey to better understand the distribution of existing financial access points, including:
 - i. Mobile Money Agent locations
 - ii. Bank branches
 - iii. ATMs/POSS
 - iv. NBFIs locations, etc.
- b. Establish a periodic survey to capture DFS-related data for policy decision making

2. Establish a cash-lite agenda

- a. Institute awards for businesses (various categories) that excel in digitization journey

II. ENABLING REGULATION AND OVERSIGHT

1. Institute structures to address fraud and cybercrime

- a. Institute an Electronic Fraud Forum to provide early warning of fraud and cybercrime in the financial system in Ghana and in other countries in the sub-region

2. Set up a financial ombudsman

A financial sector ombudsman to be appointed and given statutory authority to: 1) settle disputes between consumers and financial service providers, such as banks, EMIs, insurance companies, investment companies, etc.; 2) prosecute offenders; 3) apply sanctions

- a. Develop and publish policy to establish the ombudsman as a separate agency
- b. Initiate and promote the passage of the appropriate law
- c. Create the office of Ombudsman:
 - Office to be staffed with expertise across various financial services, as well as legal and law enforcement
 - Publicly accessible
 - Information available across channels (online, phone, social media, offices)
 - Leverage technology (e.g., R2A chatbot to improve efficiency and scale of complaint collection)

Key focus areas

- Bank accounts
- Credit, debit, and store cards
- Payment protection insurance (PPI)
- Other insurance, like motor, travel, and household
- Loans, including payday loans
- Other credit, like car finance
- Mortgages
- Repayment problems and debt collection
- Money transfers and online payments
- Financial advice, savings and investments, pensions

3. Set up Fair Competition Commission/Agency backed by appropriate legislation

To ensure fair competition and equitable practices amongst FSPs and industry players:

- a. Review and amend the competition law to cater for the payment system and promote its passage as a national competition law
- b. Set up the Commission or Authority and appoint relevant officers
- c. Issue guidelines relating to fair competition on USSD, Data, and SMS provided by Telcos and other communication service providers (CSPs) in support of financial service delivery

III. INCREASED ACCESS, SERVICE DELIVERY, AND PAYMENT USE CASES

1. Accelerate digitization of all government payments (P2G, B2G, G2P, G2B, G2G)

- a. Enforce and ensure digital payment for all government services and all government-owned utility services, such as Ghana Water, Electricity, especially in urban areas
- b. Enforce electronic collection of payments for all government services (market tolls, property tax, income tax). Aim to achieve 100% digital acceptance by end of phase two
- c. Mandate the use of digital payments for all government procurements

2. Promote the GEPP Portal as the main point of sale of government services and products

- a. Embark on massive public awareness and education program once the GEPP portal is up and running, to drive usage

3. Accelerate cash-lite agenda around basic economic activity

- a. Continue to digitize major FMCG value chains by initiating tax incentives (e.g., 1% to FMCGs as an incentive to accept digital payments only)
- b. Continue to improve infrastructure and network availability from phase one
- c. Continue to promote user choice of digital streams/products by improving user experience of digital modes of payment
- d. Integrate solution that allows one card to be accepted across all government services (e.g., AMA, etc.)
- e. Digitize transportation sector:
 - i. Establish pilot cashless stations with fully integrated cashless solutions, such as POSs, digital payment kiosks, and tap-n-go technology, to be rolled out to other stations across the country
 - ii. Upgrade toll booths with digital technology. QR code, NFC, and card-reading technology (pre-paid tab and call). Start with a few digital-payments-only booths and increase gradually
 - iii. Have easy onboarding process in traffic
- f. Offer incentives to merchants and users

4. Drive digitization of payments in the rural and agricultural ecosystem

- a. Expand the scope of the fully digitized informal sector pension scheme to cover more communities

- b. Continue to digitize payments in schools, hospitals, churches, farm inputs, and market systems in the rural areas to retain e-value within the rural ecosystem
- c. Ensure deployment of data and mobile technology to unserved areas

5. Incentivize the use of EFT for RTGS payments in B2B transactions rather than the use of checks and cash

- a. Initiate promotional initiatives and assess outcomes to determine level of acceptance of digital payments, and then cap cash withdrawals

IV. ENHANCED INFRASTRUCTURE

1. Incentivize fintechs

The role of fintechs as innovators in the financial service space is undisputed, and they must be incentivized to enable them the space and capacity to play their part in the transformational shift to digital payments.

- a. Set up a regulatory framework that supports fintechs to innovate and enables them to operate in the payments system without hindrance
- b. Drive the formation of an Industry Association to articulate their concerns and interests

V. CONSUMER PROTECTION

1. Deliver consumer awareness programs

- a. Form partnerships with private sector to deliver sustained quality educational and awareness programs involving sponsored airtime, SMS blasts from mobile network operators (MNOs), and funding from other private partners

2. Promote high-level financial literacy of Ghanaians

- a. Design quality educative financial literacy programs tailored to the needs and educational levels of target audiences. This may be more effectively delivered under the Financial Inclusion and Development Strategy and MOE to incorporate financial literacy in school curricula
- b. Form partnerships with private sector to deliver sustained quality literacy programs

3. Create a comprehensive framework for financial consumer protection

- a. Enforce the Consumer Recourse Guidelines and the Disclosure Rules for Credit Products
- b. Enforce minimum Consumer Protection standards: convenient, free systems for complaint handling, liability, dispute resolution

Phase Three: Sustaining the Pace of Digitization

It is envisaged that the first two phases would facilitate the prevalence of digital modes of payment and set the parameters for escalating the pace of digitization. Phase three recommends longer-term actions, which will sustain the momentum toward increased digitization of payments in Ghana.

I. INCREASED ACCESS, SERVICE DELIVERY, AND USAGE

- 1. Accelerate cash-lite agenda around basic economic activity**
 - a. Continue to improve infrastructure and network availability
 - b. Continue to promote user choice of digital streams/products by improving user experience of digital modes of payment
- 2. Drive digitization of payments in the rural and agricultural ecosystem**
 - a. Continue to widen the scope of coverage of the digitized rural insurance scheme
 - b. Continue to digitize payments in schools, hospitals, churches, farm inputs, market systems in the rural areas to retain e-value within the rural ecosystem
 - c. Continue to ensure deployment of data and mobile technology to unserved areas
- 3. Incentivize the use of EFT for RTGS payments in B2B transactions rather than the use of checks**
 - a. Issue directives to penalize the use of cash at the appropriate time, when digital modes are more prevalent

II. CONSUMER PROTECTION

- 1. Deliver consumer awareness programs**
 - a. Continue to form partnerships with private sector to deliver sustained quality educational and awareness programs
- 2. Promote high level financial literacy of Ghanaians**
 - a. Continue to administer quality educative financial literacy programs tailored to the needs and educational levels of target audiences
 - b. Continue to form partnerships with private sector to deliver sustained quality literacy programs
- 3. Create a comprehensive framework for financial consumer protection**
 - a. Continue to enforce the Consumer Recourse Guidelines and the Disclosure Rules for Credit Products
 - a. Continue to enforce minimum Consumer Protection standards: convenient, free systems for complaint handling, liability, dispute resolution

Lead Actors/Champions

Key Actors/Champions identified in the Roadmap are as follows:

Bank of Ghana

Ministries (Finance, Communication, Transport, Health, Education)

GhIPSS

Government Departments and Agencies (Ghana Revenue Authority, National Communication Authority, National Insurance Commission, NITA, Data Protection Commission, COCOBOD, Public Utilities)

Financial Service Providers

Mobile Money Operators (MMOs)

Fintechs

Key Success Factors

Key enablers for the success of the Roadmap include the following:

- a. Government commitment and effective communication of the vision. Government has so far demonstrated an indefatigable will to drive the process and keep the momentum going
- b. A consistent and empowered implementation team is a crucial role and would need to be formed early and staffed with skilled and qualified personnel
- c. Effective stakeholder engagements and consultations, especially amongst the Lead Actors and Champions identified in the Roadmap, should be sustained for stakeholder buy-in
- d. Public Private Partnerships should be explored and sustained for maximum impact
- e. Effective consumer education and awareness programs to engender consumer confidence
- f. The scope and level of incentives that government and other stakeholders are prepared to undertake will be critical to the success of scaling up digital payments in Ghana.
- g. Rural digitization efforts should be vigorously pursued to ensure comprehensive inclusiveness

Conclusion

With a young adult population, the majority of whom live above the poverty line, and relatively high literacy and numeracy levels, along with a healthy and a growing economy, it is evident that Ghana is well-positioned for the escalation of digital payments. CGAP posits that this profile serves to position Ghana as a country with great potential for expansion of digital financial services.³¹ The country has also developed a payments ecosystem that can boast of innovative regulation, foundational financial market infrastructure, and a growing and dynamic fintech community. Following countries like Kenya, Tanzania, and India, Ghana is leveraging mobile technology to leapfrog the shift of its payments to a fully digital regime. Expanding the country's payments digitization and fintech environment will not only add value to the overall payments system in terms of quality, efficiency, security, and convenience, but it will support efforts at increasing formal financial inclusion, with its attendant benefits of transparency, accountability, and increased revenues, and help reduce the use of cash. Indeed, the markedly declining proportion of Currency in Circulation to Narrow Money (a measure of the depth of the payment system) in Ghana, from 44% in 2012 to 36% in 2017, suggests that digital payment system channels and instruments are already being used more efficiently and effectively.³²

The Ghana Digital Payments Roadmap articulates viable and sustainable actions and initiatives critical to the achievement of an inclusive digital payments ecosystem and a cash-lite Ghana. The vision is to make DFS ubiquitous and pervasive within the fabric of Ghanaian society such that both financial and non-financial services, such as the provision of water, health services, education, and energy, is made by digital means. For this reason, emphasis has been given to active engagements with fintechs to provide innovative solutions that would form the backbone of the drive for digital payments. More important, all participants would need to embrace and incorporate upgraded technology, which can interface with shared infrastructure, such as the national switch and the National Identification System.

Potential Risks

On the other hand, success of the Roadmap can be jeopardized by the following:

- a. Poor coordination and implementation of initiatives are show stoppers and should be avoided
- b. A good number of interventions are substantially reliant on incentives, both monetary (tax and rewards incentives) and nonmonetary (recognition and support systems). A poorly funded and inadequately packaged incentive regime is likely to compromise the execution of initiatives and will undermine the success of the Roadmap
- c. Fraud and cyber-crime could seriously impair confidence in digital payments and hamper the adoption of digital modes of payment if not checked. Mitigation initiatives should, therefore, be thoroughly undertaken and sustained

Part III: Action-Oriented Summary

Phase 1: Expanding the Road to Digital Payments

1. TRANSFORMATIONAL POLICY

EXPECTED OUTCOMES MAIN ACTIVITIES ACTORS ★=Lead SUPPORT REQUIRED TIMELINE

Goal 1.1: Establish a cash-lite agenda

<p><i>Clear and strong articulation of government commitment for shift to digital payments will orient Ghanaians towards digitization, and will shape the expectations and actions of the public</i></p>	<p>1.1.1 Issue a digital financial services policy statement with clear intention to shift to digital streams with well-structured, high-level implementation timelines</p>	<p>★Ministry of Finance, Bank of Ghana</p>	—	Year 1
	<p>1.1.2 Make pronouncements on commitment to and benefits of digitization at high-level meetings and forums</p>	<p>★Ministry of Finance, Bank of Ghana</p>	—	Year 1
	<p>1.1.3 Develop and issue policy directives targeted at dissuading cash usage at appropriate stages (rewards/penalties)</p>	<p>★Ministry of Finance, Bank of Ghana</p>	—	Year 1
	<p>1.1.4 Institute awards for businesses (various categories) that excel in digitization journey</p>	<p>★Ministry of Finance, Bank of Ghana</p>	—	Year 1 (H2)
<p><i>Ambitious targets will indicate the importance that the government attaches to the digital transformation of the economy, and set the tone for ministries, departments, and agencies to follow</i></p>	<p>1.1.5 Establish aggressive digitization targets for ministries, departments, and agencies (e.g. 100% digital payments starting in Year 2)</p>	<p>★Bank of Ghana/Payment System Council, Ministry of Finance</p>	—	Year 1 (H2)

Goal 1.2: Develop comprehensive incentive policy/scheme that targets lowering cost, and increasing access to and the adoption of digital payments

<p><i>Smartphones allow for greater innovation of digital financial products and services, and should be incentivized. Smartphones have data capability and will afford users Internet facility</i></p>	<p>1.2.1 Tax holiday (for fintechs) Tax rebates (for consumers)</p> <p>Ghana First Policy (a decision to seek competent local firms for all of the government's payment/digitization needs. In the absence of a competent firm, explore external providers who have to partner with local providers, as is consistent with local content policy)"</p>	<p>★Ministry of Finance, Payment System Council, Procurement Authority, Technology Chamber</p>	—	Year 1 (H2)
	<p>1.2.2 Reduce taxes on smartphones, point-of-sale solutions, payment cards, and biometric authentication devices</p>	<p>★Ministry of Finance, Payment System Council, Procurement Authority, Technology Chamber</p>	—	Year 1 (H2)

2. IMPROVED GOVERNANCE STRUCTURES

EXPECTED OUTCOMES	MAIN ACTIVITIES	ACTORS	★=Lead	SUPPORT REQUIRED	TIMELINE
Goal 2.1: Streamline and strengthen existing governance structures for payment system development					
<i>A restructured and strong payment system governance architecture that gives clarity on roles and responsibilities, and ensures the effective implementation of strategies to drive the long-term development of digital payments</i>	2.1.1 Restructure the Payments System Council set up by the Bank of Ghana	Ministry of Finance, ★Bank of Ghana	—	—	First 6 months
	1) Consider amending the existing membership to: (i) Chair, Governor, Bank of Ghana (ii) Head, PSD, Bank of Ghana (iii) Head, Financial Sector Division, Ministry of Finance (iv) CEO, GhIPSS (v) Ghana Revenue Authority (vi) CAGD (vii) Telecoms Chamber (viii) Nominee from Ghana Association of Bankers (ix) NPRA (x) National Insurance Commission (xi) National Communication Authority (xii) Data Commission (xiii) payment system expert	Ministry of Finance, ★Bank of Ghana	—	Lessons from other jurisdictions/ peer learning	Year 1
	2) Define minimum criteria for selection of representatives: (i) Deep understanding of digital payments (ii) Senior executive level	Ministry of Finance, ★Bank of Ghana	—	—	Year 1
	3) Reconstitute WGs. Instead of four, there should be five WGs, as follows: (1) Standards (2) Automation and technology (3) Operations and fraud (4) Pricing (5) Legal	Ministry of Finance, ★Bank of Ghana	—	—	Year 1
<i>Viable platform to work on solutions for ecosystem problems and challenges</i>	4) Identify capable leaders of the WGs and empower WGs to start work on various market challenges	Ministry of Finance, ★Bank of Ghana	—	—	Year 1
	2.1.2 Set up a Digital Payments Task Force (DPTF) to drive the implementation of the road map. Will work under the Financial Sector Division and collaborate with the Payment System Council for the implementation period	★Ministry of Finance, Headed by the Head, Financial Sector Division, Ghana Post, GhIPSS, NIA, Bank of Ghana, National Information Technology Agency, Ghana Revenue Authority, member of the Technology Chamber, Securities and Exchange Commission	—	—	Year 1
<i>Industry credibility, leadership and drive for the implementation process is established</i>	2.1.3 Appoint a chief payments digitization officer to supervise the DPTF. Will work directly under the director, Financial Sector Division to: (1) Coordinate and lead the implementation process (2) Collaborate closely with the Payment System Council and Ministry of Communication on the e-Transform Ghana Project (3) Harmonize initiatives for successful implementation and the avoidance of duplication (4) Track implementation progress	★Ministry of Finance	—	Funding	Year 1
Goal 2.2: Establish a public relations (PR) unit under Ministry of Finance's Financial Sector Division to coordinate the development of an integrated communication plan in concert with the task force, industry, MoI, and a third-party public relations agency					
<i>Such an entity would provide a strong voice to advocate and champion a successful and effective communication of government policy and orientation of the public to build confidence and trust, and drive adoption of digital payments</i>	2.2.1 Draft a communication plan targeted at ministries, departments, and agencies, individuals, merchants, and the public. An external professional PR agency should manage this and it will sit at the Ministry of Finance under the Financial Sector Division	★Ministry of Finance, Bank of Ghana, MoC, MoI, NCCE, financial service providers, National Communication Authority, operations and fraud working group	—	1) Training for members of the unit in digital payments and change management 2) Equip the unit with the necessary logistics	Year 1
	2.2.2 Design uniform and agreed messages to be issued from time to time	★Ministry of Finance, Bank of Ghana, MoC, MoI, NCCE, financial service providers, National Communication Authority, operations and fraud working group	—	—	Year 1
Goal 2.3: Define the governance structure of public digital infrastructure e.g. GhIPSS, Ghana Post GPS, national ID platform					
	2.3.1 Publish requirements for access, rules for operating in/on the platform, and pricing/commercial/revenue models	GhIPSS, Bank of Ghana, ★Ministry of Finance, Ghana Post, NIA	—	—	Year 2

3. ENABLING REGULATION AND OVERSIGHT

EXPECTED OUTCOMES	MAIN ACTIVITIES	ACTORS	★=Lead	SUPPORT REQUIRED	TIMELINE
Goal 3.1: Enhance the existing enabling regulatory environment					
<i>The regulatory system suitably caters for and ensures the orderly integration and development of new technologies, and players in the ecosystem</i>	3.1.1 Spearhead and accelerate the passage of the Payment Systems and Services Bill into law	★Ministry of Finance, Bank of Ghana, National Communication Authority, National Insurance Commission, Data Protection Commission		Ministry of Finance to drive initiative to achieve this goal	First 6 months
	3.1.2 Implement provisions of the Payment Systems and Services Act when passed	★Bank of Ghana		Payment System Council WGs to work on any challenges	First 6 months
	3.1.3 Fully implement electronic money issuer and agent guidelines and requirements, e.g. grant the relevant licenses under the PSSL	★Bank of Ghana		—	First 6 months
	3.1.4 Institute legal framework and guidelines for e-receipts and e-invoices, e-know your customer (e-KYC), digital signatures, etc.	★Bank of Ghana, Ministry of Finance, National Identity Authority, Data Protection Agency, Judicial Service, financial institutions		The Electronic Communications Act 2008/09 should be amended to cater for recent developments	—
	3.1.5 Institute a regulatory framework that supports innovation by fintechs such as the implementation of standards, open systems, application programming interfaces (APIs), etc.	★Bank of Ghana		Capacity-building required for Bank of Ghana staff to regulate effectively	—
	3.1.6 Support the formation of an industry association	★Bank of Ghana, Ministry of Finance, fintechs, telecommunications companies		Stakeholder engagements	—

Goal 3.2: Enhance and strengthen regulatory oversight

<i>RegTech utilizes digital data to improve oversight, develop smarter proportionate regulation, and, ultimately, lower the cost of compliance. Through automation, regulators can save several hours for both financial service providers and regulatory authorities. Benefits from RegTech serve to strengthen consumer trust, consumer protection, data analysis, and risk-based 'know your customer'</i>	3.2.1 Adopt regulatory technology (RegTech) to harness the power of data and technology to drive evidence-based policymaking and market oversight	★Bank of Ghana, Ministry of Finance, Development partners		Strengthen regulatory capacity: 1) Undertake enhanced training for oversight practitioners; 2) Provide oversight tools and systems; 3) Technical assistance	—
	3.2.2 Adopt regulatory innovations: e.g. sandboxes to facilitate the approval process of innovative products and services	★Bank of Ghana, Development partners		Peer learning	—

EXPECTED OUTCOMES	MAIN ACTIVITIES	ACTORS	★=Lead	SUPPORT REQUIRED	TIMELINE
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Goal 3.3: Build strong collaboration among regulators

	3.3.1 Revive the Association of Industry Regulators, and ensure regular meetings	★Bank of Ghana, National Communication Authority, National Insurance Commission, Data Protection Commission, U.S. Securities and Exchange Commission, NPRA		—	—
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Goal 3.4: Institute structures to address fraud and cybercrime

<i>Build confidence and trust by instituting measures to deal with fraud in the financial system</i>	3.4.1 Introduce regulations to address cybercrime, and provide a viable sanctions regime	★Ghana Police, EOCO, Bank of Ghana (Payment System Council), Financial Intelligence Center, National Communication Authority, INTERPOL		1) The Payment System Council operations and fraud WG should co-opt or engage with listed stakeholders and other WGs (such as Ghana Computer Emergency Response Team, CERT) to work on this initiative 2) Capacity-building for operations and fraud WG	Phase 1
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Goal 3.5: Institute a Data Governance Policy Framework to enhance the provisions of the Data Protection Act

<i>Data rules, regulations, and guidelines ensure clarity about the rights of users of financial services, and the responsibilities of financial service providers</i>	3.5.1 Issue guidelines on data management, data sharing, and data protection	★Data Protection Commission		Legal and data protection knowledge	Phase 1
	3.5.2 (1) Build structures to enforce data-privacy laws (2) Institute compliance cycles for financial service providers and related companies to abide by	★Data Protection Commission		—	—
	3.5.3 Introduce consent-based data-sharing regulation between data controllers and other appropriately regulated digital financial services stakeholders	★Data Protection Commission		Build capacity to increase skill levels	—
	3.5.4 Initiate a policy framework to institute a “data democracy” that gives consumers of financial products and services power over their own transactional data, and protects them, the real owners of data, in line with global principles	★Data Protection Commission		—	—

4. INCREASED ACCESS, SERVICE DELIVERY, AND DIGITAL PAYMENT USE CASES

EXPECTED OUTCOMES	MAIN ACTIVITIES	ACTORS	★=Lead	SUPPORT REQUIRED	TIMELINE
Goal 4.1: Conscious drive to increase access points for financial services					
<i>Although the country has made significant progress in increasing access to financial services, a good proportion of Ghanaians either do not have access to what is available, or are unable to participate in it. Scalable solutions must be explored to meet these needs, in the shape and form that people can relate to</i>	4.1.1 Engage with financial institutions to increase agency banking for greater access to the unbanked	★Bank of Ghana Banks and NBFIs Fintechs Ministry of Finance		Training, derisking initiatives and policy	Phase 1
	4.1.2 Build interoperability of agent wallets to improve agent liquidity	★Bank of Ghana Banks and NBFIs Fintechs Ministry of Finance		—	Phase 1
<i>Increased access to formal banking access points through agency banking</i>					
<i>Achieve universal access to data and internet for all of Ghanaians. At the heart of increased access to digital financial services is the deployment of Internet and mobile technology to remote and unserved/underserved areas</i>	4.1.3 Develop a white space policy (i.e. areas without data coverage and infrastructure) to advance data access to rural communities	★National Communication Authority, MoC, Telecom Chamber, telecommunications companies		Policy	Phase 1
	4.1.4 Set aggressive communication coverage targets for Ghana Investment Fund for Electronic Communications to ensure rural penetration. Targets should be informed by research and surveys	★National Communication Authority, MoC, Telecom Chamber, telecommunications companies		Policy	Phase 1
<i>Government has targeted post offices to be used as information and communications technology (ICT) centers to drive access to the Internet for rural markets, and, in the long run, the use of the e-service platform for all citizens</i>	4.1.5 Leverage post office network to create digital hubs for access to government e-services	★Post Office, National Information Technology Agency, Ministry of Finance		Policy	Phase 1
	4.1.6 Support the deployment of subsidized mobile phones by using smart funding schemes to create access to basic smartphones countrywide	★MNOs, Ministry of Finance, MoC		Policy	Phase 1
Goal 4.2: Accelerate the digitization of all government payments (people to government, business to government, government to people, government to business, government to government)					
<i>Control leakages, increase revenue collection, make savings for government</i>	4.2.1 Complete integration of the Public Financial Management (PFM), Ghana Integrated Financial Management Information System (GIFMIS), and the Treasury Single Account (TSA)	★Ministry of Finance, Bank of Ghana, technical assistance		Massive stakeholder consultation and massive PR to get main participants onboard. Digitization champion spearheading this initiative	Phase 1
	4.2.2 Complete work on e-procurement module	★Ministry of Finance, Bank of Ghana, technical assistance		Digitization champion spearheading this initiative. Technical assistance	Phases 1 and 2
	4.2.3 Mandate the use of digital payments for all e-procurements	★Ministry of Finance, CAGD, Ministries, departments, and agencies		—	—
	4.2.4 Enable electronic collection of payments for all government services (market tolls, property tax, income tax). Aim to achieve 100% digital acceptance by the end of Phase 2	★Ministry of Finance, National Information Technology Agency, Metro Authorities, VELD		Commitment from government Funding to support the initiative Open tenders for respective collections	Phases 1 and 2

Goal 4.3: Accelerate the cash-lite agenda around basic economic activity

<p><i>The potential for accelerating digitization through merchant payments is strong since it impacts the whole stratum of ecosystem (government, business, merchants, public)</i></p>	<p>4.3.1 Provide support to digitize merchant payments, especially in the FMCG value chain. Identify value chain, and provide solutions along the chain. Put security and reliability standards in place</p>	<p>★FMCG, Ministry of Finance, Ministry of Transport, Ghana Revenue Authority, Payment System Council, fintechs</p>	<p>Tax incentive of 1% to FMCG as an incentive to accept digital only. Training and funding for stakeholder participation</p>	<p>Phases 1 and 2</p>
	<p>4.3.2 Set aggressive goals for merchants to digitize merchant payments</p>	<p>★Ministry of Finance, Ministry of Transport, Ghana Revenue Authority, Trade Associations, Payment System Council, Bank of Ghana</p>	<p>Policy, broad stakeholder engagement, training</p>	<p>Phases 1 and 2</p>
	<p>4.3.3 Create incentives for companies that accept and/or make digital-only payments</p>	<p>★Ministry of Finance, Ministry of Transport, Ghana Revenue Authority, trade associations, Payment System Council, Bank of Ghana</p>	<p>Policy, broad stakeholder engagement, funding, tax incentives</p>	<p>Phases 1 and 2</p>
	<p>4.3.4 Tie incentives (tax waivers, discounts, holidays) to proportion of digital payments transacted</p>	<p>★Ministry of Finance, Ghana Revenue Authority, Bank of Ghana</p>	<p>Publicize incentive programs and showcase success stories</p>	<p>Phase 1</p>
	<p>4.3.5 Facilitate discounts on purchases of point-of-sale solutions by merchants</p>	<p>★Ministry of Finance, Financial service providers</p>	<p>—</p>	<p>Phase 1</p>
	<p>4.3.6 Engage fintechs to provide low-cost end-to-end solutions that integrate with internal systems of merchants</p>	<p>★Ministry of Finance, Bank of Ghana, fintechs, financial service providers, merchants</p>	<p>Ensure local content in fintech solutions</p>	<p>Phase 1</p>
	<p>4.3.7 Extend fintech engagements to support the digitization of payment transactions of market women and head porters in major markets</p>	<p>—</p>	<p>—</p>	<p>—</p>
	<p>4.3.8 Promote user choice of digital streams/products by improving user experience of digital modes of payment</p>	<p>★Fintechs, financial service providers, Bank of Ghana, merchants</p>	<p>—</p>	<p>Phase 1–3</p>

Goal 4.4: Drive the digitization of payments in the rural and agricultural ecosystem

<p><i>The rural and agricultural ecosystem has not been adequately served with financial services. A targeted approach will help lift farmers and rural dwellers out of poverty</i></p>	<p>4.4.1 Design targeted policy underscored by research into areas of highest economic activity and crop cycles, specific needs of communities, pain points, etc.</p>	<p>(1) ★Ministry of Finance (research), Ministry of Agriculture, cocoa marketing companies, COCOBOD</p> <p>(2) Banks, rural and community banks, mobile money operators (agent network)</p> <p>(3) Bank of Ghana, National Insurance Commission, National Communication Authority</p> <p>(4) Payment System Council, GhIPSS, academia, fintechs, municipal assemblies</p>	<p>Design commercial model for private sector participation. Stakeholder training and funding</p>	<p>Phase 1</p>
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EXPECTED OUTCOMES	MAIN ACTIVITIES	ACTORS	★=Lead	SUPPORT REQUIRED	TIMELINE
<i>Not much work has been done to educate farmers on how they can digitize their activities. Value-chain analysis is needed to identify use cases and streamline the process of payments digitization</i>	4.4.2 Segment the value chain: (eg. cocoa marketing company, produce-buying companies, produce-buying company agents, farmers; planting, agricultural extension services, harvesting, marketing, transporting), and design appropriate policies	★Ministry of Finance (Task Force), Ministry of Agriculture, fintechs, Bank of Ghana, financial service providers, Ministry of Transport, Payment System Council		—	Phase 1
	4.4.3 Set up well trained and equipped transformational teams to champion the shift to digital in rural communities	★Ministry of Finance (task force), Ministry of Agriculture, Fintechs, Bank of Ghana, financial service providers, Payment System Council		—	Phase 1
	4.4.4 Engage with financial service providers to sign on grass-roots to improve last mile access to financial services. In this regard, financial service providers should be encouraged to leverage the electronic addressing system for financial services	Ministry of Finance, ★Bank of Ghana, National Communication Authority, Ghana Post		—	Phase 1
	4.4.5 Incentivize produce-buying companies to digitize their payment transactions	★Ministry of Finance, Bank of Ghana, COCOBOD, produce-buying companies		—	Phase 1
	4.4.6 Engage with fintechs to provide electronic support systems (pricing, demand, supply intelligence systems - such as Mastercard's 2KUZE in East Africa - weather, crop advisories, troubleshooting) to farmers and other players in the value chain	★Ministry of Finance (Task Force), Ministry of Agriculture, Fintechs, Bank of Ghana, financial service providers, Ministry of Transport, Payment System Council		—	Phase 1
	4.4.7 Engage with financial service providers to introduce value-added services: credit, savings, insurance (tie in with primary needs: health, death, education, shelter, crop insurance)	★Ministry of Finance (Task Force), Ministry of Agriculture, fintechs, mobile money operators, Bank of Ghana, financial service providers, Ministry of Transport, Payment System Council, insurance and credit firms, etc.		—	Phase 1
	4.4.8 Capture and leverage the work of nongovernmental organizations in the development of appropriate products and services	★Bank of Ghana, Ministry of Finance		—	Phase 1
	4.4.9 Institute e-KYC to support credit delivery	★Bank of Ghana		—	Phase 1
	4.4.10 Digitize the Susu system and devise packages that will draw unregistered Susu collectors into the formal system	★Bank of Ghana		—	Phase 1

EXPECTED OUTCOMES	MAIN ACTIVITIES	ACTORS	★=Lead	SUPPORT REQUIRED	TIMELINE
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Goal 4.5: Incentivize the use of electronic funds transfer for real-time gross settlement payments in business-to-business transactions rather than the use of checks

	4.5.1 Bank of Ghana to apply lower prices to electronic funds transfer transactions compared with prices applied to checks	Bank of Ghana, ★GhIPSS	—	—	
	4.5.2 Government to provide short-term income tax incentives for businesses that adopt digital means of payment	Bank of Ghana, ★Ministry of Finance, Ghana Revenue Authority	—		Phase 1

Goal 4.6: Promote the deployment of e-insurance

<i>Increased market penetration to insurance through digital channels of distribution, customer recourse mechanisms, claims processing and payments</i>	4.6.1 Address underlying issues of national ID system, national address systems, public education, and integrated healthcare reporting system to tackle the issue of fraud	★National Insurance Commission, insurance companies (public and private)	—	—	
<i>Encourage insurtech participation in product design and distribution on behalf of underwriters. Reduce chartered insurance status for senior-level management roles to attract fresh minds and ideas into the industry</i>	4.6.2 Review Insurance Act of 2006 to be more progressive and forward looking. (1) Create incentives for products and policies that address scalable participation (2) Eliminate “No premium, no insurance policy”. Propagate flexible premium payment system e.g. balloon-based premium payment	★National Insurance Commission, Ministry of Finance, Ghana Insurers Association	Training, funding		Phase 1
<i>Tackle negative public perception of insurance. Drive positive PR on the benefits of insurance</i>	4.6.3 Remove mandatory insurance policy requirements for insurance, and instead allow use cases for insurance to drive customers’ buying decisions, and create more competition within the industry. Insurance should be known for paying claims, not for amount of premiums collected	★National Insurance Commission, Ministry of Finance, GIA	—		Phase 1

Goal 4.7: Promote the digitization of remittances

	4.7.1 Engage with stakeholders to better understand the needs of the remittance sector that would drive remittances into e-wallets, financial accounts	★Ministry of Finance, Bank of Ghana, financial service providers, fintechs, mobile money operators, remittance companies	—		Phase 1
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5. ENHANCED INFRASTRUCTURE

EXPECTED OUTCOMES	MAIN ACTIVITIES	ACTORS	★=Lead	SUPPORT REQUIRED	TIMELINE
Goal 5.1: Enhance market infrastructure					
<i>Enhanced efficiency and quality of systems to promote adoption</i>	5.1.1 Complete work on the biometric identification system, and escalate the registration process	★National Insurance Commission, Ministry of Finance		—	—
	5.1.2 Ensure the effective interoperability of bank and e-money payments (including e-zwich), on a single national switch	Bank of Ghana, ★GhIPSS		—	—
	5.1.3 Expand telecommunications connectivity	—		—	—
Goal 5.2: Revamp the internal systems of public utilities to enable them offer digitized services					
	5.2.1 Upgrade the smart distribution infrastructure of public utilities	Ministry of Finance, ★public utilities		—	—
	5.2.2 Upgrade the legacy accounting systems to interface with sales, payment, and reconciliation systems	Ministry of Finance, ★public utilities		—	—
	5.2.3 Improve the business models of public utilities	Ministry of Finance, ★public utilities		—	—
Goal 5.3: Revamp the Ghana E-Payment Portal (GEPP) portal to achieve end-to-end processes and service delivery of government services					
	5.3.1 Enhance GEPP payment infrastructure: (1) Digitally automate forms and processes (2) Develop unstructured supplementary service data (USSD) and app-based access for relevant services (3) Create open APIs (4) Re-engineer current internal processes	Ministry of Finance, ★National Information Technology Agency, Bank of Ghana, GhIPSS, ministries, departments, and agencies, AMA, Ghana Revenue Authority		Government authorities should seek private-sector expertise to ensure good development and operation of the GEPP	—
	5.3.2 Ensure smooth integration with ministries, departments, and agencies	—		—	—
	5.3.3 Ensure smooth integration with National Switch	★National Information Technology Agency		—	—

6. IMPROVED CAPACITY

EXPECTED OUTCOMES MAIN ACTIVITIES ACTORS ★=Lead SUPPORT REQUIRED TIMELINE

Goal 6.1: Strengthen regulatory capacity

<i>A vibrant and enhanced digital ecosystem requires that the technical capacity of players in the ecosystem is primed to enable them to perform efficiently, and to meet challenges</i>	6.1.1	Undertake enhanced training for oversight practitioners	—	—	—
	6.1.2	Provide oversight tools and systems	—	—	—
	6.1.3	Provide technical assistance	—	—	—
	6.1.4	Increase the technical capacity and skill levels of the Data Protection Commission with regard to the management of digital financial services data, and the enforcement of data protection laws	★Data Protection Commission	—	—

Goal 6.2: Build the technical capacity and internal processes of (1) Utility providers: Electricity Corporation, Ghana Water Company; and (2) Ministries, departments, and agencies

	6.2.1	Revamp the systems and processes of utility companies and ministries, departments, and agencies	Ministry of Finance, ★public utilities	—	—
	6.2.2	Strengthen the technical skills of ministries, departments, and agencies, and utility providers to enable them to undertake and provide digital services	★Ministry of Finance, ministries, departments, and agencies, utility companies	—	—

Goal 6.3: Strengthen the technical skills of individuals

	6.3.1	Through financial literacy/education programs, strengthen the technical skills of individuals to enable them undertake digital transactions	Ministry of Finance, ★Bank of Ghana	—	—
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7. CONSUMER PROTECTION

EXPECTED OUTCOMES	MAIN ACTIVITIES	ACTORS	★=Lead	SUPPORT REQUIRED	TIMELINE
Goal 7.1: Deliver consumer-awareness programs					
<i>A public that is fully aware of the shift to digital and its implications, and is supportive of the vision to digitize</i>	7.1.1 Design quality consumer awareness programs which should be crafted to target public organs and the private sector	★Ministry of Finance, media houses, NCCE, traditional leaders, religious bodies, Information Service Department		Funding; articulation of political vision and commitment	Phase 1
	7.1.2 Form partnerships with private sector to deliver sustained quality educational and awareness programs	Ministry of Finance, PR entities, MOC, MOI, Bank of Ghana, ★financial service providers, Consumer Protection Agency, industry players (e.g. TUC, etc)		Sponsored airtime, SMS blasts from MNOs, and funding from other private partners	All
Goal 7.2: Promote a high level of financial literacy among Ghanaians					
<i>Well-informed public on financial services and products to drive financial empowerment</i>	7.2.1 Design quality educative financial literacy programs tailored to the needs and educational levels of target audiences. This may be more effectively delivered under the Financial Inclusion and Development Strategy	★Ministry of Finance, ★Bank of Ghana, Ministry of Education, financial service providers, mobile money operators, content developers, creative designers		Funding; Ministry of Education to incorporate financial literacy in school curriculum	All
	7.2.2 Form partnerships with the private sector to deliver sustained, quality literacy programs	★Ministry of Finance, ★Bank of Ghana, Ministry of Education, financial service providers, mobile money operators, content developers, creative designers		Funding	All
Goal 7.3: Create a comprehensive framework for financial consumer protection					
<i>Simplified disclosure and recourse mechanism that can easily be understood by all parties, and is effective in protecting the consumer</i>	7.3.1 Implement and enforce the Consumer Recourse Guidelines and the Disclosure Rules for Credit Products	★Bank of Ghana, financial service providers		Technical support for the development of digital channels for customer complaints	All
	7.3.2 Institute and enforce minimum consumer protection standards – convenient, free systems for complaint handling, liability, dispute resolution	Bank of Ghana, all regulators		Collaborate with financial service providers	All
	7.3.3 Implement Deposit Insurance Scheme to ensure deposit protection for all financial accounts, including for individual e-money accounts	Ghana Deposit Protection Corporation, National Insurance Commission, Ministry of Finance, financial service providers, ★Bank of Ghana		Create a platform for continuous training, and collaborate with all principal actors	All
	7.3.4 Build structures to institute a data democracy that empowers and protects the real owners of data, along global principles	★Data Protection Commission, all industry players		Finance, Data Protection Commission to re-enforce	All
	7.3.5 Strengthen the supervision and monitoring of market conduct to improve consumer protection	★Bank of Ghana, Ministry of Finance, National Insurance Commission, Data Protection Commission, fintechs		Technical assistance; capacity-building for principal actors	—
	7.3.6 Perform gap analysis on the existing consumer protection rules versus the proposed	★Bank of Ghana, Ministry of Finance		Funding and technical assistance	Phase 1 (Year 2)

Phase Two: Driving Payments into Accelerated Digitization

1. TRANSFORMATIONAL POLICY

EXPECTED OUTCOMES	MAIN ACTIVITIES	ACTORS	★=Lead	SUPPORT REQUIRED	TIMELINE
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Goal 1.1: Establish a cash-lite agenda

	1.1.1 Institute awards for businesses (various categories) that excel in the digitization journey	—		—	—
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Goal 1.2: Establish a payment ecosystem survey/data-collection program to inform policy decisions

<p><i>This will build on the Better Than Cash Alliance's Ghana Payments Diagnostic baseline survey to understand policy needs required to drive payment access and adoption</i></p> <p><i>The output of this work can be used to properly identify:</i></p> <p><i>a. Adequately served areas</i></p> <p><i>b. Underserved areas with sufficient business potential</i></p> <p><i>c. Underserved areas with limited business potential</i></p>	<p>1.2.1 Conduct a geospatial survey to understand the distribution of existing financial access points, including:</p> <ul style="list-style-type: none"> – Mobile Money Agent locations – Bank branches – ATMs/points of sale – NBFIs' locations etc. 	★Bank of Ghana Ministry of Finance		Funding, consultancy	—
	<p>1.2.2 Establish a periodic survey to capture digital financial services-related data for policy decision making</p>	★Bank of Ghana		—	—

2. ENABLING REGULATION AND OVERSIGHT

Goal 2.1: Institute structures to address fraud and cybercrime

	2.1.1 Institute an electronic fraud forum to provide early warning of fraud and cybercrime in the financial system in Ghana and in other countries in the subregion	★Bank of Ghana, Ministry of Finance, FIC, DPA		Peer learning, technical assistance	Phase 2
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EXPECTED OUTCOMES	MAIN ACTIVITIES	ACTORS	★=Lead	SUPPORT REQUIRED	TIMELINE
Goal 2.2: Set up a financial ombudsman					
<i>A financial ombudsman to be appointed and given statutory authority to:</i> <i>(1) Settle disputes between consumers and financial service providers such as banks, electronic money issuers, insurance companies, investment companies, etc.</i> <i>(2) Prosecute offenders</i> <i>(3) Apply sanctions</i>	2.2.1 Develop and publish policy to establish the ombudsman as a separate agency	★Ministry of Finance, ★Bank of Ghana, National Insurance Commission, NPRA, U.S. Securities and Exchange Commission, financial service providers, EOCO, FIC	—		Phase 2
	2.2.2 Initiate and promote the passage of the appropriate law	★Ministry of Finance, ★Bank of Ghana, National Insurance Commission, NPRA, financial service providers, EOCO, FIC	—		Phase 2
	2.2.3 Create the office of ombudsman Office to be staffed with expertise across various financial services as well as legal and law enforcement – Publicly accessible – Information available across channels (online, phone, social media, offices) – Leverage technology e.g. R2A chatbot to improve efficiency and scale of complaint collection Key focus areas: – Bank accounts – Credit, debit, and store cards – Payment protection insurance (PPI) – Other insurance, like motor, travel, and household – Loans, including payday loans – Other credit, like car finance – Mortgages – Repayment problems and debt collection – Money transfers, and online payments – Financial advice, savings and investments, pensions	★Ministry of Finance, ★Bank of Ghana, National Insurance Commission, NPRA, financial service providers, EOCO, FIC, fintechs	Consumer awareness campaigns on the work of the ombudsman		By the end of year 3
Goal 2.3: Set up a fair competition commission/agency backed by appropriate legislation					
<i>Ensures fair competition and equitable practices among financial service providers and industry players</i>	2.3.1 Review and amend the competition law to cater for the payment system and promote its passage as a national competition law	★Ministry of Finance, Bank of Ghana, National Communication Authority, Telecom Chamber, Fintech Association, U.S. Securities and Exchange Commission	—		Phase 2
	2.3.2 Set up the commission or authority, and appoint relevant officers	★Ministry of Finance, Bank of Ghana, National Communication Authority, Telecom Chamber, Fintech Association, U.S. Securities and Exchange Commission	Undertake orientation, training and capacity-building of officers		Phase 2
	2.3.3 Issue guidelines relating to fair competition on unstructured supplementary service data (USSD), data, and SMS provided by telecommunications companies and other communication service providers (CSPs) in support of financial service delivery	★Ministry of Finance, Bank of Ghana, National Communication Authority, Telecom Chamber, Fintech Association, U.S. Securities and Exchange Commission	—		Phase 2

3. INCREASED ACCESS, SERVICE DELIVERY, AND DIGITAL PAYMENT USE CASES

EXPECTED OUTCOMES MAIN ACTIVITIES ACTORS ★=Lead SUPPORT REQUIRED TIMELINE

Goal 3.1: Accelerate the digitization of all government payments (people to government, business to government, government to people, government to business, government to government)

EXPECTED OUTCOMES	MAIN ACTIVITIES	ACTORS	SUPPORT REQUIRED	TIMELINE
<i>Digital payments for all government services</i>	3.1.1 Ensure and enforce digital payment for all utility services such as Ghana Water, electricity, especially in urban areas	★Ministry of Finance, Bank of Ghana, utility services, government agencies, trade unions, tech community	Improved IT infrastructure, training, funding, stakeholder engagement, public-private partnerships with unique skill sets, and with the right revenue model. System integrity	Phase 2
	3.1.2 Enforce electronic collection of payments for all government services (market tolls, property tax, income tax). Aim to achieve 100% digital acceptance by the end of Phase 2	★Ministry of Finance, National Information Technology Agency, metro authorities, VELD	Commitment from government Funding to support the initiative Open tenders for respective collections	Phases 1 and 2
	3.1.3 Mandate the use of digital payments for all government procurements	★Ministry of Finance	Policy, directives; Ministry of Finance must push mandate out and restrict amount of cash available for payments	Phase 2

Goal 3.2: Promote the Ghana E-Payment Portal (GEPP) as the main point of sale of government services and products

	3.2.1 Embark on massive public-awareness and education program once the GEPP portal is up and running to drive usage	★Ministry of Finance, National Information Technology Agency, Bank of Ghana	Funding	Phase 2
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Goal 3.3: Accelerate the cash-lite agenda around basic economic activity

	3.3.1 Continue to digitize major FMCG value chains by initiating tax incentives (e.g. 1% to FMCGs as an incentive to accept digital payments only)	Ministry of Transport, Ghana Revenue Authority, MoC, Ministry of Finance, ★Payment System Council, fintechs	Training and funding for stakeholder participation	Phases 1 and 2
	3.3.2 Continue to improve infrastructure and network availability from Phase 1	MoC, network operators, ★National Communication Authority	—	Phases 1 to 3
	3.3.3 Continue to promote user choice of digital streams/products by improving user experience of digital modes of payment	★Fintechs, financial service providers, Bank of Ghana, merchants	—	Phases 1 to 3
	3.3.4 Integrate solutions that allow one card to be accepted across different services, e.g. AMA, etc. All government services to be accessible	Bank of Ghana, ★GhIPSS, ★National Information Technology Agency	Government-driven	Phase 2

EXPECTED OUTCOMES	MAIN ACTIVITIES	ACTORS	★=Lead	SUPPORT REQUIRED	TIMELINE
	<p>3.3.5 Digitize transportation sector:</p> <p>1. Establish pilot cashless stations with fully integrated cashless solutions such as point-of-sale, digital payment kiosks, tap-n-go-technology to be rolled out to other stations across the country.</p> <p>2. Upgrade toll booths with digital technology. QR code, NFC and card reading technology (pre-paid tab and call). Start by having digital payments only booths and gradually increase it.</p> <p>3. Have easy on-boarding process in traffic</p>	Ministry of Finance, ★Ministry of Transport, Ministry of Roads and Highways, fintechs/ aggregators, public and private transport companies, owners		Policy, revamp IT Infrastructure, training, funding, stakeholder engagement, public-private partnerships with the right revenue model	Phase 2
	<p>3.3.6 Offer incentives to merchants and users</p>	—		—	Phase 2

Goal 3.4: Accelerate the cash-lite agenda around basic economic activity

	<p>3.4.1 Expand the scope of the fully digitized informal-sector pension scheme to cover more communities</p>	★Ministry of Finance, NPRA, Social Security and National Insurance Trust, National Insurance Commission		—	Phases 2 to 3
	<p>3.4.2 Continue to digitize payments in schools, hospitals, churches, farm inputs, market systems in rural areas to retain e-value within the rural ecosystem</p>	★Ministry of Finance, Bank of Ghana, Ministry of Education, Ministry of Health, Ministry of Agriculture, fintechs		—	Phases 1 to 3
	<p>3.4.3 Ensure the deployment of data and mobile technology to unserved areas</p>	Ministry of Finance, ★MoC, National Communication Authority, telecommunications companies		—	Phases 2 to 3

Goal 3.5: Incentivize the use of electronic funds transfer for real-time gross settlement payments in business-to-business transactions rather than the use of checks and cash

	<p>3.5.1 Initiate promotional initiatives, and assess outcomes to determine the level of acceptance of digital payments, and then cap cash withdrawals</p>	★Ministry of Finance, ★Bank of Ghana		—	Phase 2
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4. ENHANCED INFRASTRUCTURE

Goal 4.1: Incentivize fintechs

<p><i>The role of fintechs as innovators in the financial service space is undisputed, and they must be incentivized to enable them the space and capacity to play their part in the transformational shift to digital payments</i></p>	<p>4.1.1 Set up a regulatory framework that supports fintechs to innovate, and enables them to operate in the payments system without hindrance</p>	★Bank of Ghana, Ministry of Finance, fintechs		Stakeholder engagements	—
	<p>4.1.2 Drive the formation of an industry association to articulate their concerns and interests</p>	Bank of Ghana, Ministry of Finance, ★fintechs		Fintechs	—

5. CONSUMER PROTECTION

EXPECTED OUTCOMES MAIN ACTIVITIES ACTORS ★=Lead SUPPORT REQUIRED TIMELINE

Goal 5.1: Deliver consumer awareness programs

	5.1.1 Form partnerships with the private sector to deliver sustained, quality educational and awareness programs	PR entities, ★financial service providers, mobile money operators	Sponsored airtime, SMS blasts from MNOs, and funding from other private partners	All
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Goal 5.2: Promote a high level of financial literacy among Ghanaians

<i>A well-informed public on financial services and products to drive financial empowerment</i>	5.2.1 Design quality, educative financial literacy programs tailored to the needs and educational levels of target audiences. This may be more effectively delivered under the Financial Inclusion and Development Strategy	★Ministry of Finance, ★Bank of Ghana, Ministry of Education, financial service providers, mobile money operators, content developers, creative designers	Funding; Ministry of Education to incorporate financial literacy in school curriculum	All
	5.2.2 Form partnerships with the private sector to deliver sustained, quality literacy programs	★Ministry of Finance, ★Bank of Ghana, Ministry of Education, financial service providers, mobile money operators, content developers, creative designers	Funding	All

Goal 5.3: Create a comprehensive framework for financial consumer protection

<i>Simplified disclosure and recourse mechanism that can easily be understood by all parties, and is effective in protecting the consumer</i>	5.3.1 Enforce the Consumer Recourse Guidelines and the Disclosure Rules for Credit Products	★Bank of Ghana, financial service providers	Technical support for the development of digital channels for customer complaints	All
	5.3.2 Enforce minimum consumer protection standards – convenient, free systems for complaint handling, liability, dispute resolution	★Bank of Ghana, financial service providers	—	All

Phase Three: Sustaining the Pace of Digitization

1. INCREASED ACCESS, SERVICE DELIVERY, AND DIGITAL PAYMENT USE CASES

EXPECTED OUTCOMES	MAIN ACTIVITIES	ACTORS	★=Lead	SUPPORT REQUIRED	TIMELINE
Goal 1.1: Accelerate the cash-lite agenda around basic economic activity					
	1.1.1 Improve infrastructure and network availability	MoC, network operators, ★National Communication Authority	—		Phases 1 to 3
	1.1.2 Promote user choice of digital streams/products by improving user experience of digital modes of payment	★Fintechs, financial service providers, Bank of Ghana, merchants	—		Phases 1 to 3
Goal 1.2: Drive the digitization of payments in the rural and agricultural ecosystem					
	1.2.1 Continue to widen the scope of coverage of the digitized rural insurance scheme	★Ministry of Finance, NPRA, Social Security and National Insurance Trust, National Insurance Commission	—		Phase 3
	1.2.2 Continue to digitize payments in schools, hospitals, churches, farm inputs, market systems in rural areas, to retain e-value within the rural ecosystem	★Ministry of Finance, Bank of Ghana, Ministry of Education, Ministry of Health, Ministry of Agriculture, fintechs	—		Phases 1 to 3
	1.2.3 Continue to ensure the deployment of data and mobile technology to unserved areas	Ministry of Finance, ★MoC, National Communication Authority, telecommunications companies	—		Phases 2 to 3
Goal 1.3: Drive the digitization of payments in the rural and agricultural ecosystem					
	1.3.1 Issue directives to penalize the use of cash at the appropriate time when digital modes are more prevalent	★Bank of Ghana	—		—

2. CONSUMER PROTECTION

EXPECTED OUTCOMES	MAIN ACTIVITIES	ACTORS	★=Lead	SUPPORT REQUIRED	TIMELINE
Goal 2.1: Deliver consumer awareness programs					
	2.1.1 Continue to form partnerships with private sector to deliver sustained quality educational and awareness programs	PR entities, ★financial service providers, mobile money operators		Sponsored airtime, SMS blasts from MNOs, funding from other private partners	All
Goal 2.2: Promote a high level of financial literacy among Ghanaians					
<i>A well-informed public on financial services and products to drive financial empowerment</i>	2.2.1 Continue to administer quality, educative financial literacy programs tailored to the needs and educational levels of target audiences. This may be more effectively delivered under the Financial Inclusion and Development Strategy	★Ministry of Finance, ★Bank of Ghana, Ministry of Education, financial service providers, mobile money operators, content developers, creative designers		Funding; Ministry of Education to incorporate financial literacy in school curriculum	All
	2.2.2 Continue to form partnerships with the private sector to deliver sustained, quality literacy programs	★Ministry of Finance, ★Bank of Ghana, Ministry of Education, financial service providers, mobile money operators, content developers, creative designers		Funding	All
Goal 2.3: Create a comprehensive framework for financial consumer protection					
<i>Simplified disclosure and recourse mechanism that can easily be understood by all parties, and is effective in protecting the consumer</i>	2.3.1 Continue to enforce the Consumer Recourse Guidelines and the Disclosure Rules for Credit Products	★Bank of Ghana, financial service providers		Technical support for the development of digital channels for customer complaints	All
	2.3.2 Continue to enforce minimum consumer protection standards – convenient, free systems for complaint handling, liability, dispute resolution	—		—	—

Part IV: Appendices

Appendix 1: Regional Distribution of Mobile Money Agents

MNO	INDICATORS	GREATER ACCRA REGION	EASTERN REGION	CENTRAL REGION	WESTERN REGION	VOLATA REGION	ASHANTI REGION	BRONG AHAFO REGION	NOTHERN REGION	UPPER EAST REGION	UPPER WEST REGION	TOTAL
MTN	Registered Agents	29,433	8,295	9,088	10,319	5,737	19,623	8,123	6,118	2,356	2,696	101,788
	Active Agents	26,210	5,693	9,232	8,255	4,904	17,501	7,900	5,821	2,496	1,736	89,748
TIGO	Registered Agents	12,318	2,758	3,414	4,236	1,794	3,677	1,419	915	371	395	31,297
	Active Agents	11,988	2,698	3,286	4,144	1,712	3,450	1,367	881	358	374	30,258
VODA-FONE	Registered Agents	9,355	2,075	2,065	2,746	1,786	4,155	1,956	1,548	809	779	27,274
	Active Agents	5,926	1,471	1,461	2,111	910	2,580	1,317	1,118	546	568	18,008
AIRTEL	Registered Agents	—	—	—	—	—	—	—	—	—	—	34,328
	Active Agents	—	—	—	—	—	—	—	—	—	—	13,731
TOTAL	Registered Agents	51,106	13,128	14,567	17,301	9,317	27,455	11,498	8,581	3,536	3,870	194,687
	Active Agents	44,124	9,862	13,979	14,510	7,526	23,531	10,584	7,820	3,400	2,678	151,745

Appendix 2: Regional Distribution of ATMs and POSs

REGION	ATM	POIS
Greater Accra Region	1,194	5,234
Ashanti Region	273	655
Western Region	152	334
Central Region	99	277
Brong Ahafo Region	84	203
Eastern Region	75	243
Northern Region	75	131
Volta Region	52	122
Upper East Region	24	81
Upper West Region	16	76
Total number deployed	2,044	7,356

Source: Bank of Ghana

Appendix 3: Electronic Payments Cards as Percentage of Adult Population

TYPE	2017	% OF ADULT POPULATION
Debit Cards:	5,953,484	34.4%
Banks own Proprietary Cards	3,041,228	17.6%
International Scheme Cards	2,912,256	16.8%
Credit Cards:	14,698	0.0008%
Banks own Proprietary Cards	—	—
International Scheme Cards	14,698	0.0008%
Prepaid Cards:	86,017	0.005%
Banks own Proprietary Cards	—	—
International Scheme Cards	86,017	0.005%
E-zwich Cards:	2,364,456	13.7%

Source: Bank of Ghana

Appendix 4: Digital Payment Transactions: 2015–2017

PAYMENT INSTRUMENT	INDICATORS	2015	2016	Growth (%)	2017	Growth (%)
ACH Direct Credit	Volume of transactions	4,668,636	5,242,610	12.29	6,061,093	15.61
	Value of transactions (GH¢Mn)	15,075.07	19,245.65	27.67	24,327.26	26.40
ACH Direct Debit	Volume of transactions	692,615	874,846	26.31	940,649	7.52
	Value of transactions (GH¢Mn)	70.91	127.01	79.11	126.28	-0.57
Instant Pay (GIP)	Volume of transactions	—	184	18,400.00	41,795	22,614.67
	Value of transactions (GH¢Mn)	—	0.42	42.00	83.23	19,716.67
Internet Banking	Number of registered Customers	840,532	962,487	14.51	936,965	-2.65
	Volume of transactions	999,439	2,705,191	170.67	2,437,785	-9.88
	Value of transactions (GH¢Mn)	2,286.70	6,779.21	196.46	9,739.34	43.66
Mobile Banking	Number of registered customers	1,449,374	2,175,644	50.11	2,110,984	-2.97
	Volume of transactions	5,440,387	6,821,838	25.39	7,036,285	3.14
	Value of transactions (GH¢Mn)	178.59	357.38	100.12	1,501.37	320.10
Debit Cards	Number of Cards Issued	4,304,097	5,446,030	26.53	5,953,484	9.32
	Volume of transactions	22,852,411	46,456,021	103.29	60,382,177	29.98
	Value of transactions (GH¢Mn)	5,213.72	13,582.67	160.52	17,785.18	30.94
Credit Cards	Number of Cards Issued	5,438	9,217	69.49	14,698	59.47
	Volume of transactions	57,801	138,037	138.81	185,101	34.10
	Value of transactions (GH¢Mn)	33.73	70.08	107.77	99.99	42.68
Prepaid Cards	Number of Cards Issued	44,250	58,907	33.12	86,017	46.02
	Volume of transactions	143,531	312,143	117.47	472,071	51.24
	Value of transactions (GH¢Mn)	51.85	103.26	99.15	255.87	147.79
E-zwich Cards	Number of Cards Issued	1,369,369	1,878,044	37.15	2,364,456	25.90
	Volume of transactions	2,251,101	5,365,085	138.33	8,367,017	55.95
	Value of transactions (GH¢Mn)	922.90	2,362.97	156.04	3,431.49	45.22
Mobile Money	Number of Registered Accounts	13,120,367	19,735,098	50.42	23,947,437	21.34
	Number of Active Accounts	4,868,569	8,313,283	70.75	11,119,376	33.75
	Volume of transactions	266,246,537	550,218,427	106.66	981,564,563	78.40
	Value of transactions (GH¢Mn)	35,444.38	78,508.90	121.50	155,844.84	98.51

Appendix 5: List of Acronyms

ACH	Automated Clearing House	LEAP	Livelihood Empowerment Against Poverty
ATM	automated teller machine	MDA	Ministries, Departments, and Agencies
B2G	business-to-government	MFI	Microfinance Institution
BFA	Bankable Frontiers Associates	MMO	mobile money operator
BOG	Bank of Ghana	MNO	mobile network operator
BTCA	Better Than Cash Alliance	MOE	Ministry of Education
CAGD	Controller & Accountant General's Dept	MOF	Ministry of Finance
CGAP	Consultative Group to Assist the Poor	MOI	Ministry of Information
CAGR	compound annual growth rate	MOT	Ministry of Transport
CMC	Cocoa Marketing Company	MOH	Ministry of Health
GPFI	Global Partnership for Financial Inclusion	NCA	National Communication Authority
CSP	communication service provider	NFC	near-field communication
DFS	digital financial services	NFIDS	National Financial Inclusion and Development Strategy
DPTF	Digital Payments Task Force	NGO	non-governmental organization
ECA	Ecobank Capital Advisors	NIC	National Insurance Commission
EFT	electronic funds transfer	NITA	National Information Technology Agency
EMI	electronic money issuer	NPRA	National Pensions Regulatory Authority
FII	Financial Inclusion Insights	P2G	person-to-government
FSD	Financial Sector Division	P2P	person-to-person
FSP	financial service provider	PBC	Produce Buying Company
FMCG	Fast-Moving Consumer Goods	PFM	Public Financial Management
G2B	government-to-business	POS	point of sale
G2G	government-to-government	PPI	Payment Protection Insurance
G2P	government-to-person	PSC	Payment System Council
GEPP	Ghana Electronic Payment Portal	PSD	Payment System Department
GhIPSS	Ghana Interbank Payment and Settlement System	QR	Quick Response
GIFEC	Ghana Investment Fund for Electronic Communications	RegTech	regulatory technology
GIFMIS	Ghana Integrated Financial Management Information System	RTGS	real-time gross settlement
GPFI	Global Partnership for Financial Inclusion	SEC	Securities & Exchange Commission
GPS	Global Positioning System	SMS	short message service
GRA	Ghana Revenue Authority	SSNIT	Social Security and National Insurance Trust
GSMA	Groupe Speciale Mobile Association	TSA	Treasury Single Account
ICT	information and communication technologies	USSD	Unstructured Supplementary Service Data
KYC	know your customer	WPR:	World Payments Report

Notes

- 1 <https://www.betterthancash.org/news/media-releases/ghana-joins-better-than-cash-alliance-for-greater-financial-transparency>
- 2 Ghana Integrated Financial Management Information System <http://cagd.gov.gh/gifmis/>
- 3 <https://www.betterthancash.org/tools-research/reports/accelerators-to-an-inclusive-digital-payments-ecosystem>
- 4 McKinsey Global Institute, "Digital Finance for All: Powering Inclusive Growth in Emerging Economies," 2016.
- 5 http://www.gpfi.org/sites/default/files/documents/FINAL_The%20Opportunities%20of%20Digitizing%20Payments.pdf
- 6 <https://www.weforum.org/agenda/2018/04/governments-join-digital-payment-revolution-fight-corruption>
- 7 <https://www.betterthancash.org/why-digital-payments>
- 8 <https://www.betterthancash.org/news/media-releases/ghana-joins-better-than-cash-alliance-for-greater-financial-transparency>
- 9 https://btca-prod.s3.amazonaws.com/documents/312/english_attachments/Country_Diagnostic-Ghana_full_report.pdf?1506490992
- 10 <http://finclusion.org/uploads/file/reports/2014%20InterMedia%20FII%20GHANA%20National%20Survey%20Report.pdf>
- 11 National Communications Authority. <https://www.nca.org.gh/assets/Uploads/stats-bulletin-Q3-2017.pdf>
- 12 National Communications Authority. 28 July 2017. Mobile Data Subscriptions in Ghana from 2013 to January 2017. <https://nca.org.gh/assets/Uploads/Historical-Data-Subscription-Figures-2013-January-2017.pdf>
- 13 GSMA Intelligence. 2017. The Mobile Economy – West Africa 2017. p. 7. <https://www.gsmainelligence.com/research/?file=7e012979688ad385e432302d43013284&download>
- 14 The universal banking license enables a bank to combine wholesale, retail and investment banking services as well as other financial services such as insurance.
- 15 Tigo and Airtel have recently merged.
- 16 Accounts which had undertaken transactions at least 90 days prior to the reporting date.
- 17 <https://nca.org.gh/industry-data-2/market-share-statistics-2/voice-2/>
- 18 Source: Bank of Ghana, Payments System Department.
- 19 Agents who effected transactions at least 30 days prior to the reporting date.
- 20 http://nicgh.org/wp-content/uploads/2018/02/NIC_Annual-Report_2016.pdf
- 21 Defined as the contribution of total insurance premiums to Gross Domestic Product (GDP).
- 22 Andoh-Adjei et al. BMC Health Services Research (2018): <http://www.nhis.gov.gh/files/Chapter%204%20-%20membership%20retention.pdf>
- 23 <https://www.ssnit.org.gh/about-us/>
- 24 <https://www.mofep.gov.gh/sites/default/files/budget-statements/2018-Budget-Statement-and-Economic-Policy.pdf>
- 25 Service providers that provide platforms through which financial service providers can process their payment transactions.
- 26 Consultative Group to Assist the Poor (CGAP), FII Ghana Launch Report, November 23, 2015.
- 27 Jamie Zimmerman, Bankable Frontiers Associates. 2015. Development Results Focused Research Program Country Diagnostic: Malawi. p. iv.
- 28 Ahmed Dermish, Bankable Frontiers Associates. 2015. Development Results Focused Research Program Country Diagnostic: Nigeria. p. iv.
- 29 Bankable Frontiers Associates. 2015. Payment Flow Diagnostic: Uganda. p. 2.
- 30 <https://www.betterthancash.org/tools-research/reports/accelerators-to-an-inclusive-digital-payments-ecosystem>
- 31 <http://www.cgap.org/blog/new-data-finds-mobile-money-cusp-rwanda-and-ghana>
- 32 <http://www.bog.gov.gh/privatecontent/Payment%20Systems/Payment%20Systems%20Annual%20Report%202017.pdf>

