Haitian Financial Institutions and the Path to Mobile Banking Solutions

An Introductory Methodology to Help Financial Institutions Integrate Mobile Solutions into Their Business Lines

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Disclosure

As a result of political protests and riots, initial interviews were conducted entirely in the Ouest and Artibonite departments. Phone interviews were conducted with some organizations in the north and south. Several organizations participated in interviews over the course of six months to provide evolving feedback on the concepts and tools assembled in this report. However, some institutions went through organizational changes between the first series of interviews in February and the final interviews in August, making it hard to track relative changing opinions. Finally, since neither French nor Haitian Creole is my first language, any errors or misinterpretation of comments provided by the interviewees or translated by my colleagues are my doing.

Context and Methodology

The Haiti Mobile Money Initiative (HMMI), co-funded by the Bill & Melinda Gates Foundation and the United States Agency for International Development (USAID), was designed to spur the launch of mobile money services in Haiti following the 2010 earthquake. Managed through the USAID-funded Haiti Integrated Finance for Value Chains and Enterprises (HIFIVE) program, implemented by FHI 360 and World Council of Credit Unions (WOCCU), HMMI launched an incentive fund competition to encourage the development of mobile money services. HIFIVE provided grants to address obstacles in the implementation of payment systems and improve access to mobile financial services.

Five years after the introduction of mobile money, WOCCU remains involved in efforts to encourage the use of mobile financial services and support new mobile money opportunities that seed financial inclusion in Haiti. From 2014 - 2015, with support of the Bill & Melinda Gates Foundation through HMMI, WOCCU carried out supply-side research to identify why Haitian financial institutions were not using mobile money solutions on a wide scale and to explore how to promote further adoption.

The resulting introductory methodology, described in this document, is the result of this research, including recent desk research on mobile solutions, local products, and regulations; research initiatives around information and communications technology (ICT) integration strategies; in-person interviews conducted in 2015 with Haitian financial institutions and merchants on the status of mobile banking; and market research on how to support small merchants' needs through mobile solutions. Most importantly, this document provides a high-level step-by-step process for financial institutions to follow in creating or adopting mobile financial solutions.

The goal is to help financial institutions identify and address the barriers that prevent them from investing in mobile solutions. The methodological framework helps address actual market needs and operational inefficiencies by outlining mobile finance business plans and strategies that, if implemented, will reduce costs and generate revenue. Business and market analyses can show how platform integration can expand service offerings beyond cash-in/cash-out services and person-to-person payments. With Banque de la République d'Haïti (the Central Bank of Haiti) mandating "bank-led" mobile accounts, the country's financial institutions must lead efforts to digitize banking. Once financial products and services are linked with mobile platforms, true mobile banking solutions can be offered throughout Haiti.

To foster additional investment related to mobile banking in Haiti's financial sector and donor communities, this document outlines processes for banks, credit unions, and microfinance institutions to support the design of a business model that aids Haiti's national mission of mobile financial inclusion as well as individual institutions' goals for the profitability of mobile services.

Target Audience

This report's primary audience is Haitian financial institutions. It focuses on the elements of mobile financial services that are most relevant to the Haitian regulatory context. Therefore, some descriptions of individual financial institutions and local company names, which are commonly understood by the target audience, may not be provided here.

Assumptions

Several assumptions guide the content of this report. First, this report does not discuss telco-led and limited closed loop mobile money businesses, on the assumption that the Central Bank and Haitian financial institutions prefer a "bank-led" model. (This is not to say that viable mobile money solutions are unimportant for building a strong mobile financial ecosystem.) Second, the financial institutions reading this report are likely already familiar with the four integration models and the Interoperability Cost Analysis Tool and Guide. Finally, a common belief is that financial institutions share the goal of addressing poverty through financial inclusion and mass adoption of mobile services. In fact, this is not the primary objective of any of those we interviewed. The decision to invest in mobile technology is based primarily on whether services align with an institution's business objectives, whether they will improve operational efficiencies, and whether they will generate profit or reduce costs.

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ACRONYMS

ACME	*Association pour la Cooperation avec la Micro Enterprise*
ATM	Automated teller machine
BNC	*Banque Nationale de Crédit*
BRH	*Banque de la République d'Haïti,*
CIN	*Carte Identification Nationale*
CPF	*Caisse Populaire Fraternité*
CPSA	*Caisse Populaire Sainte Anne*
GSMA	*Groupe Speciale Mobile Association*
HIFIVE	Haiti Integrated Finance for Value Chains and Enterprises
HMMI	Haiti Mobile Money Initiative
ICT	Information and communications technology
IT	Information technology
KOTELAM	*Koperativ Tet Ansanm pou Lavi Miyo*
KYC	Know Your Customer
MFI	Microfinance institution
MNO	Mobile Network Operator or Telco Company
P2P	Person-to-person
PRONAP	*Procecceur National de Paiements*
SMS	Short message service
SOCOLAVIM	*Societe Cooperative Lavi Miyo*
USAID	United States Agency for International Development
USSD	Unstructured supplementary service data
WOCCU	World Council of Credit Unions

EXECUTIVE SUMMARY

Introducing new mobile banking technology does not require redefining what it means to be "banked," but rather developing new delivery channels for existing *and* new financial products and services. Mobile banking has the potential to offer a variety of benefits for future growth of formal financial institutions by:

- Providing access to more clients and digitizing services for greater profit.
- Creating a branchless experience that minimizes cash management burdens and security risks.
- Introducing technologies that decrease per-transaction costs by creating operational efficiencies.
- Digitizing Know Your Customer (KYC) and consumer transaction behaviors, enabling more transparent transaction monitoring, fraud mitigation, and credit evaluation systems, as well as improved regulatory auditing and reporting capabilities.
- Giving all financial service providers new opportunities to connect their core processing systems with merchant payment networks, agent cash-in/cash-out networks, payment processing platforms, money transfer networks, and other strategic partners that can increase digital cash flow.

At a high level, Haitian financial institutions understand the potential impact of mobile banking on their businesses and customers, and recognize that mobile technologies are the future. Nonetheless, the path to developing mobile banking solutions is daunting. This is due in large part to lack of knowledge about how to design them to serve both the consumer and business effectively and because the existing mobile products introduced to the Haitian market have not yet met their needs for an interoperable mobile channel that enables access to financial services through the institution. In addition, lack of integrated and interoperable solutions prevents expanding partnerships and services that would improve the convenience and accessibility of mobile banking versus cash.

When asked about their vision for the way forward for mobile banking in Haiti, banks, *caisses populaires* (credit unions), and microfinance institutions (MFIs) agree on two assumptions. First, institution bank-led,[1] not telco-led (MNO-led)[2], models are the future of the country's financial services. Secondly, telcos should not expand into offering financial services, but rather continue to add value as third-party mobile providers. Haitian financial institutions also understand the potential benefits of mobile solutions, as highlighted above, specifically noting branchless banking, mobile loans and payroll services, improved merchant payments, and a centralized client database. They see mobile solutions as a method of reducing branch congestion,

[1]Bank-led models imply that the accredited financial institution is offering a service to its account holders and are the owners of the accounts. In bank-led models a third party e-wallet provider, mobile money platform provider, or other system can help manage the program or be integrated into the financial institution's core "banking" system so that information is accessible across all parties in real-time. In the current market, no such integrated links exist.
[2] A telco-led model implies a mobile network operator offering a digital account in lieu of a financial institution, where the telco is the owner of the accounts and responsible for the regulatory compliance of such accounts.

generating new revenue, and strengthening financial networks through national awareness and trust.

Financial institutions also agree that there are significant barriers preventing them from moving forward with mobile solutions: high investment costs, lack of expertise with mobile technology, lack of knowledge on the information community technology (ICT) requirements, and undefined regulations, all of which may complicate their ability to securely offer mobile services.

Addressing the current operating environment and benefits and barriers identified by Haitian financial institutions, this document outlines a step-by-step approach to help financial institutions analyze how and when to add an integrated mobile banking solution to their business lines. The nine-step introductory methodology outlined here represents a start-to-finish process for financial institutions considering mobile banking:

- Step 1: Explore the Global Landscape of Mobile Banking Solutions
- Step 2: Evaluate and Quantify Desired Features and Services
- Step 3: Evaluate ICT Readiness
- Step 4: Determine the Appropriate Mobile Integration Model
- Step 5: Research Partnership Opportunities
- Step 6: Understand the Consumer Market
- Step 7: Research and Define Merchant Strategies
- Step 8: Define Business Requirements and Use Cases
- Step 9: Advocate and Lobby for Regulation Reform

For financial institutions taking customer deposits, bank-led integration models – central to this methodology – provide the foundation on which interconnected mobile solutions are built for the purpose of creating transparent, streamlined, and real-time operations. For Haitian financial institutions wishing to benefit from the float[3] of client deposits, interoperable mobile banking accounts are better suited than the closed-loop mobile money wallets that currently exist in the Haitian market. Neutral interoperable platforms and processing systems that allow settlement across institutions could transform Haiti’s financial sector by enabling fully electronic (“paperless”), branchless, carrier-agnostic, and real-time financial services that would improve on the current debit and credit card networks and, more importantly, rival cash.

This ambitious vision for such a mobile ecosystem in Haiti is not beyond reality, but it will require financial institutions to take steps, included in this introductory methodology, to better understand the technologies (and their use cases), the required ICT infrastructure, the possible integration models, the consumer and market needs, and the regulations that will support or restrict growth of mobile financial services. Although some banks are beginning long-term planning for mobile banking and online financial services, smaller institutions struggle to prioritize the expense of longer-term integration strategies over immediate needs. This is a delicate balance for institutions with limited resources, and should be a major topic of discussion

[3] Float represents the money available to a bank between the time a deposit is made and the money is used or moved by the account owner. During the period in which the funds are stored, the deposited funds are often stored in a savings account which allows the financial institution to apply those funds toward loans or other interest bearing opportunities.

when considering how to justify the investment and prepare for the inevitable transition to mobile services.

By applying the introductory methodologies presented here, and with a better understanding of Haiti’s mobile ecosystem, financial institutions can establish clear mobile strategies with actionable short-term and long-term objectives. Since information sharing is a key barrier throughout the financial sector, this document is also designed to catalyze further discussion, research, and collaborative development. Collaboration from the entire financial sector to promote overall adoption of mobile accounts, through interoperable solutions, will help build desirable and convenient solutions that gain traction based on consumers’ positive experience and word of mouth. Healthy competition can grow once usage expands, but for now, exclusivity in partnerships and closed looped systems are detrimental to all who wish for the success of a mobile digital ecosystem. At least in the short term, a policy of “coopetition” — combining cooperation and competition — is the best way forward for Haitian financial institutions.

I. BACKGROUND: SPURRING THE GROWTH OF MOBILE MONEY IN HAITI

The Haiti Mobile Money Initiative (HMMI) incentive fund competition laid a foundation for the country's development of mobile money, and was strongly influenced by a telco-led mobile payment solution that mirrored Kenya's M-PESA.[4] The expectation was that if three things occurred — 1) the Central Bank of Haiti (*Banque de la République d'Haïti*, [BRH]) supported the effort, 2) larger players converted to mobile distribution of funds, and 3) mobile network operators invested in developing the technology — then the system would reach scale quickly, giving millions of Haitians incentives to use mobile accounts and overcoming a network of development challenges.[5]

The initial results were impressive, with more than 800,000 users registered in the first two years. However, by September 2015, there were only 85,139 active users, not yet reaching the transformative effect many had hoped for in mobile money. Nonetheless, the landscape is changing rapidly and dialogue continues about mobile money and electronic payments, demonstrating the positive impact of HMMI and its partner program, the USAID-funded Haiti Integrated Finance for Value Chains and Enterprises program (HIFIVE), implemented by World Council of Credit Unions (WOCCU) and FHI 360. More explicitly, new providers have entered the market with mobile solutions. The efforts of HMMI and HIFIVE are a key reason that Haiti's commercial banks, credit unions, and MFIs are defining mobile-driven business strategies.

MOBILE BANKING VS. MOBILE WALLETS

Unlike closed-loop mobile wallets, which store limited amounts of cash until an account holder wishes to use the funds or cash out, mobile banking establishes a relationship between consumer accounts and the financial institutions that provide the service. In Haiti, "mobile banking" refers to an account that provides, through a mobile phone, access to savings, credit, transfers, and other financial services offered by an accredited and regulated financial institution. The secure user interface is no different from online banking; the phone is simply the most accessible method for most Haitians.

With mobile wallets, which are heavily restricted by the Central Bank of Haiti, the financial institution storing the funds does not have access to the cash. Mobile banking is more appealing to financial institutions because it gives them access to the float and allows them to offer more value-added services by phone. Mobile banking also enables movement of funds between account types within or across institutions under existing regulations.

Partnerships

New strategic partnerships are forming between telcos, financial technology providers, and financial institutions to facilitate new mobile service models and alliances. After mobile network operator Digicel launched Tcho Tcho (now Mon Cash) with financial partner Scotiabank, Digicel acquired telco competitor Viola and T-cash, Unibank and Viola's mobile money product. Digicel has since migrated to a new mobile money platform, Utiba, which is the central processor for mobile wallets in several Digicel markets. Digicel also invested in Boom Financial, which launched a mobile banking account with financial partner Le Levier, a federation of credit unions in Haiti, and technology partner WOCCU Services Group (WSG). Although it is no

[4] For information on M-PESA, see N. Hughes and S. Lonie, "M-PESA: Mobile Money for the 'Unbanked': Turning Cellphones into 24-Hour Tellers in Kenya" (*innovations*, winter and spring 2007), http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2012/06/innovationsarticleonmpesa_0_d_14.pdf.
[5] Vijay Goel and Salah Goss, Case Study: Haiti Mobile Money Initiative—Incentive Prize Competition.

longer active in Haiti, Boom's mobile banking solution allowed account holders to send and receive domestic and international transfers to and from the United States. Digicel also invested in Fonkoze, Haiti's largest MFI and one of Mon Cash's super agents.

Meanwhile, HaitiPay developed the mobile wallet, Lajan Cash, and partnered with *Banque Nationale de Crédit* (BNC) as its financial institution and Tagattitude as its technology platform. HaitiPay has announced a partnership with the second teleco provider in Haiti, Natcom; however Lajan Cash continues to offer the only carrier-agnostic solution in the market.

Developing the Mobile Banking Sector: Regulatory and Knowledge Gaps

As mobile financial services evolve, so should financial institutions' understanding of the regulations governing mobile money, mobile wallets, and mobile banking. For institutions that have yet to launch a mobile service, it is difficult to find or get access to information, research, or tools that clearly explain the mobile money and mobile banking models, current regulations, how to develop the products, or what possibilities exist beyond current product offerings.

Currently, Lajan Cash and Mon Cash remain ”e-wallet” providers, therefore the funds in these accounts remain the property of the wallet owner and are regulated by *banque à distance* (bank at a distance), which has stricter limits than other types of accounts and money services. The Central Bank recently granted Mon Cash an increased wallet size for its full-wallet account holders (who provide KYC) in the amount of 60,000 HTG. The daily transfer limit is also 60,000 HTG, roughly $1050 USD. However, the e-wallets, even with proper KYC, have stricter limits than those applied to money transfer houses or traditional banks. At a bank or money transfer house, consumers with valid government IDs can send up to $9,999 USD. In addition because e-wallets fall under *banque à distance*., strict limits are also placed on deposits and withdrawals. Such restrictions on mobile accounts which greatly differ from banking laws and money transfer regulations, limit use and the ability of mobile money services to compete with alternatives, including cash.

Unlike Mon Cash or Lajan Cash, Boom, during its time of operation, was declared to be a mobile bank account, and therefore was not restricted by wallet sizes, transfer amounts, or other restrictions of *banque à distance*. As an account under a regulated financial institution, Boom could allow domestic and international account-to-account transfers under regulations that apply to other types of accounts, despite the fact that its service was accessible by mobile phone.

Financial institutions must understand the current regulations fully (for example, where existing regulations can be adapted to existing cash dominated financial services, even as they are accessed through mobile phones), so that they can take more agile approaches as the regulatory framework evolves.

An Overview of Mobile Banking in Haiti

Mobile banking requires integrations that enable data exchange between financial institutions in real-time for transaction processing, which encourages better collaboration between regulated banks and credit unions and unregulated MFIs. Mobile banking opens the doors for card-processing integration, bill payment systems, loan payments, and repayments across financial institutions, domestically and abroad. Providers of such services often require contracts and direct partnerships with financial institutions. Most exciting, with mobile banking, businesses do not have to rely entirely on cash.

The following are important characteristics of Haitian mobile banking services:

- Mobile banking is a "bank-led" model backed by mobile platform technology, not a telco-led model.
- The financial institutions set limits and restrictions, within existing directives.
- Mobile banking requires presentation of one or two valid, government-issued IDs (depending on the service and the institution, being subject to the same KYC requirements as a bank or credit union)
- From a regulatory perspective, there is flexibility to link mobile accounts to existing accounts at a given institution.
- Mobile banking offers the ability, via interoperability, to integrate with payment processors, electronic check clearing, and any future database for KYC validation or credit registry.
- Regulation and licensing exist to allow domestic and international transfers with other financial institutions.
- Mobile banking offers the ability to interconnect with a money transfer service and serve as a cash-out agent.

Even without mobile banking services, mobile money can reduce the cost of printing money, cash distribution and payment disbursement, personal and private cash management, and security of the currency. These reasons, along with more efficient settlement procedures and reduced operational costs for government programs that require cash disbursement or payment collection, should be motivation for the government to support mobile money — in preparation for mobile banking.

II. A PATH FOR DEVELOPING MOBILE BANKING SOLUTIONS

Interviews with banks, credit unions, and MFIs (Appendix A) revealed two assumptions: first, that institution-led mobile solutions — not telco-led models — are the future of financial services in Haiti; and second, that although MNOs should not be in the business of offering financial services, they can add value as third-party providers. Financial institutions understand the need for advancing technologies. In the interviews, they shared unique perspectives on the benefits of investing in and launching branchless banking, mobile loans and payroll services, improved merchant payment solutions, and a centralized mobile account client database. They also perceive mobile solutions as a means of reducing branch congestion, generating new revenue, and strengthening financial networks through national awareness and trust. (See Appendix B for more detail on the benefits the financial institutions identified.)

Financial institution representatives also noted significant barriers preventing them from moving forward with mobile solutions, especially the high investment costs, lack of knowledge about mobile technology and ICT requirements, and undefined regulations, all of which complicate their ability to securely offer mobile services. (See Appendix C for a discussion of the barriers.)

Building on this understanding of the benefits and barriers facing Haitian financial institutions and the local operating environment, this section outlines a step-by-step approach to analyzing how and when to adopt mobile banking into a financial institution's business lines.

- Step 1: Explore the Global Landscape of Mobile Banking Solutions
- Step 2: Evaluate and Quantify Desired Features and Services
- Step 3: Evaluate ICT Readiness
- Step 4: Determine the Appropriate Mobile Integration Model
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- Step 6: Understand the Consumer Market
- Step 7: Research and Define Merchant Strategies
- Step 8: Define Business Requirements and Use Cases
- Step 9: Advocate and Lobby for Regulation Reform

This is a start-to-finish process for financial institutions considering mobile banking for the first time. Some may have already completed one or more of the steps. Although the steps are presented sequentially, some may be completed simultaneously (such as consumer and market research), and at least one area (regulation) will require continuous attention as financial institutions work through the process. Several steps include one or more sub-activities and are presented from the perspective of the financial institution.

Step 1: Explore the Global Landscape of Mobile Banking Solutions

As a starting point, familiarize yourself with technologies on the market, in Haiti and globally. As of 2014, there were 255 active mobile money solutions in 89 countries,[6] categorized as mobile payments, mobile loans, mobile savings, and mobile insurance products. Some countries are already experiencing growth in models beyond person-to-person (P2P) and have established savings, loans, and insurance programs for mobile consumers. (See Appendix D for a summary of current services.)

The most well-known success story is M-PESA in Africa, but financial institutions in Haiti should take note of the growing number of mobile money services in Latin America, a market with regulations and cultural behaviors that more closely mirror its own. Between 2013 and 2014, according to the 2014 State of the Industry report from *Groupe Speciale Mobile Association* (GSMA), Latin America and the Caribbean saw 50 percent growth in mobile money, with nearly 15 million registered mobile

The Value of Examining Other Markets

Our interviews with Haitian financial institutions revealed a lack of familiarity with mobile financial services. Most know about M-PESA or the mobile wallets currently available in Haiti, but are unaware of mobile loan and insurance products. Some were unaware that there are already products in Haiti that can support savings or P2P services. Becoming familiar with mobile solutions that are gaining traction in other markets is a good way to draw inspiration for products and solutions for Haiti's market. Not every service will be directly applicable, but a review of successes could help determine whether there are similar patterns of use in Haiti.

[6] C. Scharwatt, et al., 2014 State of the Industry: Mobile Financial Services for the Unbanked, GSMA, available at: http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/03/SOTIR_2014.pdf.

financial accounts and more than 6 million active accounts.[7] Haiti is the primary country representing the Caribbean market in this data.

Any financial institution can conduct this exercise to compare business models from around the globe to ensure a clear understanding of the objectives of other products, including what drove a product's growth and how it has addressed a market need.

Step 2: Evaluate and Quantify Desired Features and Services

Technology is meant to improve on manual products, processes, and procedures. Findings from global research can help draw parallels to which of your institutional needs and customers could be better addressed through technology solutions. To begin to understand how technology can drive positive change, a first step is to identify the "pain points" in the current business and its operations (Activity 2-1), assess which of these might be resolved through a mobile solution (Activity 2-2), and assign rough values to quantify the benefits of the potential solutions (Activity 2-3). The activities are described in detail below.

At this stage, it is important to focus on general problems, concepts, and high-level solutions, without dwelling on how to build or manage a specific solution. Detail about the scope of the mobile solution, as well as a detailed business plan, will be developed gradually, through the step-by-step process, and may depend on partner input.

Activity 2-1: Identify Key Pain Points

Use the following discussion questions to help identify the key pain points experienced by your customers and within your institution's operations. It may not be necessary to answer every single question on the list; these are meant as a guide, geared toward revealing some of the main barriers your institution and customers are facing in their financial interactions.

- How does your institution hope to help address financial inclusion?
- In general, what are your customers' main needs and key pain points? *(Money security? Transportation? Growing a small, informal business*?*)*
- What are the key pain points in your day-to-day operations? *(Cash management? Settlement and reconciliation? Reports and account monitoring? Registration?)*
- Thinking about your current products, what is the strongest-selling product that attracts customers to your institution over others? What drives the need for this product?
- How do customers use their loans?
- How could customers' lives be improved through new financial services or solutions?
- What percentage of customers depends on frequent but small monetary transactions?
- What is the level of financial literacy of your customers? How could this be improved from an operational or technical level?

[7] Sharwatt et al., GSMA 2014 State of the Industry.

Activity 2-2: Assess Which Pain Points Could be Addressed through Mobile Solutions

Once you have agreed on a list of pain points for customers and institutional operations, assess which might be effectively addressed through mobile solutions. The following sample questions can help guide this analysis:

- Thinking of your active customers, what financial needs are not yet addressed by services offered only inside a branch? *(Better transaction transparency? Easier access to cash?)*
- How could customers' identified needs or pain points be resolved if their accounts were accessible or managed through a mobile application?
- How could a branchless experience ease the burden on your business?
- How many/what percentage of your customers have smartphones? Is a smartphone application a worthwhile investment for a certain client base?
- What is the technological literacy of your staff? Could a mobile/tablet application allow for branchless acquisition?

Financial institutions must clearly define for themselves why mobile solutions are worth the investment, how such a solution would best suit customer needs, and how the solution would mutually benefit the customer and the institution. For example, some MFIs have started using tablets for remote loan applications (outside a branch), to reduce the clients' costs in accessing financial services and the MFIs' costs in expanding to new markets. Text/SMS alerts or simple unstructured supplementary service data (USSD) applications could be an appropriate way to address customers' need for more real-time visibility of their savings or other accounts. Or, merchant services could be launched using existing wallet models to encourage the growth of P2P payments in the informal sector. The specific applications and solutions will vary based on the institution and its identified needs. (Appendix B presents some of the potential benefits raised by Haitian financial institutions.)

Activity 2-3: Quantify the Benefits of Mobile Services

During this exercise, define in quantifiable or otherwise measurable terms how the potential mobile services could benefit your consumers and your institution. Assigning rough figures to the benefits will help you begin to justify the investment, while helping you create potential measurable success criteria for future pilot projects. The box below offers examples of these services and ways to quantify/measure their impact. Use the blue-highlighted portions to customize the measurements for your institution.

In every case, the institution must evaluate the financial and operational benefits to the business. Once you have identified the most appealing mobile financial service offerings for your institution, the next step toward creating the service is to assess your institution's ICT readiness for mobile platform integration.

Mobile Account Applications: Self-service features such as checking balance and transaction history, P2P transfers, and bill pay will create financial access to bank accounts through mobile applications. *Benefit*: This will minimize branch congestion and liquidity burdens for financial institutions and/or decrease operations costs by [insert HTG per month].

Mobile Remittance Transfers: Supporting domestic and international remittance transfers in and out of mobile accounts enables a new monthly revenue stream, predicted as [(average fee per transfer) * (number of client transactions per month) = (projected monthly revenue)]. Additional revenue could be earned by offering foreign currency exchange, in branch or electronically, through mobile accounts. More than $2 billion is sent to Haiti each year. Recipients, especially in remote areas, will pay fees for the convenience of accessing funds in real-time, assuming there is a method of accessing and spending their cash.

Mobile Loan Management: Mobile loan solutions (micro-loan disbursement and mobile account repayment) can increase revenue by providing credit access to [insert estimated number of clients] throughout the country without the need to build new branch locations, which each cost [insert cost of building a branch]. Mobile loans are a pivotal step in creating branchless banking models and self-service financial products that do not require "brick and mortar" locations and which customers are comfortable using. For details on using the "Interoperability Cost Analysis Tool" to determine return on investment specific to mobile loan solutions, and the integration models required, see Step 4.

Mobile Merchant Accounts: Strong merchant accounts and payment mechanisms for customers will limit the need for cash-in/cash-out services by keeping currency in the digital system. More consumers adopting mobile currency accounts should result in reduced cash management burdens for financial institutions, because more merchants and their clients will keep funds stored in their mobile accounts, later using those funds for electronic transactions. If the savings portfolio float increases by [insert value estimate], then short-term investments could provide [insert amount of interest revenue opportunity] in new revenue from earned interest.

Mobile Payroll Services: Direct deposit into mobile accounts allows businesses to pay employees using electronic payroll, reducing operational costs for the business owners, who no longer need to distribute paper checks or cash, and making funds available to employees faster, because they do not need to visit a financial institution to access their salaries. Employees are also incentivized to use the mobile account for purchases. A fee charged to businesses for this service could result in [insert business revenue projection estimate here] in new revenue each month, not counting the increased revenue from savings retained in the mobile accounts and the revenue earned from the employees' mobile account usage.

Mobile Consumer Database and Transaction Monitoring: Electronic processing of payroll, transfers, and other payments makes the spending behaviors of Haitians visible, thereby driving new solutions. Integrated mobile environments also create opportunities for shared consumer databases that can be leveraged for credit approvals and KYC validation. More consumers with valid KYC and more loan offerings will help create an electronic record that can facilitate efforts by financial institutions and the Central Bank to monitor and prevent fraud, with real-time access to block or reverse transactions between mobile accounts. [Assign a value to reducing risk in current operations.]

Step 3: Evaluate ICT Readiness

ICT is the backbone of mobile banking, and the ICT assessment is a prerequisite for any financial institution considering the integration of a mobile banking model with its account services. If your financial institution has already completed such an assessment, you may be able to skip this step and move to Step 4.

Dedicated, secure Internet connections and enforced data security practices are the foundation for connecting core financial software with supporting technologies. For many institutions, the costs associated with these elements are substantial barriers, especially when decision-makers in the institution lack information about the available technology. By answering a series of ICT-related questions branches, institutions, and entire networks can fill this knowledge gap. The answers will help you determine your business' readiness to support a mobile platform and identify any potential barriers in your infrastructure and data security practices.

The ICT evaluation tool in Appendix E will help you determine whether:

- Network connections can be leveraged and integrated with a mobile platform
- Additional infrastructure investments are needed
- Additional information technology (IT) resources are needed to support connectivity
- Sufficient data security processes are in place and followed
- Core banking software can support integration

A score of 75 percent or higher on the evaluation suggests that your institution is prepared to move forward with mobile integration, including mobile banking and other digital financial services. A lower score indicates the need for additional investment before an integrated solution is likely to succeed.

Despite the importance of a formal ICT assessment, some institutions may not prioritize the assessment, and others may lack dedicated resources for such evaluations. If your institution does not have a dedicated IT department, it may be wise to contract consultants to assist with the ICT audit and review. Some institutions can engage their federation or association for assistance, but independent local agencies, such as Access Haiti, also provide these services, at varying prices. Engaging professional services for the ICT assessment will ensure a thorough understanding of the infrastructure and may help you identify immediate actions to improve infrastructure or data security practices before introducing new technology.

Step 4: Determine the Appropriate Mobile Integration Model

The next step is to research and select a mobile integration model appropriate for your financial institution. The ICT assessment brings a great deal of clarity to this process: without understanding the true costs associated with mobile technology, it is easy to assume that the cost will be too high or that the solution will take too long to produce a return on investment. To avoid making these kinds of assumptions, it may be helpful to remember that many financial institutions tackle similar questions outside the technology realm; for example, when deciding to build a new branch or point of service to address growing demand, especially in a rural area.

In parallel to the development of the ICT assessment tool, WOCCU hired a consulting firm, Blaze and Ballast, to research existing integration models and make recommendations for the Haiti market. The output of their work was a report, "The Case for Bank-Led Mobile Adoption Strategies in Haiti," and a planning tool, the "Interoperability Cost Analysis Tool and Guide."[8] The report tackles the question of whether new integration methods could generate realistic profits for a financial institution, relative to opening a new branch and outlines four possible ways to offer basic loan services through mobile platforms. The report also compares the technical and operational costs of opening a new branch with the costs of using one of the mobile integration models to establish "branchless" banking for mobile loan services. Importantly, Blaze

[8] Find a copy of the full report, with the cost analysis tool, at the following link.

and Ballast found that, given the right strategic model, *a branchless mobile banking model could be scaled to serve an entire department or country for a cost approximately the same as opening a physical branch.*

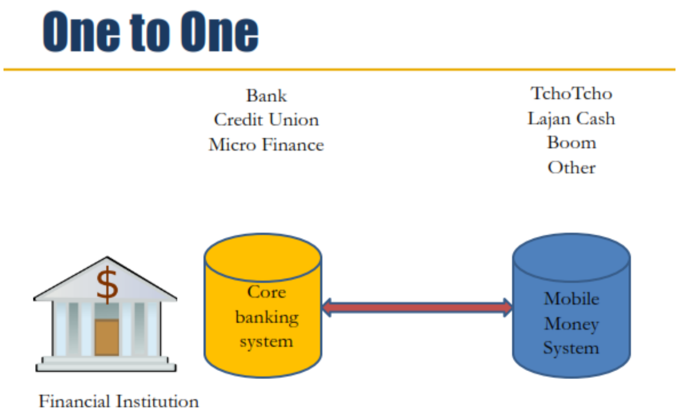
Two activities will help you determine which (if any) of the four mobile integration models is appropriate for your institution. First, review the summary of the four models (Activity 4-1). Then, use the "Interoperability Cost Analysis Tool" to estimate the costs (Activity 4-2).

Activity 4-1: Review the Mobile Integration Models

This summary outlines features, advantages, and disadvantages of the four integration models.[9]

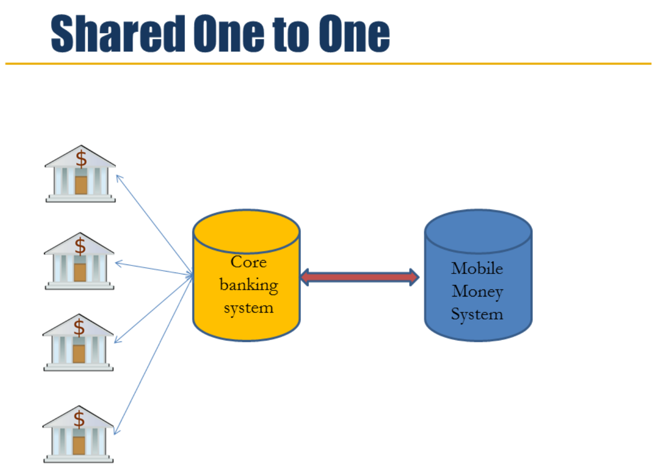
1) One to One Integration

This model is used when a single financial institution's core banking system is integrated with a single mobile money provider. This model can be expensive, both in start-up and ongoing operational costs for the financial institution, and limits the financial institution to a single solution. This model's main advantages are its simplicity, which likely means a faster launch, and its ability to interface with the legacy core banking system. Many Haitian financial institutions with mobile technology partners might consider using one to one integration to connect financial services with mobile wallets or to transition to a full mobile banking model.



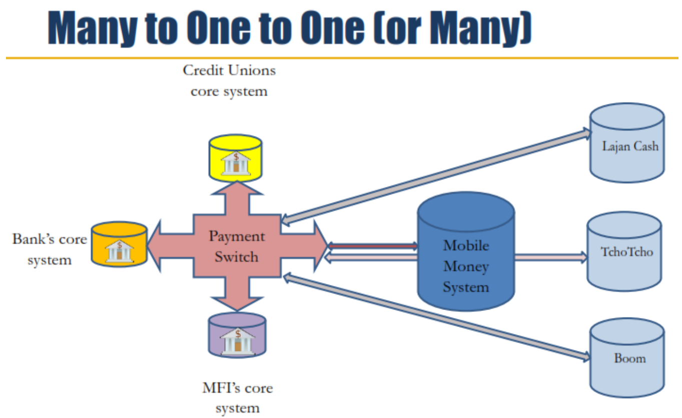
2) Shared One to One

In this model, a single shared core banking system serving multiple financial institutions is integrated with a mobile money system. For financial networks, such as MFIs and credit unions, multiple institutions can share integration costs across their (shared) core banking systems and a single mobile money platform. This requires agreement on a single solution for multiple financial institutions or MFI branches. MFIs that have already updated their core systems to enable the required application programming interface (API) integration could benefit most from this model if they wish to engage with a single mobile provider in the near future (an example is ACME, but this could also include other MFIs or credit unions that may or may not be a part of a larger network).



[9] The integration models and report were prepared when Boom was still operating in Haiti. As a result, Boom is included as an option in the models.

3) One [or Many] to One to One [or Many] (Payment Switch)



Many core banking solutions are connected to one payment switch that integrates with one or more mobile money systems. Introducing a nationwide (public or private) mobile payment switch to process mobile transactions and payments would create a wide range of integration opportunities for financial institutions and for mobile platform providers and third-party technology developers working with merchants or mobile network operators (see the box below). A mobile payment switch could enable integration with any number of core banking systems and mobile platform providers, reducing IT dependencies for the financial institutions. This would create more equality within the mobile money ecosystem, enable separation of responsibilities within the integrated network, and allow consumers to use the financial institution they trust while being able to pay merchants or make transfers, regardless of the recipient's account type or affiliated financial institution.

The Search for a Neutral Interoperability Provider in Haiti

In April 2015, HIFIVE presented the Interoperability Cost Analysis Tool and Guide and the four potential integration models to the Central Bank and Haitian financial institutions. Post-session feedback indicates strong interest in the topic, and when financial institutions were asked which models interested them most, they frequently referenced the possibility of a neutral payment switch.

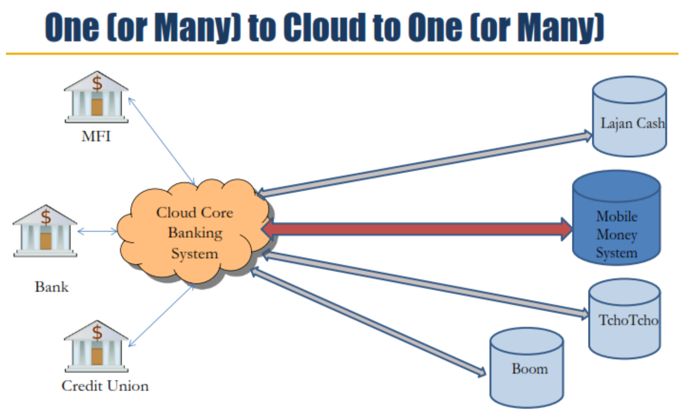
According to the Central Bank, the *Processeur National de Paiements* (PRONAP) platform — created to handle interbank payments, check reconciliation across banks and credit unions, and closed-network debit card transactions — was also designed to include mobile payments. Little public information is available on PRONAP, but in 2013 the Central Bank told participants at the 5th International Summit on Applied Finance and Technology that PRONAP would support mobile money and mobile banking by facilitating interoperability.* In other words, the Central Bank has recognized the need for interoperability and collaboration in the growing mobile ecosystem.

Following the April 2015 meeting, the Central Bank arranged a meeting with HIFIVE, HMMI, and a number of financial institutions and technology providers, where it became clear that its current design makes it unlikely that PRONAP could act as a payment or processing switch to support third-party partners or real-time transactions across mobile money or mobile banking services. Although there seems to be a desire within the Central Bank to control and regulate transactions across the sector, PRONAP may not be the appropriate technology. The opportunity remains for a neutral provider to enter the Haitian market to provide this kind of interoperable platform, which is of high interest for MFIs, banks, credit unions, technology providers, and payment processors.

* See http://groupcroissance.ht/wp-content/uploads/2013/09/Pr%C3%A9sentation-BRH-5%C3%A8me-Sommet-sur-la-Finance-Le-Processus-de-Modernisation-du-Syst%C3%A8me-de-Paiement-Ha%C3%AFtien-Monnaie-%C3%A9lectronique-et-banque-mobile.pdf.

4) One [or Many] to Cloud to One [or Many]

This model requires cloud-based core banking linked to one or more mobile money systems. For financial institutions that are willing to replace their core systems with a cloud-based model, more options are available to create a flexible mobile ecosystem. Cloud-based systems lower operational IT costs by reducing the need to maintain data servers. Cloud-based banking systems can be also integrated with multiple mobile platforms, allowing a greater variety of solutions and expansive ecosystems within a single financial institution or across a network of institutions sharing the cloud. A cloud-based core banking system, in combination with the kind of national payment switch described in the box above, would be the cheapest and most versatile solution.



Activity 4-2: Estimate the Costs of Mobile Integration

The integration approach your institution selects will depend on your budget, IT resources, capability to manage the data connections after launch, current business model within the larger financial network, willingness to adapt or replace core banking systems, and overall short-term or long-term mobile account strategy and business plan. The table below offers a side-by-side comparison of the four models. After reviewing the characteristics, advantages, and disadvantages of each model, use the "Interoperability Cost Analysis Tool and Guide"[10] to decide which, if any, would be the most feasible and cost-effective solution for your institution.

Table 1. Mobile Integration Models Comparison Chart

	One to One	Many to One	Many to One to One	Many to Cloud to One/Many
Haitian example	—	*Le Levier, ACME*	—	*Boom*
Decision-making	Fast	Slow	Average	Fast
Upfront infrastructure cost	Very high	High	High	Low
Ongoing infrastructure cost	Very high	High	High	Low
Upfront software costs	Very high	Low	High	Low
Ongoing software costs	Very high	Low	Medium	Low
Upfront operational costs	Very high	Very high	Medium	High
Ongoing operational costs	Very high	Very high	Medium	Medium (if not in network)
Compatible with legacy systems	Yes	Yes	Yes	No; replaces

[10] Download tool here.

Potential regulatory concern	Medium	Medium	Medium	Infrastructure not located in Haiti

Step 5: Research Partnership Opportunities

Selecting the right partners for a mobile money service is crucial for achieving a mutually beneficial relationship and stable revenue stream. Financial institutions do not need to be technology experts, nor should software providers need experience in financial services. Instead, the creation of strong partnerships offer each team the chance to contribute to the development of a well-rounded product that addresses the needs of the partners and, more importantly, the needs of the market. Regardless of the number of partners involved, each must take its responsibilities seriously and maintain a commitment to the early product development processes of addressing a market need, creating simple products and operational processes, working directly with regulators (as needed), and adapting as quickly as the market requires.

At this stage, your goal is to *investigate different partnership approaches and research potential partners*. The details of each partnership and the specific responsibilities should not be finalized until Step 8.

When selecting partners, financial institutions should consider the ICT barriers and resource gaps they identified during the ICT assessment and consider whether there are partners that could help address those shortcomings. Similarly, financial institutions should be aware that partners will evaluate their strengths and weaknesses as well. Technology providers or other partners want to make sure their financial partners are invested in the growth of the product and committed to selling it. Building trust is therefore crucial to ensure that all parties understand one another's missions and are invested in the same long-term vision. Communication and transparency around short-term and long-term expectations are extremely important (see the box at right). Not all products will be immediately profitable, and equal support will be needed on both sides of a partnership to ensure the ultimate success of a given product.

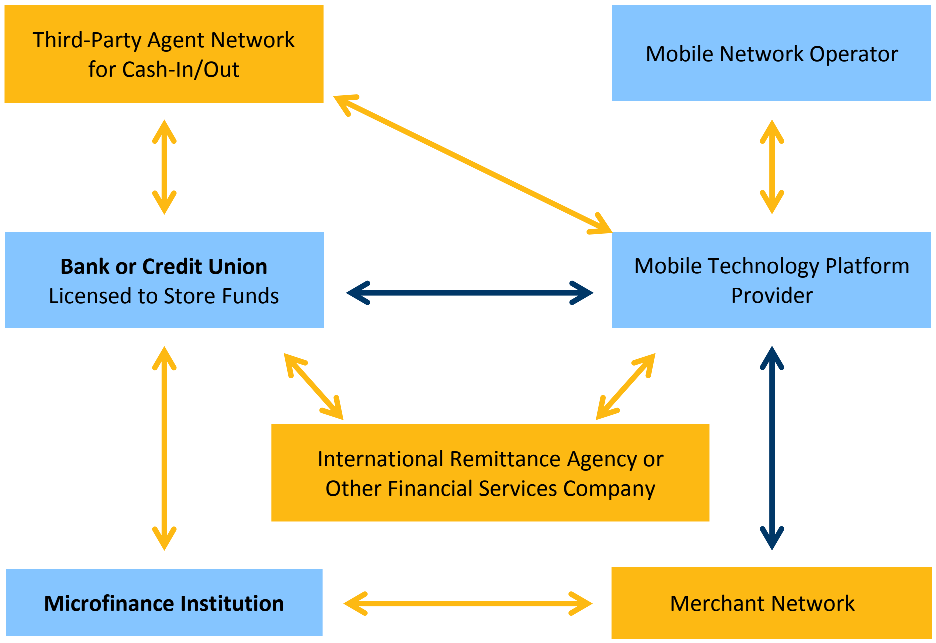
What Haiti's Financial Institutions Are Looking for in Their Partners

For Haitian financial institutions, the most important partnership trait is clear communication and transparency of objectives. Building a merchant (or national) network on their own would be cost-prohibitive, and falls outside the financial institutions' area of expertise. However, all those interviewed expressed a willingness to integrate in order to use an existing, interoperable network. All agreed on the need for an interoperable merchant or agent network. Across financial sectors, openness to non-exclusivity seems possible. Banks may want exclusivity against other banks, but willingness to partner with credit unions and MFIs is extremely strong. In addition to finding partners with strong communication practices, they want contracts and agreements that recognize the value that financial institutions bring. They may not want to be responsible for building the technology, but they want to be able to shape the technology so it serves their institutions effectively. In other words, they do not want non-exclusivity clauses when it comes to building a national merchant network, and they want interoperability to enable financial institutions to team up, when appropriate.

Potential Partnership Connections and Roles

There are countless partnership models to consider, including partnerships between financial institutions and mobile operators and three-way partnerships with mobile operators and third-party agents acting as cash-in cash-out agents on behalf of the banks. When considering how to form productive relationships for integrated mobile banking solutions, push yourself and your organization to think beyond the typical models. What else might be possible? The figure below offers a vision of existing and potential connection points for mobile banking, followed by a summary of the role of each partner.

Connection Points for Mobile Banking



Blue arrows represent required connection points. Yellow arrows represent additional connections that might be encouraged to expand the ecosystem of integrated mobile financial services.

Financial institutions offer accounts to consumers; provide account management, oversight, settlement, and reconciliation; and define the rules, limits, and requirements for mobile accounts. MFIs, however, are not regulated to offer savings accounts or accept deposits in Haiti, so they require integration between the software that manages their loans and a bank or credit union system that processes the mobile transactions. In other words, any model that makes operational sense for a MFI will require integration.

Mobile technology platform providers deliver the mobile solution and interface that satisfies the financial institution's business and operational requirements, providing as much or as little account management as the partnership arrangement requires. These providers are also potentially responsible for connections to mobile operators, payment systems, and other third-party solution providers. At a minimum, financial institutions should integrate core banking system(s) with a platform that connects a customer interface with the account information. Doing so will enable real-time processing and transparency of account information.

Mobile network operators: Mobile account providers cannot ignore the advantages of working directly with mobile network operators (access to USSD, marketing funds, even political leverage). With smartphone penetration still very low in Haiti, it may be several years before those applications become the predominant client interface. That means that the majority of mobile accounts depend on SMS messaging and USSD mobile interfaces accessible through clients' feature phone handsets. As smartphone penetration grows, the need for mobile carrier gateways to access USSD will be overshadowed by the need for smartphone and Web-based mobile applications, and the burden will fall to customers to have data or Internet connections.

Partnerships with mobile operators can be beneficial, as much for their experience with ICT solutions as for their experience with consumer sales and marketing strategy. Developing carrier-agnostic products is therefore strongly advisable. Just as cash, checks, and credit cards do not require a particular platform for use, the design of mobile solutions should seek the goal of wide acceptance in the marketplace. Mobile accounts that depend on a specific carrier will be doomed from the start; adoption will be hard enough without restricting merchants or consumers to a specific phone carrier. Financial institutions and partners need to discourage exclusivity and encourage interoperable solutions that will increase usage, for everyone's benefit.

Merchant networks can be created from scratch or by leveraging existing networks to expand points of service where mobile payments are accepted. A basic interface may be required for merchants to support mobile payments. The support of mobile applications, point-of-service payment systems, or other payment-processing mechanisms requires an integration with either the financial institution's core system or mobile platform, whichever is handling real-time transaction processing. Such connections require infrastructure support at the merchant's point of service. Merchants are not forced to decide between Visa and MasterCard, nor are they forced to use a specific bank. Interoperable solutions will benefit all vested partners: flexibility and freedom of choice will continue to drive competition and faster end-user adoption.

International remittance agencies: To supplement their revenue, many financial institutions act as cash-out locations for money transfers. MFIs and credit unions have been quite successful in avoiding exclusivity contracts, so that they can offer multiple services. Once integrated mobile platforms are established, financial institutions can begin to seek other money transfer services. With API integration, many remittance companies now have partnerships that enable real-time processing of transfers through mobile applications or Web interfaces, enabling funds from money transfer service to be applied to accounts at the financial institution.

Financial institutions that continue to invest in mobile interoperability should consider mobile remittance integration for additional revenue opportunities. Typically, financial institutions will require resources to manage the account, settle funds regularly with the partner, and, when necessary, provide IT support for integration. If the remittance company's system is integrated directly with the mobile platform, however, then the platform provider could help manage the relationship, and the financial institution need be responsible only for settlement of funds, assuming that the distribution remains digital and within the mobile ecosystem. The potential union of remittances and financial accounts could be a stepping-stone toward financial inclusion for the "unbanked."

Third-party cash-in/cash-out agents and networks: Existing mobile operators that provide top-up and other mobile services make excellent cash-in/cash-out points, but branchless services should not be restricted to these agents alone, nor should independent agents be forced into exclusivity contracts. The more financial services the agent can offer, the better education they can provide to end users, thereby creating more business and enhancing profits.

Mobile top-up agents are not the only networks worth considering when expanding a cash-in/cash-out network. Although cash is still a dependency, and will likely remain a necessity during the slow digital currency adoption period, financial institutions should include their branches as points of service for mobile account holders' cash-in/cash-out transactions. In addition, businesses (such as gas stations or hardware stores) that collect cash for goods or services can act as cash-out agents. While larger businesses (such as some grocery stores) that distribute more cash than they collect and are in need of liquidity and will be motivated as cash-in agents. The end goal for financial institutions is to convert mobile account holders to digital processing, but in the meantime, transitioning people away from cash requires a robust and widespread cash-in/cash-out network.

To support cash-in/cash-out agents, an agent-facing interface will need to be created and integrated with the core processing system to ensure real-time transaction processing. Integration is also necessary for financial institutions to have full visibility into transactions and support regular settlements. Similar to the merchant network, infrastructure and resource costs could be shared if multiple financial institutions cooperated to build or share service points throughout the country. The payment switch and "many to one" integration model (see Step 4) could take advantage of expanding an interoperable cash-in/cash-out network or third-party payments processing system.

By identifying needs in the cash ecosystem, financial institutions can build productive, mutually beneficial relationships with mobile network operators, technology providers, and local businesses. The regulations require all agents to be monitored by the financial institution, but one should be creative in deciding what makes a good agent. For informal agents, mobile banking may offer an opportunity to help regulate and formalize many of Haiti's merchants. For formal businesses, this is a chance to improve business operations and increase versatility and transaction volumes. Similar to the benefit of accepting Visa or MasterCard, any store that can accept mobile payments can add value and variety that may appeal to certain consumers.

Step 6: Understand the Consumer Market

Two key barriers for any mobile financial service are limited public awareness of mobile banking products and services and customer dissatisfaction. Users who are new to mobile banking, already uncertain about the new product they are exploring, may doubt a financial institution's partnership with an unknown network. (An example is Boom, which struggled when partnering with Le Levier because its name is not nationally recognized by consumers.)

Few Haitians understand what it means to store money on a mobile device. Despite 800,000 mobile numbers registering T-cash and TchoTcho accounts, the general public's seeming dissatisfaction with or confusion about the solutions prevents them from considering a mobile account as a viable alternative to cash. Lack of merchant awareness also misses the opportunity to drive acquisition in the common marketplace where cash is exchanged most often.

Haiti's financial institutions need to understand their behaviors and pain points, as well as what will help them attract new customers. In general, few financial institutions have tools or methods for measuring client behaviors or satisfaction. A few use questionnaires and customer satisfaction surveys, but they do not have clear customer acquisition strategies or market analysis research to drive strategic investment decisions. Financial institutions also do not have tools to evaluate mobile behaviors, likely because mobile services are still considered a low priority.

Activity 6-1: Gauge Customer Satisfaction and Financial Literacy

The customer satisfaction survey in Appendix F is designed to help you understand customer perceptions and how best to engage them. Specifically, the survey will help you:

- Determine how many of your customers have heard of mobile banking and how many really understand what it is and what its benefits are. Identifying the perceived benefits makes it possible to gear products and marketing toward reinforcing familiar elements. Identifying concerns and aversions makes it possible to design better solutions and consumer education efforts that will help your institution attract new clients.
- Understand consumers' levels of financial inclusion, financial literacy, and current financial behaviors. Identifying the most common ways users spend their money, including why they save or spend, will help your institution shape mobile products that address those everyday actions.
- Understand the circumstances in which consumers might try a mobile payment solution.
- Assess consumers' level of trust in current products and potential providers. Detailed follow-up questions are included to determine how they have acquired their perceptions and which marketing methods would be most effective in reaching the mainstream population in different areas of the country.

The survey is meant as a guide, and you should feel free to adapt it to your financial institution's specific market research needs. Anyone interviewing clients should have some background knowledge of the mobile financial service, so they can take the opportunity to educate consumers as questions arise during the survey. Consumer education is particularly important in a market such as Haiti's, where mobile money and mobile banking are relatively new concepts for many users. Efforts to gauge perceptions and market needs will require a parallel effort to educate the public. In such cases, many end-user surveys include educational elements (for example, gathering feedback on scenarios) as part of the questionnaires.

Educating the Haitian Public about Mobile Banking

Haitian financial institutions agree that there is a need to sensitize the public and build trust in mobile banking, but they believe the Central Bank (or the government, generally) should support awareness campaigns. Limited budgets and other resources also make it difficult for financial institutions to finance consumer campaigns; there may be a need for other organizations to provide financial support for educational campaigns and consumer research.

Although the Central Bank cites public awareness as one effort needed for PRONAP, financial institutions need to take greater responsibility for building consumers' financial literacy if they wish to promote adoption of mobile services. Technology providers and their financial institution partners need to share responsibility for educating users.

When asked which methods would be the most effective in educating the Haitian public on mobile financial services, financial institutions in rural and urban areas agreed that radio would be the best method, because it reaches the majority of the population, does not require reading ability, is less expensive than television, and depends less on electricity, which is unreliable in much of Haiti. The second most-cited method was grassroots campaigns, such as sound trucks or community outreach among trusted community leaders.

Step 7: Research and Define Merchant Strategies

Haitian financial institutions identified the absence of viable merchant solutions as a key barrier to consumers' adoption of mobile payment solutions. For financial institutions, this challenge is also an opportunity to increase mobile money accounts through merchant mobile accounts. Creating merchant-focused solutions will help strengthen the overall digital ecosystem; encourage cash payment alternatives for companies, merchants, and consumers; and, most importantly, create auditable transactional data on how money is spent and shared throughout Haiti to identify supply chains that can be used to develop future opportunities.

By better understanding merchant problems, financial institutions can lead the effort to develop mobile solutions that will help directly acquire merchant account holders and indirectly help acquire basic consumers of these merchants' goods. There is a lack of information on typical merchants in Haiti, however, it is known that some of the merchants that signed up to offer mobile money when it first launched, are having trouble assisting current customers with mobile money solutions. For instance, large merchants, such as grocery stores, were Tcho Tcho's primary partners during its launch, but today those same merchants are often unable to assist consumers who wish to make a purchase.

Since limited information is available regarding the current perceptions of merchants, HMMI hired a firm to survey small businesses throughout the country. The firm interviewed 526 formal businesses (medium and large businesses with formal paperwork) and informal merchants (small and medium enterprises and microenterprises without formal paperwork) in all 10 departments in rural and urban areas. The goal was to identify pain points, current awareness of mobile technology, and perceptions of electronic payments. (See Appendix G for the surveys.)

The general sentiments reflected by these small business owners were as follows:

- Cash is the preferred method for spending and receiving payments for goods and services.
- Many have heard of mobile banking, but few are using it.
- None have yet considered using the P2P option for business purposes.

- There is not enough information about mobile accounts distributed to merchants.
- Many still do not understand or trust the technology.
- They would prefer if financial institutions offered the services, instead of mobile operators.

For financial institutions wishing to develop merchant strategies and product solutions to drive increased use of mobile solutions, relevant findings from the surveys can be found in the "Haiti Mobile Money Business and Merchant Survey Results" [11] report and are summarized in Appendix H. However, you should consider this information *only as a starting point* to help shape specific research to ensure that your financial institution designs demand-driven products and solutions that meet the needs of your target markets.

The importance of developing merchant products is critical to improved consumer use cases and revenue opportunities. Understanding what drives a merchant to want a mobile solution will help determine what will keep them as satisfied and active users. Motivated merchants will make for satisfied consumers and the ecosystem can grow respectively. Solving current merchant operational pain points through mobile account solutions makes for a win-win scenario.

Step 8: Define Business Requirements and Use Cases

This step helps non-technical financial institutions outline, at a high-level, the requirements they want in a mobile financial service. Technology providers will depend on a final business plan and requirements to guide them as they create the final consumer use cases, product design, and specifications documents. In this step, you begin to transform what your financial institution has learned in steps 1 through 7 into a tangible, actionable set of business objectives. This is another opportunity for proactive thinking. As you work through these activities, do not feel limited to existing market solutions; think of the likely future needs of Haiti's population and how technology could address their struggles and barriers.

The process of developing high-level requirements for a mobile financial service occurs through three main activities — defining the mobile integration strategy and business requirements (Activity 8-1), developing "use cases" (Activity 8-2), defining specific product features (Activity 8-3) — and two activities to clarify operational and merchant-solution considerations (Activity 8-4). Once steps 1 through 8 are complete, the final scope of work should be outlined in extreme detail.

Activity 8-1: Define (or Review) the Mobile Integration Strategy

Requirements are part of the overall mobile integration strategy, which includes a business plan that provides:

- A justification for investing in the service
- A list of investment costs to prepare for mobile integration, with a budget outlined from the "Interoperability Cost Analysis Tool" (see Step 4)
- A list of potential partners to help with technology development or network expansion
- The merchant and consumer to be addressed (based on survey findings in Appendix H)
- A go-to-market approach

[11] Find a copy of the full report, with additional response data and findings, at the following here.

- General business and product requirements, drawn from the universe of variables (many of which should have been clarified in previous steps) that are driving the shift to a mobile integration solution

With clarity around the strategy, the financial institution and relevant partners will need to agree on terms, key business requirements, and the final scope of work for the product in question. For example, the product may have a core offering (the basic account for storing funds), with additional services such as merchant accounts, loans, and payroll.[12] Once parties agree on the details of the consumer experience and features, design mockup and development can begin. The final steps will be a mutual review of the project plan, which will include the integration plan, security requirements, and any operational dependencies. Program and product managers will be needed to manage the project throughout the development cycle and to completion.

Activity 8-2: Develop Use Cases for Mobile Financial Services

One new challenge for financial institutions is the need to define use cases for the desired mobile products. Few financial institutions have ever designed their own products; many are recycling the ideas of other institutions or offering basic products that have existed for decades in Haiti. Creating mobile-accessible services requires challenging the way things are done and defining new features to better serve the institutions and their clients. The initial use cases will help drive partnership discussions and help shape the required product features.

Use case development is the time to address key barriers for consumers, merchants, and other stakeholders. For consumer education and marketing purposes, keep scenarios simple and easy to understand. Each use case should include several specific elements, outlined in Table 2. Appendix I presents a sampling of use case scenarios.

Table 2. Use Case Elements

Main Element	Examples
The primary actors	• The consumer • Financial institution agents • Mobile loan officers • Merchants • Other people involved in a given transaction
The systems and applications involved	• Mobile applications for consumers, merchant, or agents • Core transaction processing system • Financial institution's core system or cloud-based interface • Mobile operator gateway • Any partner systems involved in the transfer of information
A basic chronology of actions	• Consumer registration flow • Merchant registration flow • Cash-in • Cash-out • Mobile loan disbursement

[12] Each feature may require its own partnerships, depending on the agreements and technologies involved. It is sometimes best to start with one or two key partners to launch the product, and bring in other features and account types after the initial launch.

- Mobile loan repayment
- Bill pay
- Payroll or large bulk disbursements
- Merchant payment processing
- P2P transfer
- Person-to-business transfer
- Interbank transfer
- Intrabank transfer

Activity 8-3: Define Product Features

As the use cases evolve, product features and design elements will become more specific. Features that address users' specific needs will be crucial in distinguishing between mobile financial products in the marketplace. For example, features for those in rural areas may be focused on agricultural products and loans, simple accounts, ensuring stable connections, and ease of use. Needs in urban areas may be more focused on marketplace demands, strong reporting capabilities, and improved back-end interoperability. The growing trend toward smartphones means that more sophisticated mobile apps can be developed, with less dependency on mobile network operators for USSD connections.

Table 3 lists applications and features that could be requested, based on the type of user.

Table 3. Sample Product Requirements Matrix

	User	Informal Merchant	Formal Merchant	Third-Party Agent	Enterprise	Financial Institution
Smartphone application (such as Android or iOS)	◆	◆	◆	◆		
SMS notifications and alerts	◆	◆	◆	◆		
Interactive USSD interface for feature phones	◆	◆	◆	◆		
Carrier-agnostic	◆	◆	◆	◆		
Web-based application			◆	◆	◆	◆
Point of service system			◆	◆	◆	◆
Online account access			◆	◆	◆	◆
Email notifications and alerts			◆	◆	◆	◆
Secure login	◆	◆	◆	◆	◆	◆
Simple text and language support (Creole, French, English, Spanish)	◆	◆	◆	◆	◆	◆
Balance check	◆	◆	◆	◆	◆	◆
Transaction history	◆	◆	◆	◆	◆	◆
P2P domestic transfers	◆	◆	◆	◆		◆
Cash-in/cash-out at financial institution	◆	◆	◆	◆	◆	◆
Cash-in/cash-out at third-party agent network	◆	◆	◆	◆	◆	◆
Mobile loan disbursement and repayment	◆	◆	◆			◆
Ability to initiate payment to merchant	◆				◆	◆
Ability to approve payment to merchant	◆				◆	◆

	User	Informal Merchant	Formal Merchant	Third-Party Agent	Enterprise	Financial Institution
Bill pay for utilities/monthly expenses	◆	◆	◆	◆	◆	◆
Direct deposit					◆	◆
Monthly statements			◆	◆	◆	◆
Transaction monitoring with real-time alerts			◆	◆		◆
Ability to request payment from customer		◆	◆	◆		◆
Ability to receive and approve customer payment		◆	◆	◆		◆
Client contact management			◆	◆	◆	◆
More transactions allowed per day/month		◆	◆	◆	◆	◆
Different price model to incentive usage	◆	◆	◆	◆	◆	◆
Payment request			◆	◆		◆
Payment processing			◆	◆		◆
Income tracking/tax/business reporting			◆	◆	◆	◆
Retrievable receipts	◆	◆	◆	◆	◆	◆
Ability to send request to financial institutions			◆	◆	◆	
Ability to process tips for service industry (restaurants, hair salons)			◆			
Payroll management					◆	◆
Bulk disbursements					◆	◆
Loan disbursements						◆
Fraud monitoring						◆
Ability to block, suspend, close accounts						◆
User access and management						◆

This illustrative list is meant as a starting point, and some features may be launched in phases. Every feature should have clear documentation of how it works, in simple terms for users and customer support teams, as well as operational documentation and contingency plans for system failures or connection outages.

Activity 8-4: Clarify Operational and Merchant-Solution Considerations

Operational program support and design are just as important as product design.

Operational Considerations

As solutions are developed, operations should also be established to support business needs:

- Consider forming strategic partnerships with merchants that accept cash payments for goods and services, to make it possible to offer cash-in/cash-out services.
- Initiate strong training programs for merchants, agents, and consumers.
- Provide ongoing customer support for consumers and merchants in branches or through call centers.

- In advance of any pilot launch, agree on high-quality service-level agreements with merchants and solution providers and test them to ensure that procedures are followed.
- Create and test contingency plans to prepare the business to mitigate impact of any failures on users.

Considerations for Merchant Solutions

This section describes considerations for two existing merchant solutions — P2P and point of sale. Your financial institution should survey current and potential merchant customers to refine your understanding of their needs and the requirements for serving them.

Informal P2P Payments

The most important mobile service for early adoption is an informal P2P solution for merchants. A simple P2P model can make immediate use of existing technologies to support informal transactions that already take place all across Haiti. P2P should be as convenient as cash.

Mini-wallets and full wallets can both be used for informal P2P (mini-wallets require no ID, but have lower limits than full wallets). Ideally, collecting at least one ID type from the merchant and establishing a formal account at the financial institution would benefit the merchant and encourage bank compliance; however, this should not determine customer acquisition. The preferred approach is to phase merchants into formal accounts; slowly "banking" merchants should lead to more savings and loan services for merchants and improve their financial literacy. It will also help establish data on users, whose information can be added to a central database (potentially made available by the Central Bank) to support credit checks or merchant regulations. This is the pathway for financial inclusion. It helps small merchants grow their businesses and access financial services that will aid them along the way. The more merchants join the ecosystem, the more visibility mobile payments will have for everyday users, and the more consumers will desire to have their own mobile accounts. This solution should focus on mobile technology and create a simple interface for merchants to accept payments for goods and services. Ideally, the product would be enabled to accept any local currency (gourdes, dollars, or euros), and currency conversion can be built into the product.

The purpose of the informal merchant solution is to allow small transactions to be conducted electronically instead of using cash. Similar to the technology applied by T-cash and Boom, long-string USSD commands for GSM telephones can be used to send text commands between a mobile phone and an application in the network. Merchants could have dedicated numerical code commands, like those used by the Visa and MasterCard debit card networks. Different codes could be issued for different operators, although an ideal setup would provide a single numerical code for each merchant, regardless of the carrier. Such a solution may require CONATEL's involvement to ensure interoperability between network providers. The desired outcome would be that a consumer on the street could engage with a merchant, negotiate a price, and send a text message with the amount and the merchant code to trigger the payment. The merchant would receive a message or USSD interface, allowing the merchant to accept or decline payment.

There is little need for extravagant features in an informal merchant solution. Many transactions are small in value, and therefore there is less risk. Regardless, customer support must always be available to support consumers and merchants with failed transactions or specific errors. Security should also be considered carefully, since a typical user's understanding of technology is likely to be limited. As with all financial products, security must be balanced with usability. If the goal is to replace small cash transactions with digital ones, initial limits and restrictions should be as similar to cash as possible.

Point-of-Sale Solutions for Formal Merchants and Larger Businesses
Large businesses (such as gas stations, hardware stores, and grocery stores) will need more sophisticated point-of-sale solutions. The terminals provided for card networks have proven very difficult, even for large merchants, and mobile technology companies would do well to learn from these shortcomings. The answer is either a large investment in Internet stability and ICT infrastructure at the merchant location or a different communication method. Lower-tech solutions that do not require complex integrations are also possible. For example local technology firm, Transversal has created customized voucher solutions to work in parallel with mobile wallets. Integration is the goal, but a combination of paper-based methods for the end user and more sophisticated, Internet-based systems for the merchants may be a good way to begin a gradual, phased approach toward completely digital transactions. HaitiPay has made significant strides toward an agnostic consumer and merchant solution that has no Internet or carrier-specific dependency to complete a transaction. Outfitting a merchant with a Lajan Cash point-of-sale system costs about $1,500. For institutions wishing to develop their own technology, USSD solutions can be developed with the same look and feel of a smartphone application. Actual smartphone apps could be used for improved applications that leverage a data connection to the Internet. In many large merchant stores, Wi-Fi or the line-in Internet connections used for card point-of-sale terminals can be leveraged for Web-based applications. Regardless of the approach, contingency plans must be equally reliable and easy to use and the solution must be dependable and as stable as possible to minimize negative user experiences.

Integrated solutions offer more ways to serve businesses through mobile services. Real-time reports enable better cash drawer management and settlements between the merchant and the financial institution. For example, a formal merchant might need to print the day’s transactions to balance their cash drawer. Because real-time reports are crucial, the application must have a direct line to the servers. This is another reason integrated solutions are the preferred approach.

Daily settlement should be supported, and financial institutions must have personnel able to monitor accounts on a regular basis. The greatest challenge with formal merchants is motivating them to receive mobile payments. Since cash remains the cheapest option, the early adopters will likely be locations that have an abundance of cash or those that are already using credit cards but looking for a cheaper solution. Without a card network between the merchant and the bank, mobile should offer more revenue for each party. Merchant costs should be low enough that the solution is affordable, but high enough that banks and technology providers can earn some revenue to cover expenses and gain a return on the early investment.

No one solution will ever serve every person, and Haiti’s challenges — of illiteracy, low technological savvy, poor infrastructure, limited Internet connectivity, and varied business types — add layers of complexity. Some users will be better suited for smartphone applications, while others prefer simpler feature phones or text messaging. In rural areas, consumers with limited access to financial institutions may be more incentivized to pay for services than their urban counterparts, who have more financial services options. It will be up to you, the financial institution offering the solution, to know your target demographic, research merchant and consumer needs, and be prepared to customize solutions to provide an incredible customer experience within a branchless banking model.

Step 9: Advocate and Lobby for Regulatory Reform

Regulation is a critical component of a secure ecosystem for mobile financial services, including those that govern financial institutions. In Haiti, the lack of regulation and the speed at which modifications are being passed has stunted the growth and potential of mobile money. Without an adequate regulatory framework, long-term development and investment in mobile, interoperable solutions, or e-currency settlement is risky for Haitian institutions. However, reform cannot happen without significant involvement of the financial institutions to drive appropriate actions. This is why it is important for financial institutions to continue developing mobile solutions, and for those solutions to *inspire advocacy for legislative reform*. Only then can financial institutions and their partners build an ecosystem that can compete with cash.

This final "step" differs from the other eight, in that advocacy must be a continuous effort. The section begins by sharing information to expand your understanding of the regulatory status and needs related to mobile banking in Haiti (Activity 9-1), and then offers specific recommendations that can be applied in advocacy work (Activity 9-2). All of the content is designed to assist your financial institution in preparing to advocate for regulatory reform that will respond to the needs of providers and consumers of mobile banking.

Activity 9-1: Understand the Status of Mobile Banking Regulation in Haiti

The expansion of mobile financial services and real-time processing of electronic transactions depends on appropriate governing laws and regulations, but to date in Haiti, insufficient legislation has hindered development of mobile financial solutions. Regulatory reform in 2010 was designed to support TchoTcho and T-cash — two products designed by mobile operators, both considered mobile wallets. The reform addressed *banque à distance* (bank at a distance) with a modification to support agents processing deposits and withdrawals on behalf of the banks, clarified the acceptability of mini-wallet accounts that do not require KYC information for account registration, and added restrictions on mobile wallet account totals and transaction volumes to minimize fraud. However, the new policies did not look beyond "wallets" to incorporate reforms for electronic banking products or protect electronic payment processing.

In the five years since mobile money was introduced, the Central Bank has not addressed key issues. Although specific legislation to govern mobile banking is unnecessary (it falls under current banking and credit union regulations), the e-governance law is still awaiting a vote in the Senate. In addition to accepting e-signatures for credit unions and other financial institutions, the law discusses regulations for controlling and monitoring payment systems. Current laws insufficiently protect consumers and financial institutions from hackers or other data breaches. There are no laws regulating data security; worse, data breaches are not illegal, nor may digital evidence be considered in a court of law.

Pending e-governance legislation is unclear on which body will be responsible for oversight of new regulations. Many financial institutions believe that CONATEL should be more involved in regulating mobile banking, in reality it is tasked only with regulating telecommunications providers Natcom and Digicel. Financial institutions see CONATEL as more experienced with technology than the Central Bank, and therefore situated to help shape governance of data security and mobile money. However, it is important not to blur the lines of responsibility. CONATEL could be given greater authority to regulate and enforce the open USSD gateways that are used to transmit information, but this is different from giving the telecommunications regulator authority over financial systems, transaction processing, and consumer funds.

In short, financial institutions would like to see more cooperation between the Central Bank and CONATEL to clearly define the responsibilities around mobile money. For example, Digicel exchanges minutes as a bonus for depositing money into Mon Cash, and some worry that this is creating a value beyond the 1:1 relationship between paper and electronic currency. CONATEL does not have the power to interfere one way or the other, and this leaves a large gray area with no laws to support or oppose how mobile operators handle e-currency.

When it comes to laws and other regulation, Haiti's culture seems to support an attitude of "wait and see" — waiting for a problem to arise, and fixing it after the fact. This can be risky with digital financial services, as failure to create an appropriate framework could lead to extreme risk down the road. On the other hand, low usage does not yet warrant regulators' time and attention, which would be needed to reconsider and revise the rules governing mobile financial services. The next section provides specific recommendations for financial institutions to use in advocating for regulations to support the growth of an interoperability model.[13] Reform is not just about national e-governance reform; it also requires an honest look at how to apply current "banking" guidelines — which shape KYC requirements, money-laundering policies, and other operational security measures that minimize risk for financial institutions and consumers — to mobile financial services and the expanding ecosystem.

Activity 9-2: Review Existing Regulations and Consider Policy Recommendations

Credit Unions and Microfinance Institutions

Credit unions and MFIs have an important intermediary role, providing access to financial services and microcredit for those of modest means (whom banks would turn away) and those outside Port-au-Prince. Yet, many operate without oversight. Regulations for credit unions are outdated, with standards that differentiate them from banks. MFIs are unregulated, despite their strong presence and inclusive services throughout the country. MFIs have long been awaiting the passage of directives to differentiate those that may accept deposits from those that may not.

Regulated financial institutions enable the Central Bank to monitor the stability of the national economic balance, and only regulated institutions are permitted to offer savings accounts and similar services. Excluding credit unions and MFIs significantly limits their potential to rapidly expand mobile money in hard-to-reach rural communities. It is shortsighted to exclude smaller financial institutions because they cannot meet the more stringent standards set for banks, while denying them access to regulations that could guide them toward policies that would enable them to meet those standards. Laws for credit unions and MFIs need to be modernized to reflect the services that are being offered and provide a clear regulatory framework. In the meantime, nothing technically prevents them from offering mobile money services or creating products that allow access to information via mobile applications.

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[13] Who carries out the recommendations will depend on the financial institution, the donor project or Haitian government institution (if applicable), and the phase of development.

Policy and Advocacy Recommendations for MFIs and Credit Unions

Policy that supports the MFI and credit union sector will directly support the growth of mobile accounts. In 2012, the International Monetary Fund recommended that MFIs and credit unions play an equal role in strategizing actionable steps for changes to their regulation and supervision, as follows:*

- Establish reporting requirements appropriate to the size of each credit union so better transparency of information is available about the sector.
- Establish a regulatory framework for MFIs to differentiate between deposit-taking institutions and those that do not accept deposits, with provisions for joint liability.
- Develop new action plans to expand collection and improve the quality of financial information.
- Conduct a study to determine options to promote the consolidation of small credit unions as a way for them to achieve lower operational costs and broaden their range of services.
- Qualify credit unions and MFIs to participate in the payment system, such as the credit registry.

Access to and transparency of information across sectors is a major hindrance. Without stringent requirements from the Central Bank, no institution wants to be the first to volunteer information about the health of their institution or client portfolios.

* *Haiti: 2012 Article Consultation and Fifth Review under the Extended Credit Facility* (e-book), 2013, International Monetary Fund: Western Hemisphere Department, p.8.

The Banking Sector

Banks are critical to Haiti's economic development, but the system is in need of reform. It was only in May 2012 that a new banking law gave the Central Bank the authority to regulate and supervise new categories of financial institutions, including investment corporations, factoring institutions, credit card companies, fiduciary institutions, and development finance institutions. The law reinforces the Central Bank's responsibility to directly intervene with problem banks or in potential crises. It also provides better protection to bank supervisors performing their duties.

New circulars were introduced in 2012, requiring banks and credit unions to establish prevention and compliance programs to prevent money laundering — an important consideration in evaluating domestic and international mobile banking solutions. Electronic transfers enable real-time transactions that require more prudent fraud triggers, as well as transaction volume and velocity monitoring. Circulars on business control and fraud compliance for electronic transactions and system controls should be considered in regulatory modifications. Finally, a key challenge for commercial banks in granting loans is the lack of protection of creditors' rights.[14]

[14] *Haiti: 2012 Article Consultation and Fifth Review under the Extended Credit Facility* (e-book), 2013, International Monetary Fund: Western Hemisphere Department, p.8.

Policy and Advocacy Recommendations for Banks and Mobile Banking

Recommendations from the International Monetary Fund's 2012 report still apply, as they have yet to be addressed:*

- Continue to implement new banking laws recommended as part of the World Bank's Financial Sector Assessment Program.
- Establish a credit registry to provide a centralized database for the financial sector.
- Improve the risk focus of the supervisory role overseeing the banks.
- Upgrade IT infrastructure for automated data collection, enabling better risk analysis statistics.
- Continue to stimulate competition in the banking system.

As the primary regulated financial bodies, banks set standards for new methodologies and set the example for other financial institutions. They also provide the most KYC data to the Central Bank. This information alone should be enough to start building the credit database, which all financial institutions could leverage. Banks must collaborate in the creation of interoperable solutions that enable better information sharing, with the Central Bank and with one another, for improved protection and innovation across the financial sector. As banks lead these initiatives, smaller financial institutions will follow, as mandated by the Central Bank.

Beyond updating standard banking legislation, modifications specific to mobile banking are needed:

- For mobile banking accounts, a single, valid government ID should be the required standard. Many financial institutions believe this should be the *Carte Identification National* (CIN), which has recently begun being issued to all Haitians at age 18 and includes an image of the person and their thumbprint. Over time, the CIN is likely to be the most standard ID type.
- As mobile account use grows, a centralized database of mobile account holders should be created, similar to a credit registry, to monitor consumer behaviors across financial institutions.
- Interoperability should be enforced to support bank-led models without monopolies and allow non-exclusivity among third-party operators and providers.
- Regulators must formalize the body that will enforce legislation as it applies to mobile carriers, technology providers, and financial institutions offering mobile financial services.
- E-governance guidelines for electronic payment authorizations for merchant and other mobile payments must be passed by the Senate and, more importantly, shared with the financial institution sector and other companies that will be directly affected.

* *Haiti: 2012 Article Consultation and Fifth Review under the Extended Credit Facility* (e-book), 2013, International Monetary Fund: Western Hemisphere Department, p.14.

Regulatory reform cannot wait for mass adoption of mobile financial solutions. Governing bodies need to address the reality that technology solutions are beginning to shape financial services globally. Incredible economic opportunities will benefit government agencies, financial institutions, large enterprises, formal and informal merchants, and consumers once the technology is acknowledged, embraced, and shared. The change must start somewhere, but if financial inclusion is truly the goal in Haiti, then the government and financial sector must take action to drive the changes they wish to see in transforming accounts into mobile accounts, financial institutions into branchless institutions, and transactions into digital transactions.

III. RECOMMENDATIONS FOR MOBILE FINANCIAL SERVICES IN HAITI

The path forward can seem daunting, especially if financial institutions feel responsible for developing bank-led mobile account solutions. However, the challenge of adoption falls on the shoulders of many. Individuals and groups can take small, actionable steps to move Haiti forward for the benefit of all. A summary of recommendations can be found below. Some are general, applying to the entire sector, and some apply to the specific circumstances of banks, credit unions, and MFIs.

Recommendation 1: Include ICT Strengthening in Short-Term Strategies

Financial institutions should be investing in core systems that are capable of integration. Organizations that strengthen their infrastructure and networks in the short-term will be more competitive once interoperability is an option, because they will have laid the foundation that prepares them for the solutions that are coming. Financial institutions should seek better dedicated-network connections and research mobile sector partners with complementary strengths.

Recommendation 2: Develop Better Mobile Loan Solutions

Financial institutions should introduce accounts that would allow mobile loans and loan disbursement. Loan programs are in high demand in Haiti, not only in urban areas, where many options already exist, but especially in remote regions of the country, where access to financial services is more difficult. By working together, banks, credit unions, and MFIs could help to serve the underserved and begin to address financial inclusion in a new way while profiting from the interest.

Recommendation 3: Expand Merchant Services

Regulated financial institutions should develop formal business merchant accounts to serve a different type of clientele: an expanding mobile money ecosystem will be stronger with new clients and new use cases. People need ways to use the cash they store electronically. Without a strong merchant network there may never be mass adoption of a cashless mobile model.

Mobile is better than the other electronic options currently available in the market. A better mobile solution for merchants would mean more transactions and more stable consumer perceptions of mobile money overall. A more dependable and affordable mobile solution could lead to more business clients and new revenue streams.

Recommendation 4: Build a Product and Processes Suitable to the Financial Institution's Needs

Financial institutions should not expect an out-of-the-box solution. Technology providers are experts in technology not banking, and financial institutions cannot depend 100 percent on product developers. They need to be involved in the design and implementation of a service offering that meets their needs and those of their clients. Financial institutions must be active collaborators in identifying client needs, product gaps, and operational inefficiencies that can be improved through mobile solutions.

There are many paper-based procedures in banks today that will benefit from automation and electronic processing, once e-governance is approved, but the financial institution's involvement cannot stop with licensing and monitoring. A top-down approach that includes proactive training for employees will ensure that all employees are engaged and supportive of the product they are expected to sell.

Products should be adapted to better serve the institutions' operational needs, with special time devoted to defining reporting requirements and contingency plans, and manual processes minimized and work efforts automated whenever possible. The operational aspects of supporting mobile accounts day to day should be separate from the product development process. If too many processes are manual, simplify the product or engineer an automated solution. The processes need to be scalable.

Recommendation 5: Prepare a Dedicated Team

When it is time to launch a mobile product, make sure there is a dedicated team at the financial institution and in its branches to provide risk oversight, compliance monitoring, technical support, and financial support. Mobile money products have new operations and procedures, and settlement and reconciliation will still require a team of account managers, with the need to add personnel as transaction volume increases. Redundancy and cross-training are also important, even when the program is small, because they prepare the business to scale up.

Recommendation 6: Include Interoperable Models in Long-Term Strategies

Well-funded institutions are in a strong position to be first to market with new products and solutions, and they can afford to wait for success. They can also afford low transaction volumes and high operational costs early on, as they await mass adoption. With a focus on high-volume transactions, eventually costs can be reduced. As the ecosystem strengthens and clients begin to trust the services, more mobile technologies can be introduced. This creates a scenario where physically entering the financial institution becomes the exception rather than the norm.

The focus should be on long-term strategies for building an interoperable network model. Investment planning should begin to determine the correct model for the network and plan shorter-term goals to increase technological literacy, enhance infrastructure, and stabilize Internet connections. Once invested, financial institutions need to be "all-in" — prepared to bear 50 percent of the responsibility for investments, marketing, education, and execution to ensure the product's success.

Recommendation 7: Form the Right Kinds of Partnerships

Selecting the right partners requires a thorough understanding of each partner's mission and responsibilities. It is important to build trust between the partners to ensure that all are invested in the same long-term vision. The fact that not all partners will be immediately profitable will require support to ensure the survival and ultimate success of any product.

Banks should seek larger corporations as strong partners to support payroll services into mobile accounts and seek large formal businesses to become cash-out locations. New partnerships among credit unions should be encouraged to help strengthen the network as a whole. MFIs should investigate international loan sponsorship programs that link loans in Haiti with remittances from abroad that serve as payment or collateral for local loans.

Partnerships between MFIs, credit unions, and banks will foster stronger interoperability. Joint ventures will help lessen the financial burden on any one financial institution and increase the level of expertise and knowledge sharing to help to solve problems.

Recommendation 8: Advocate for Regulatory Equality

If the Central Bank is serious about realizing interoperable mobile banking in an effort to provide financial inclusion, then inclusion must begin inside the financial sector. MFIs can play an important role in expanding access to mobile money products and services, given their wide reach, especially among low-income clients. However, current regulatory prohibitions on directly offering mobile solutions complicate their ability to serve the market effectively.

Financial institutions must work together to address and voice their needs in the mobile solutions market. Speak out, advocate, and lobby as a unified entity for the needs of the mobile financial sector.

IV. CONCLUSION: TIME FOR "COOPETITION"

Haiti is on a path toward interoperable mobile banking, but there is a need for clarity in the financial sector on how to move the country forward. Financial institutions need to be stronger advocates for the solutions and models they believe are necessary. More thought needs to go into how cash moves through the country and how cash services can be converted to digital currency. To overcome regulatory barriers, financial institutions need to think beyond what regulations create and support momentum behind innovations that will motivate the Central Bank to improve regulations. They need, quite literally to create the change they want to see in the world by building better solutions for consumers, financial institutions, regulators, and government bodies overseeing the programs. Stronger collaborative partnerships will create more innovative ideas. In this early stage of mobile money, "coopetition" — *cooperation* and *competition* among entities within the financial sector — will be necessary until more consumers have adopted the newer mobile banking technologies.

Integration models that foster national interoperability are the best way to promote mass usage throughout Haiti. In addition, creating new varieties of mobile solutions, especially mobile loans and better merchant payment solutions, will address real consumer needs and present mobile solutions as a clear improvement over cash. Information sharing throughout the financial sector must continue, as a way to empower everyone to take action and begin to develop unique strategies that will move Haitian financial services into the modern, mobile era of banking.

APPENDIX A. FINANCIAL INSTITUTION RESEARCH QUESTIONS

Introduction Questions

1. Have you considered introducing a mobile banking component as part of your financial service offerings? (Yes or no, if yes how much research has been done)

   If you have mobile service, why did you choose that partner/method? How's it going?

   What challenges are you having? Is it making things more efficient? Has it lived up to what it promised? What was the turning point? What were your expectations then and what are they now?

   Quantify the expectations.

2. Do you view mobile banking as
   a) a way to expand as a (cash-in cash-out) network?
   b) an opportunity to sell more of your own products (ex: more savings and loans)?
   c) a way to remain attractive and competitive compared to other financial institution?
   d) Other

Main Questions for in-depth conversation:

3. Have you considered making an investment in mobile banking similar to how you would invest in a new branch, where you make up the branch cost by increasing the number of loans and services that earn revenue?

   Following questions will be provided as a spreadsheet that they can provide during or after the interview

   a. What is the motivation for opening a new branch?
   b. What drives the decision most?

   a) What is the cost of building a new branch?
      i. One-time investment costs: Building, lease, materials, new computers, generator, batteries, furniture

   b) What is the ongoing operational cost of a new branch?
      i. Employees' salaries, electricity, internet, telephones, security

   c) What is the timeline to get a new branch ready to open its doors?

4. What is your average net financial mediation margin (approximation) between your income (loan portfolio, bank statements, exchange rate profit) and your cost of funds (paid savings account interest rate, placement?

5. Do you know how much you would need to make in new loans or other serves in order to justify building a new branch?
   a) What other financial (monetary) factors weigh into the decision to open a new branch?

6. What do you currently pay for your core banking software?
   a) License fee?
   b) Monthly costs?
   c) Annual IT support?
   d) Additional operation support costs?

   If using core banking software:
   i. Have you looked at costs with your core banking software provider?
   ii. What would it cost to create an interface to your core banking software (such as to offer a card program or other service)?

7. Do you have someone on staff at your financial institution that provides IT support for your core banking technology, or does the core banking service provider provide it?

Potential additional questions:

8. What other major technology barriers prevent you from introducing mobile banking?

9. Would you prefer a solution that is integrated with your core banking solution, or something separate?

10. Would you be ok with a banking solution that required an Internet connection?

11. If you introduced mobile banking would you invest in hiring a new dedicated resource to manage the program?

If the financial institution has given thought to mobile solutions before:
What type of customer features and services would you include in your mobile banking solution?

- Savings account
- Loan/credit management
- Bill payment
- Merchant solution
- Payroll
- Check deposit
- Account statement/account management
- Smartphone application

What type of services do you (as a financial institutions) need to manage your mobile banking service?

- Reporting interface
- Customer alerts and notifications
- Customer care support
- Card services
- Customer account interface

Would you rather have a customized platform designed and built for your financial institution? Or would you rather buy an existing platform that is readily adapted to your financial institution?

APPENDIX B. BENEFITS FROM MOBILE MONEY IMPLEMENTATION IN HAITI

Mobile Loans

Banks, credit unions, and MFIs all provide loans that, if made mobile, would have operational and financial benefits for all institutions. Hypothetically, new mobile loan officers could reach clients in any region and provide microloans through mobile technology without “brick and mortar” points of service. Interoperable loan technologies already exist that could be integrated with banking software to support digital enrollment and credit loan decision processing.

Banks and credit unions with established savings and loan programs would benefit greatly from this type of service. Banks with microfinance subsidiaries would benefit from established working relationships and settlement models. Banks can use a mobile model to reach more clients beyond existing points of service. Credit unions would benefit with the advantage of strong loan officer programs that reach rural communities to provide education and training that foster financial literacy. Credit unions with agriculture and educational loan programs could pilot a mobile solution in strong markets to uncover best practices before scaling nationally.

For MFIs, partnerships with banks or credit unions are necessary to enable mobile loan disbursement and (more importantly) mobile repayment. Mobile accounts can receive the funds, which customers can then use to invest in small enterprises. If consumers receive payments for services or mobile transfers to their mobile accounts, then loan repayment could be electronic, eliminating the need to visit a branch and with the benefit of real-time settlement between the MFI and its partner bank or credit union. Integrated mobile loan services would allow MFIs to offer branded products that leverage their names and trust within the communities.

For more details on mobile loan strategies and integration model requirements that support these services, see Steps 3 and 4.

Converting Remittance Transfers to Savings and Currency Exchange Revenue

Another way banks, credit unions, and MFIs attract new clients into the “banking” sector is by offering remittance services. Offering remittance services allows financial institutions to receive additional revenue streams from the remitting agency and through a possible in-branch currency conversion from U.S. dollars to HTG with a foreign exchange markup.

International mobile remittance models also provide revenue generation opportunities; assuming a strong merchant and branchless agent network, they also remove the necessity for cash payouts at branches. Models could also allow currency conversion with dual-currency mobile accounts, completely automating existing practices, reducing operational costs, and maximizing return on investment. While the profit margin could be smaller with mobile models as technology providers take a cut of the transfer fee, the per-transaction cost to the financial institution is lower than in-person transactions, and the volume of transactions should increase as more clients change to mobile accounts.

With more than $2 billion in international remittances sent to Haiti in 2014, mobile remittances linked to existing mobile accounts at financial institutions would support additional remittance to loan repayments, mortgage payments, and savings products that could allow cross-border transfers to be directed toward beneficial financial services for consumers who lack proof of creditworthiness or income. Increased cash flow into the mobile accounts would boost portfolio savings and create short-term revenue investment opportunities for the financial institution.

Minimize Branch Congestion with Branchless Banking

Branch congestion is a common problem for banks and credit unions, especially in densely populated urban areas. Banks and credit unions are seeking solutions that minimize the number of clients visiting branches to make small deposits and withdrawals. These small transactions are costly for the branch and create long lines that impede customer service. Therefore, one strong benefit identified by all financial institutions is developing branchless banking models. This could be accomplished through mobile accounts hosted by the financial institutions, with cash liquidity and transactional needs supported by branchless banking retail agents that can accept deposits or perform withdrawals on behalf of the service provider. Reducing the number of in-branch transactions would leave the remaining liquidity for higher-value transactions and free up branch employees to assist clients with services beyond deposits or withdrawals.

As part of longer-term strategies, institutions may look to expand their footprint on a national scale by investing in a one-time, upfront technology solution and then hiring more personnel in each region to facilitate customer support. Building branches throughout the country would be too costly, but creating small, branchless agent networks would enable greater profit and improve the likelihood of building strong trust in the communities served.

Refer to Step 4 for estimated upfront and operational costs of a branchless agent model and resource plan.

Formal Businesses Offer Cash-Out Services

Financial institutions must be strategic in engaging specific businesses with high cash liquidity (such as gas stations, hardware stores, grocery stores, or even the extremely popular street-side "lottos") as cash-out agents. Cash withdrawals are typically less risky than deposits, since the agent offering the cash takes the liability for disbursing the funds based on the consumer's account balance. Partnering with agents who distribute funds on behalf of the financial institution minimizes the business' security risk and cash transport obligation and benefits the banks by minimizing in-branch demand for cash withdrawals.

This would be an improvement over automated teller machine (ATM) cash-outs. For the few consumers with debit or credit cards, ATMs cannot serve the need of those who want to make very small withdrawals or withdrawals for an exact amount requiring small bills or coins. Haitian ATMs dispense only 1,000 HTG bills ($18), too high a value for the majority of the population. This makes investing in ATM expansion less viable than expanding an agent network.

In addition, people with debit cards and checks already seek cash-back from purchases with larger merchants. These types of natural behaviors can be included in the design of a mobile solution, allowing small-denomination cash-back transactions and withdrawals at formal businesses throughout Haiti. Similar to debit card cash-back transactions, consumers can request an amount higher than the purchase price and receive the difference in small bills, all within a single exchange with a merchant.

Merchant Accounts to Support Mobile Payments

In addition to strengthening cash-out points of service at formal businesses, financial institutions should focus on creating solutions for semi-formal and informal merchants. Regulated institutions can offer business or "small enterprise" accounts with the same KYC requirements as current mobile accounts, but with differing limits and velocities to support the high-volume and small payments and transactions common for these merchants. Many credit unions are located inside or near marketplaces where establishing these relationships with local merchants could be pivotal in building a well-rounded mobile financial ecosystem in a specific community.

Payroll Services

Indirectly, banks and credit unions can acquire more account holders and savings from employees of large corporations and formal businesses. Formal enterprises need electronic payroll into mobile accounts to minimize costs and automate the payroll processes. Financial institutions benefit from these partnerships when employers digitally pay employees into mobile wallets where the funds are stored as savings until spent. Establishing payroll solutions would increase the number of users trying mobile products and encourage consumers to use e-money for transactions. As users become more comfortable with their mobile accounts, more will leave funds in these accounts as savings, thereby improving the portfolios of the financial institutions.

Smartphone Applications for More Affluent Consumers

Banks typically target the middle to upper class, and have begun introducing online banking applications and websites. In a country where phones are more common than computers, the trend is toward mobile apps, but building a strong mobile ecosystem requires the inclusion of consumers from different economic classes. Smartphone applications are better able to mirror online banking services and can be more readily accessible for clients with smartphones. Creating competitive, self-service mobile application solutions will be especially important when e-governance regulations begin to support more service options, such as electronic authorization for transfers and mobile enrollments. Eventually, Haitians could benefit from recurring mobile bill pay, mobile check cashing, and other advanced account features such as insurance and loans, all of which have been effective in developed countries.

Build Credit and Transaction Database

Developing new solutions and mobile accounts integrated with core banking software enables a financial institution to better track the payment habits and behaviors of existing clients. Over time, data on cash-flow patterns can be used to assess a client's creditworthiness. Through integration, banks, credit unions and MFIs could share their data with the Central Bank, which might establish a centralized credit system, to be shared across all financial institutions. MFIs hope improved mobile platforms and reporting capabilities will allow them to meet Central Bank requirements to become regulated entities that can provide savings products. Integrated solutions will enable better transaction transparency within the MFI networks and across financial institutions. Mobile remittances and savings accounts could be used to determine the sources of funds used for loan repayments. Data on mobile merchant accounts with substantial transaction histories could be better assessed for business loans. And there are endless possibilities for how this electronic data could be leveraged to fight poverty and address financial inclusion.

APPENDIX C. BARRIERS TO MOBILE MONEY IMPLEMENTATION IN HAITI

Existing Services' Limited Success Has Left Financial Institutions Weary to Invest

The products on the market have not been wildly successful, causing many financial institutions to delay investments in mobile solutions. On average, opening a new branch for a financial institution will recoup the initial investment and begin to profit within three to five years. Mobile banking has been around five years, but current payment models do not promise a return on the investment. The upfront costs of technology development, human resources, and marketing costs can be daunting, especially if success cannot be guaranteed. Financial institutions want clear justifications of how and when their mobile investments will pay off.

Credit unions focus their investments on products and services that benefit their member base. Large investments in technology are less likely to be the priority of an individual credit union, and more likely to be identified and managed by Le Levier or Association Nationale des Caisses Populaires Haitiennes on the behalf of the credit unions. A regulated credit union could offer its own service, but only with an extreme financial burden in providing the upfront costs of technology development, IT support and maintenance, and marketing. For this reason, network models or joint-licensing integration models are better suited for Haiti's credit unions.

For MFIs, current solutions are too expensive. Any current investments are not on institution-owned products. The workload to support mobile disbursements in the MFI context is manual, and the cost is not justified with a return in revenue.

Regulations and Laws Need Improvement to Protect Banks and Consumers

Offering new services such as those highlighted in Appendix B (benefits) are risky without clearer guidelines from the Central Bank to better enforce electronic transactions and support real-time electronic currency settlement across institutions. Many institutions would prefer to delay investments in mobile solutions until the regulations and compliance guidelines can better serve these future products. There is already a perception that mobile money is less controlled. Lack of robust regulations and looser KYC requirements lessen banks' ability to feel confident in offering limits and transaction volumes that mirror regular checking and saving accounts.

In addition, not all banks agree with the anonymous mini-wallet model with more relaxed KYC requirements. Although mini-wallets are recognized as an important piece of providing financial inclusion to individuals without government IDs, some banks interviewed said they would feel more comfortable continuing to enforce a two-ID policy, despite the barriers this creates for many consumers and merchants.

Regulation concerns are a significant and well-founded major barrier to advancing mobile solutions. For more insight on the state of Haitian regulations as they apply to financial institutions and mobile banking, refer to Step 9.

Lasting Partnerships

Financial institutions are somewhat hesitant to adapt solutions with such a strong dependency on new partners. Any new partnership agreement can introduce a level of risk to the business and could (positively or negatively) affect consumers' trust in a financial institution's brand. Standard banking services do not depend heavily on second- or third-party partnerships to serve customers, but mobile solutions require the involvement of many different players, each with very specific and important responsibilities.

Banks are selective in their partnerships because many have spent decades building trust within the marketplace. They are not in a position to enter agreements casually with technology providers that do not have proven track records. Similarly, credit unions insinuated not wanting to risk the reputation of their institutions over the success of a single product.

MFIs are critical to addressing financial inclusion. The microfinance sector brings a great advantage to addressing needs of the under-served population. However, MFIs are not engaged as equal partners since they are unregulated. They have only become partners of mobile operators for existing technologies that do not address the operational inefficiencies created for the MFI branch. Technology partners need to develop operational integrations that serve the daily operations of the MFI offering a mobile-enabled product. Partnerships require trust and mission alignment. Financial institutions that invest for the long term want to be sure the partnerships and the technology providers offering the solution will remain committed to the project, the product, and the mission.

Infrastructure and IT Support Needed for Credit Unions

Credit unions' solutions tend to be less technologically advanced. Many have out-of-date banking software that cannot support integration with existing mobile money platforms. Investing in new core solutions is a large cost, but a shared solution could disperse the cost across a larger network, minimizing the cost for individual credit unions. Additional investment is needed to hire new personnel with specialized IT skills. A desire to bring credit unions into the modern era of banking technologies comes with an incredible financial burden and a learning curve for all employees.

Rapid scale might mean small credit unions with limited resources would not be able to monitor and control the program they are sponsoring. Credit unions typically prefer slow and steady growth; any large projections create worry within the organization. Rapid growth among credit unions would also require interconnected solutions for branches across the nation. Even in the Le Levier network, only a limited number of credit unions' systems are interconnected. Lack of transparency across all branches makes program management and settlement very difficult.

Credit unions in rural areas where mobile network operators and Internet providers have not invested as heavily in strong connections are at a disadvantage. There have been recent investments in fiber and dedicated Internet lines for many credit unions, but mostly in urban locations outside Port-au-Prince. Significant investment is still needed in the small, rural credit unions before a technology depending on strong mobile signal or Internet becomes a hard requirement. Integration with mobile platform providers depends on strong infrastructure.

For more information on what qualifies as sufficient ICT requirements for mobile platform and payment integration, see Step 3.

MFIs are Unregulated

Despite being the most willing and eager to invest in mobile technologies, MFIs are unable to do so, because they are not regulated to offer savings accounts. Any MFI wishing to offer a mobile account must partner with a regulated bank or credit union. Although mobile money platform integration with a MFI would benefit these organizations immensely, in terms of efficiency and transparency, they are prohibited by law. MFIs struggle to follow manual process and procedures to support their clients' loans payments via mobile wallets. The disbursement is made to the mobile account, but it is the digital repayment of the loans that necessitates the mobile solution. MFIs not already in partnerships are wary after hearing the experiences shared by other MFIs that have had little success with the mobile loan services in Haiti.

APPENDIX D. PARTICIPANTS FOR GSMA 2014 STATE OF THE INDUSTRY REPORT[15]

SUB-SAHARAN AFRICA

Benin	Moov (Etisalat) MTN
Botswana	FNB Orange
Burkina Faso	Airtel (Bharti Airtel)
Burundi	U-Com (Orascom)
Cameroon	Afrikpay MTN Orange
Chad	Airtel (Bharti Airtel) Tigo (Millicom)
Congo	MTN Airtel (Bharti Airtel)
Democratic Republic of the Congo	Tigo (Millicom) Airtel (Bharti Airtel) Vodacom
Côte d'Ivoire	Qash Services Orange Moov (Etisalat)
Ethiopia	MOSS ICT Consultancy
Gabon	Airtel (Bharti Airtel)
Ghana	Tigo (Millicom) Airtel (Bharti Airtel) MTN Afric Xpress
Guinea	MTN Orange (Sonatel)
Kenya	Changamka Airtel (Bharti Airtel) Commercial Bank of Africa M-Changa Safaricom Century Microfinance Bank
Lesotho	FNB
Liberia	Lonestar (MTN)
Madagascar	Airtel (Bharti Airtel) Orange
Malawi	TNM Airtel (Bharti Airtel)
Mali	Orange (Sonatel)
Mauritius	Emtel (Millicom)
Mozambique	Vodacom
Namibia	FNB
Niger	Airtel (Bharti Airtel)
Nigeria	MTN Teasy Mobile
Rwanda	MTN Tigo (Millicom) Airtel (Bharti Airtel)
Senegal	Tigo (Millicom) Orange (Sonatel) Société Générale
Sierra Leone	Airtel (Bharti Airtel)
Somalia	Telesom, Somaliland
South Africa	FNB Vodacom
Swaziland	FNB MTN
Tanzania	Tigo (Millicom) Vodacom Airtel (Bharti Airtel)
Togo	Moov (Etisalat)
Uganda	EzeeMoney MTN Airtel (Bharti Airtel)
Zambia	Zoona FNB Airtel (Bharti Airtel)
Zimbabwe	Telecel (Global Telecom) Econet Wireless

LATIN AMERICA & THE CARIBBEAN

Argentina	Sicom
Bolivia	Tigo (Millicom)
Brazil	Vivo (Telefónica) Oi
Colombia	DaviPlata BanColombia
Dominican Republic	Orange
El Salvador	Tigo (Millicom)
Guatemala	Tigo (Millicom)
Guyana	Guyana Telephone and Telegraph Company
Haiti	Digicel Haitipay
Honduras	Tigo (Millicom)
Mexico	eZuza Telcel (América Móvil)
Paraguay	Tigo (Millicom)

EAST ASIA & PACIFIC

Cambodia	WING
Indonesia	BTPN Indosat (Ooredoo) XL (Axiata)
Malaysia	Maxis
Papua New Guinea	Nationwide Microbank
Philippines	Smart (PLDT)
Solomon Islands	ANZ Bank
Thailand	AIS True Move (True Corporation)
Vietnam	M_Service

SOUTH ASIA

Afghanistan	Roshan (TDCA) Afghan Wireless (TCI)
Bangladesh	Robi (Axiata) bKash Trust Bank Bank Asia Grameenphone (Telenor) Dutch-Bangla Bank
India	Aircel (Maxis) Oxigen My Mobile Payments Vodafone Eko
Nepal	FonePay
Pakistan	Ufone (PTCL) Habib Bank Limited UBL Bank Telenor Mobilink (Global Telecom)
Sri Lanka	Mobitel (Sri Lanka Telecom) Dialog (Axiata)

MIDDLE EAST & NORTH AFRICA

Egypt	Vodafone
Iran	MCI (TCI)
Jordan	Zain
Qatar	Ooredoo
Tunisia	Ooredoo Viamobile

EUROPE & CENTRAL ASIA

Mongolia	MobiCom
Romania	Vodafone
Turkey	Turkcell

[15] For further details on each service, visit http://www.gsma.com/mobilefordevelopment/programmes/mobile-money-for-the-unbanked/insights/tracker.

APPENDIX E. ICT EVALUATION

Financial Institution Name: ___________________________________

Purpose: Evaluate the financial institution's ability to introduce mobile technology and identify areas to improve upon.

Question		Scoring Options	Argument	Comments	Score
NETWORK					
1	How many branches does the financial institution have?	1 branch (main) = 1 point 2-5 branches = 2 points 5-9 branches = 3 points 10+ branches = 5 points	As the number of branches increase the ability for the financial institution to reach a wider customer and potential customer audience increases. Their chances of success and profitability increase.		
2	Where is each branch physically located?	Single rural area = 1 points Single urban area = 2 points Single region/province = 3 points Two region coverage = 5 points National coverage, representation in 3 or more regions = 10 points	As the network coverage expands the ability to service and provide convenience and added value to customers increases.		
3	Do all branches of the financial institution have real time connectivity with the main branch?	None = 0 points Only main branch has connectivity = 5 points Some but not all = 10 points Yes = 20 points	If not all branches are connected in real-time to the main branch is it likely not all branches will be able to participate in the proposed technology project thus limiting the impact of financial inclusion and member outreach. Also, doing the work to connect each branch is time consuming and expensive, best to work with FIs that already have full connectivity.		
4	Does every branch with connectivity (see question 3) have a data connection speed (bandwidth) of 128k or more?	None = 0 points Some but not all = 10 points Yes, all 128k (.128 Mbps) or higher = 20 points	WOCCU experience has shown that 128k connections (or higher) are ideal for financial service transactions. Anything slower could but the network at risk of failed or timed out transactions.		

Question		Scoring Options	Argument	Comments	Score
5	Do all branches of the financial institution have access to the Internet? **Deliverable**: Perform an Internet speed test at each branch; provide results in final report.	No = 0 points All = 10 points	If one or more branches does not have access to the Internet the ability to bring in more sophisticated data communications is not likely. If all branches have Internet access then at a minimum some work can be done to bring them new technology projects.		
6	Does the financial institution employ the use of delivery mechanisms such as ATM, POS and Mobile Phones?	None = 0 points One or more = 20 points	The ability to have at least one delivery mechanism currently tied into the FI network is a positive sign that others could be added.		
7	Does the financial institution have a IT network diagram? **Deliverable**: Review a copy of the financial institution's network diagram. If the institution is not willing to share the diagram (which is actually a good sign that they are keeping sensitive information confidential), request a copy without the IP addresses or confidential information. Otherwise, produce your own by asking specific questions. Make sure the diagram displays data connection speeds (see Q4).	No = 0 points Yes, but not willing to provide a copy = 5 points Yes = 5 points	Having a current network diagram is a sign that the financial institution is taking its IT responsibilities seriously. It is one of the most basic documents they should have.		
HARDWARE					
8	Does the financial institution have a dedicated data center (computer room)?	No = 0 points Yes = 10 points	Lacking dedicated space for computer infrastructure creates a high level of risk for damage, theft, or being put out of service. It is also a sign that the financial institution is not serious about its IT responsibilities. A dedicated room is defined as a space, with a closed door, that is NOT a shared space with employees.		

Question		Scoring Options	Argument	Comments	Score
9	Does the financial institution's data center (computer room) have the following (see scoring options column): **Deliverable**: Take detailed pictures of the data center and all equipment. If possible take temperature reading of data center.	2 points per item if there is: • Controlled access to the data center (a locking mechanism of some sort) • Controlled access policy; they can provide a document outlining who has access to the room and when. • A universal power supply (UPS) that keeps the computer network running in case of a power failure. • Sufficient air conditioning systems (temperature should not exceed 76° Fahrenheit [24°C]) • Fire extinguisher close by • Mounted video camera • Intrusion detection/motion security system • Environment monitoring system that triggers alerts when temperature exceeds a certain level or smoke is detected • Data center is in a secure location in the building, away from most foot traffic (basement is ideal) • Data center is away from any water source (faucet, water lines)	All of these items exhibit a professionalism related to IT systems. The financial institution must understand that if systems are not protected the network is at risk and thus customer information and transaction integrity is at risk.		
10	Does the financial institution have a gas generator that could power the data center in the case of a serious electrical failure?	No = 0 points Yes = 5 points	This is not common, but if a financial institution has a generator it is a very good sign that IT system availability is taken very seriously.		

Question		Scoring Options	Argument	Comments	Score
11	Do the hardware infrastructure specifications currently meet the need for the technology project under consideration? **Deliverable**: take an inventory of all hardware in the data center including hardware characteristics/specifications.	No = 0 points Yes = 10 points	If the financial institution does not currently have the hardware necessary to facilitate the technology project then the cost of the project will increase which also creates a greater risk that the project will not happen.		
12	Does the software running on the core systems (see question 11) meet the minimum requirements for the technology project under consideration? **Deliverable**: Take an inventory of all software packages currently running on the critical systems in the data center (see question 11). This includes operating systems.	No = 0 points Yes = 10 points	If the financial institution does not currently have the software necessary to facilitate the proposed technology project then the cost of the project will increase which also creates a greater risk that the project will not happen.		
13	Are the software licenses currently used by the financial institutions legitimate?	No = 0 points (if any license is not authentic) Yes = 5 points	Piracy can be common in developing countries. It also is a sign that the IT budget may be restrictive or that management does not take technology projects seriously.		
14	Does the core banking system that financial institution uses have the ability to interface with third-party programs? **Deliverable**: Obtain as much information as possible on core banking system used by the financial institution. Including name of provider (if applicable) and any user manuals or other documentation available.	No = 0 points Yes = 10 points	This is a common feature and a very important one. If the core banking system does not have this flexibility the financial institution will likely not be able to quickly start a new technology project that has to do with processing transactions via a transactional switch.		

Question		Scoring Options	Argument	Comments	Score
IT DEPARTMENT					
15	Does the financial institution have dedicated IT staff and how is support provided to the branches (3 or more)? **Deliverable**: Obtain a current organizational chart of the IT department, identify roles and responsibilities of each employee. Consider how quickly branches can receive IT support. Obtain CVs if possible.	No = 0 points Yes = 10 points	Taking on a new technology project will take time from the existing IT staff. If they do not have at least three of more full time IT employees, it is likely the implementation of the project will be delayed due to their lack of availability.		
16	Does the financial institution <u>currently</u> have employee resources to focus on a new technology project if implemented? **Deliverable**: Obtain a list of current IT projects being supported or implemented at the financial institution. Be sure to identify who has responsibility for each project and what percent of their current time they dedicate to those projects. Be sure to also identify what stage each project is in.	No = 0 points Yes = 5 points	IT employees tend to promise the world, be sure to analyze in depth their current workloads and try to determine if the current staffing levels are sufficient based on current and future projects of the financial institution.		
17	Has the IT budget funding levels remained consistent or increased over the last three years? **Deliverable**: Obtain IT budget from the last three years, if possible obtain entire financials of the financial institution (in addition to budget).	No = 0 points Yes = 5 points	A proactive and forward-thinking financial institution will have matched or increased their technology budget from year to year. This is an excellent sign to determine whether a financial institution will be committed to a new technology project or not.		

Question		Scoring Options	Argument	Comments	Score
18	Does the IT department have documented policies and procedures related to areas of technology? **Deliverable**: Obtain all copies of documented technology related procedures.	2 points per item if they have policies on: - Computer and laptop usage - Electronic communication - Software development life cycle - Disaster recover (including data backup) - Business continuity - System security (including data center access and control; see Q9)	It is one thing to have policies, but another to actually have them documented. Having well defined documents shows the organization and professionalism of a financial institution, in particular an IT department that must follow said policies.		
	Final grade % recommendations			Total Points (Score)	0
	ATM (80% or higher)			Total Points Available	172
	Mobile phone banking (75% or higher)			Grade % (Points Scored/Total Points)	**0.00%**
	PDA (70% or higher)				
	POS (75% or higher)				
	Shared branching (80% or higher)				

APPENDIX F. CONSUMER SURVEY

Instructions to the Interviewer: Interviewer to introduce himself to the respondent. The questions should be read out exactly as given in the questionnaire. The interviewer should not modify the question as per his understanding, in case the respondent is not clear about the same. If the respondent is not clear about the question, the interviewer should repeat the question word by word. If the respondent is still not clear about the question, ask him to give response as per his understanding of the question.

To mark the answers, interviewer circles the code provided in the grid below every question.

- *Introduce self and the company you working for*
- *Please relax, are you comfortable?*
- *I am here to talk about your banking habits. I am doing this as a marketing survey for company wanting to do some new things in banking and we want to ask you about your banking habits.*

SAY: As I told you in the permission form, I am going to ask you some questions about your banking habits. This will help collect information about a new banking idea.

Most of these questions are personal since they are about you and how you handle your banking and finances. If you do not want to answer any question that is okay we will skip it. Please remember it is confidential.

Instructions to the Interviewer: Interviewer to note down the details in the grid given below

And record answers as following:

1
2

Respondent Details							
Respondent Number							Respondent Location
							City/Town:
							Commune:
							Department:
							Area : ☐ Rural ☐ Urban

Interview Details	
Date of the Interview:	Name of the Interviewer:
Start Time of the Interview:	Name of the Reviewer:
End Time of the Interview:	

Age:

under 18	1
18-35	2
35-50	3
50-65	4
66 or older	5

Gender

Female	1
Male	2

Q1. Have you ever heard of **Mobile money services**?

1	Yes	Go to question 2
2	No	**If no provide the following definition:** *Mobile Money is a way to complete a transaction (spending or receiving money) linked to an account, using your mobile phone, instead of cash.* *And then go to question 7*

Q2. Do you know which companies are currently using mobile money? Let them answer, if they don't know, go to question 3.

(select any they mention) (Multiple Coding Possible)

TchoTcho	1
Lajan Cash	2
Boom	3
Credit Union/LL	4
ACME	5
Mercy Corps	6
Ti Manman Cheri	7
Fonkoze	8
FINCA	9
Scotiabank	10
BNC	11
Don't know	12

Q3. What do you think are some benefits of using mobile money?

(Multiple Coding Possible)	
Cost saving (Lower rates, transaction fees)	1
Time saving (no need to go to bank or ATM)	2
24 h Access (can make transaction any time)	3
Physical security (no need to go out with cash)	4
Others (please specify)	5

Q4. Do you think mobile money services are safe? ☐ 1. Yes ☐ 2. No

If yes, Why? ____

If No, Why not? ____

Q5. Do you have a mobile money account? ☐ 1. Yes ☐ 2. No

Q5a. If yes which one?		**Q5b. If no, what is preventing you from using a mobile money service?**
Boom	1	
TchoTcho	2	
Lajan Cash	3	

Q6. Do you think Mobile Money was designed with your needs in mind? ☐ 1. Yes ☐ 2. No

Q6a. IF yes why?	**Q6b. IF no, what needs are not met?**

Q7. What best describes the mobile money services currently on the market?

It is a service made for the low-income population	1
It is a tool accessible mostly to the wealthy	2
It is a service made for youngsters	3
It is a service really accessible to all	4
It is a service made mostly for NGO workers and cash-for-work workers	5
It is a service made for factory workers	6
It is a service made for the population receiving Government benefits	7
It is a cool service that helps save time and money	8
Other:	9

Q8. Do you have an account at a financial institution such as a bank, credit union, micro-credit institution, etc.?

☐ 1. Yes ☐ 2. No (If yes, go to 8.4)

Q8.1 If no, why not? (select all that apply)

I don't trust them	1
There is not one close to me	2
I spend too much time to do a transaction	3
I don't feel comfortable/not accepted inside the branch	4
I prefer to have the money with me (manage the money myself)	5
They don't offer a service I would use	6
I don't feel safe visiting one	7
OTHER: (please specify)	8

Q8.2 If no account, where do you store your money?

Wallet	1
Mattress	2
Community savings VSLA Sol	3
Personal Safe	4
OTHER: (please specify)	5

Q8.3 If no account, do you use usury loans? ☐ 1. yes ☐ 2. No

Q8.3.1 If yes, why do you use this method over getting a loan with a financial institution?

Q8.4 If you have an account, why did you open it?

I needed somewhere to keep my money safe	1
I needed a loan/credit	2
I run a business	3
I wanted a checking account	4
I needed an account to receive my pay	5
I wanted a debit/credit card	6

Save me from myself-prevent me from spending my money all at once	7
I am saving my money	8

Q8.4.1. If saving…what are you saving for?

Q9. Where do you have your account?

List FIs (select any that apply)

Credit Union Name:_______________
MFI Name:_______________
Bank Name:_______________

Have you ever done a deposit Y/N
Have you ever done a withdrawal Y/N

Q10. Do you trust your money is safe in this account? ☐ 1. yes ☐ 2. No

Q11. How do you receive payment for your work?

Cash	1
Paper Check	2
Direct deposit	3
Money transfer	4
Mobile payroll	5
Nature (goods)	6
OTHER: (please specify)	7

Q12. How often are you paid?

End of day/shift	1
Every week	2
Twice a month	3
End of month	4
Paid upfront for work	5
End of day/shift	6

Q13. How do you currently pay your bills?

Pay using (method below) for →	Goods in a supermarket	Goods in a Public Market (Street)	Rent/ housing/mortgage	Electricity	Water	Fuel for cooking (Propane or	Phone	Transport Gasoline	School/ Education	Clothes/ Shoes	Loan payment
Cash	1	1	1	1	1	1	1	1	1	1	1
Remittance	2	2	2	2	2	2	2	2	2	2	2
Mobile Phone	3	3	3	3	3	3	3	3	3	3	3
Debit Card	4	4	4	4	4	4	4	4	4	4	4
Check	5	5	5	5	5	5	5	5	5	5	5
Bank Transfer	6	6	6	6	6	6	6	6	6	6	6

None or N/A	7	7	7	7	7	7	7	7	7	7	7

Q14. Which of the following transfer services do you use?

Q14. transfer services used in general		**Which transfer services you use for … (transaction origin/destination)**					
		Sending domestic		Receiving domestic		International transfers	
		Q14.1.a Send Domestic	Q14.1.b To where	Q14.2.a Receive Domestic	Q14.2.b From Where	Q14.3.a Send outside HT	Q14.3.b Receive Outside HT
Bank to bank transfer	1	1		1		1	1
Western Union	2	2		2		2	2
Money Gram	3	3		3		3	3
Unitransfer	4	4		4		4	4
CAM	5	5		5		5	5
Sogexpress	6	6		6		6	6
Ria	7	7		7		7	7
Other	8	8		8		8	8

Q15. What is the most important for you with money transfer?

Security/Privacy (I don't want people to know I received transfer)	1
Convenience (I want to get the money without leaving home)	2

Q16. What is the biggest problem you have with money transfer agencies?

They are too expensive	1
They always have liquidity problems	2
They always have signal problems	3
It is not safe to go get the money	4
Other:	5

Q17. What is their biggest advantage (rank most important to least important)?

They are everywhere	1
They always have liquidity	2
Other:	3

Q18. When you receive a money transfer, what do you do with it?

I spend all of it in a few days	1
I save some and spend some	2
Other:	3

Q19. If you could receive your transfer directly on an account and be able to save some of it, would you be interested? ☐ 1. Yes ☐ 2. No

Q20. Do you have other people physically send/transport money for you? ☐ 1. Yes ☐ 2. No
(If yes)

Q20a. Why?	Q20b. Where?
Q20c. Benefits of this method?	Q20d. Disadvantages of this method?

Q21. How likely are you to use a mobile money service for:

SINGLE RESPONSE PER ROW — READ OUT LIST OF SERVICES	How likely are you to use a mobile money service for:					
	Yes, Definitely	Yes, On occasion	Maybe, Maybe not	Probably not	No, no way	Don't Know /Refused /
Buy airtime	1	2	3	4	5	6
Buy goods at a shop	1	2	3	4	5	6
Buy goods at agro dealer	1	2	3	4	5	6
Buy goods at fuel station	1	2	3	4	5	6
Transfer money to another person	1	2	3	4	5	6
Receive money (e.g., from govt. or a relative)	1	2	3	4	5	6
Receive a salary	1	2	3	4	5	6
Deposit money into a mobile money	1	2	3	4	5	6
Withdraw money from that same account	1	2	3	4	5	6
Pay bills	1	2	3	4	5	6
Receive/Pay loans	1	2	3	4	5	6
Pay for school	1	2	3	4	5	6
Pay for rent	1	2	3	4	5	6
Save money	1	2	3	4	5	6

Q22. Are there other mobile money services not yet mentioned you think would benefit you?

Q23. Which places would you be willing to do mobile money cash-in/cash-out transaction?

CHOOSE ONE OF THE POSSIBLE OPTIONS- READ OUT THE OPTIONS	Which places would you be willing to do mobile money cash-in/cash-out transaction?			
	Yes	No	Maybe	Don't Know/Refused
Mobile Minute Top up Agent	1	2	3	4
A fuel/gas station	1	2	3	4
Local supermarket	1	2	3	4
Agent at the market	1	2	3	4
A Credit Union	1	2	3	4
A microfinance	1	2	3	4
A bank branch or other bank outlet	1	2	3	4

Convenience Store	1	2	3	4
Hardware Store	1	2	3	4

Q24. What are the top 3 ways you receive information about new products? (circle answers)

Word of Mouth- Friend/Family	1
Sound truck/microphone	2
Telephone call	3
TV adverts	4
Radio adverts	5
Print adverts	6
Billboards / outdoor adverts /out of home images/street banner	7
Community leaders (pastor, teacher, business owners, mayor, city council, senator, deputy)	8
Physical Mail/Haiti Messenger	9
text message	10
E-mail	11
At church	12
At school	13
At Work	14
Others (please specify)	15

APPENDIX G. MERCHANT SURVEY QUESTIONNAIRES

Informal Merchant Questionnaire

WARM-UP and INTRO

- Hi, thank you for agreeing to be interviewed.
- Introduce self. Share some personal things (children's ages, favorite sport, etc.).
- Please relax, are you comfortable?
- I am here to talk about what life is like as a shopkeeper/ business person/ trader/etc. I am doing this because there is a company wanting to do some new things around here and we want to ask you about it.

SAY: It is really easy, we are just going to ask some questions about you and your business and then talk to you about a new idea that might be coming and see what you think of it. Please remember it is confidential.

LOCATION	CODE	Urban	Rural
WEST	1	1	2
NORTH	2	1	2
NORTH WEST	3	1	2
NORTH EAST	4	1	2
ARTIBONITE	5	1	2
CENTER	6	1	2
SOUTH EAST	7	1	2
NIPPES	8	1	2
SOUTH	9	1	2

GENDER	
Male	4
Female	5

Merchant's name :		
Phone number:		
Address:		
Business Position: ☐ Owner	☐ Chef responsible	☐ Manager
Merchant Type		
SME (informal)	SME (formal)	Large Enterprise (formal)
☐ Resellers/Traders of Goods	☐ Importers/Exporters	☐ Government
☐ Food Producers/Farmers	☐ Professional Service Providers	☐ Factories
☐ Transportation	☐ Retail stores/Groceries/Hardware	☐ Other

A BANK ACCOUNT OWNERSHIP AND USAGE

Q1. Do you have an account at a Financial Institution such as a bank, credit union, micro-credit institution, etc.?

☐ 1. yes ☐ 2. No (If yes, go to 1.4)

Q1.1 If no, why not? (select all that apply)

I don't trust them	1
There is not one close to me	2
I spend too much time to do a transaction	3
I don't feel comfortable/not accepted inside the branch	4
I prefer to have the money with me (manage the money myself)	5
They don't offer a service I would use	6
I don't feel safe visiting one	7
OTHER: (please specify)	8

Q1.2 If no account, where do you store your money

Wallet	1
Mattress	2
Community savings VSLA Sol	3
Personal Safe	4
OTHER: (please specify)	5

Q1.3 If no account, do you use usury loans? ☐ 1. yes ☐ 2. No

Q1.3.1 If yes, why do you use this method over getting a loan with a financial institution?

IF NO, GO TO SECTION B

Q1.4 If you have an account, why did you open it?

I needed somewhere to keep my money safe	1
I needed a loan/credit	2
I run a business	3
I wanted a checking account	4
I needed an account to receive my pay	5
I wanted a debit/credit card	6
Save me from myself-prevent me from spending my money all at once	7
I am saving my money	8

Q1.4.1. If saving … what are you saving for?

Q2. Where do you have your account?

List FIs (select any that apply)
Credit Union (2) Name:_______________
MFI (3) Name:_______________
Bank (1) Name:_______________

Q2.1. Have you ever done a deposit ☐ 1. yes ☐ 2. No

Q2.2. Have you ever done a withdrawal ☐ 1. yes ☐ 2. No

Q3. Do you trust your money is safe in this account? ☐ 1. Yes ☐ 2. No

Q4.	How do you get to your financial institutions? LET INTERVIEWEE ANSWER UNPROMPTED, AND SELECT ANY BOXES THAT APPLY	1. Animal transport (e.g., horse, donkey, other) 2. Walk 3. Public transportation (tap tap, moto etc.) 4. Private vehicle (car, moto) 5. Other _______________
Q5.	How long does it take you to travel to the financial institution from your home/shop (one way only)?	Actual Answer__________ (categorize accordingly) 1. Don't know 2. Less then 5 min 3. Less then 15 min 4. Less than 30 min 5. Less than 1 hour 6. More than 1 hour
Q6.	How many times a week do you go to your financial institution?	1. 0-1 2. 1-2 3. 2-3 4. 3-4 5. 4-5 6. 5-6 7. 7 or more
Q7.	How convenient is it for you to visit your branch?	1. Very convenient 2. Sometimes convenient 3. Not great, not bad 4. Mostly inconvenient 5. Very inconvenient
Q8.	How would you rate your in-branch experience?	1. Excellent 2. Good 3. Average 4. Not good 5. Very bad 6. Don't know

B MOBILE PHONE OWNERSHIP AND USAGE

Q9.	What is your willingness to try new technology?	1. Very willing 2. Somewhat willing 3. Not willing
Q10.	What type of mobile phone do you have?	1. Don't have a phone Write phone model here: 2. Feature 3. Smartphone 4. Blackberry 5. Android 6. iPhone
Q11.	Does your phone allow you to connect to the Internet?	☐ 1. yes ☐ 2. No ;
Q12	What type of phone plan do you currently use?	☐ 1. Prepaid ☐ 2. Postpaid
Q13.	In the last year how often did you change your SIM card or phone number?	1. Never 2. Maybe once a year 3. Twice a year 4. Every few months 5. Once a month

C BUSINESS DESCRIPTION

Q14.	What is your main business?	Write in:
Q15.	How many years have you operated your current business?	Write in years:
Q16.	How many days per week is your business open?	Circle 1 2 3 4 5 6 7
Q17.	How many hours per day?	Write in total hours
Q18.	Do you sell anything to other businesses or wholesale anything as a distributer to other businesses?	1. Yes 2. No IF YES, Please describe
Q19.	What do you find are the benefits for you in having a formal licensed/regulated business?	• Don't want to answer • Not a regulated business • List benefits

D STAFF

Q20.	Do you have any employees or other persons working for your business?	1. Yes 2. No IF YES COMPLETE SECTION IF NO PROCEED TO NEXT SECTION	
Q21.	How many employees do you have altogether?	1. Number of family working here ______ 2. Number of other employees ______	TOTAL
Q22.	Where are your employees living in relationship to your business location(s)?	1. Proximity to the workplace 2. Within the same Commune 3. Within the same City 4. Within the same Locality 5. Within the same region 6. Outside this region	

END OF FILTERING

Now I would like to ask you about your regular costs in running the business.

(Here the currency is denoted as HTG)

F COSTS

		Local Currency	Circle One – PER WEEK / PER MONTH
1.	How much rent do you pay for your premises?	HTG	1. Per week 2. Per month 3. "DK/refused to answer
2.	How much are your electricity costs?	HTG	1. Per week 2. Per month 3. "DK/refused to answer
3.	How much are your water costs (if any)?	HTG	1. Per week 2. Per month 3. "DK/refused to answer
4.	How much are your gas costs (if any)?	HTG	1. Per week 2. Per month 3. "DK/refused to answer
5.	How much is your wages costs (if any)?	HTG	1. Per week 2. Per month 3. "DK/refused to answer
6.	How much is your transportation costs?	HTG	1. Per week 2. Per month 3. "DK/refused to answer
7.	How much did you pay for your business license	HTG	3. "DK/refused to answer
8.	What percentage of your revenue must you pay in taxes?	_____%	3. "DK/refused to answer
9.	Do you have any other reoccurring operational costs?	HTG	▢ 1. yes ▢ 2. No ;
10.	If yes, please provide more details?		List items
11.	If yes, what do you estimate is the total cost for these regular expenditures?	HTG	1. Per week 2. Per month 3. "DK/refused to answer

G LOANS

1.	Do you currently have a loan or have you ever had a loan? IF NO, GO TO QUESTION 6	1. Yes 2. No
2.	If yes, with a person or an institution?	1. Person 2. Institution
3.	If an institution, which one?	(USE FI LOCATION CARD)
4.	What is the hardest part of managing a loan?	List
5.	How often do you make the loan payments?	______time(s) per week ______time(s) per month
6.	Do you ever loan money to your customers? Or offer items on credit?	1. Yes 2. No
7.	Do you have issues with non-payment for goods and services sold to clients?	1. Yes 2. No
8.	If yes, how major would you say the problem is?	1. Minor 2. Average 3. Major

H SOURCE OF GOODS

1.	How often do you buy goods or inventory	____day ____week ____month ____quarter
2.	Where do you go to purchase your goods? LET ANSWER, PROMPT IF NEEDED: • Depot • Other markets • Farmers • Friends • Other	Write in answer
3.	What methods of payment do you use to buy your goods?	Select all that apply 1. Cash 2. Check 3. Account to account wire transfer 4. Debit Card 5. Credit Card 6. Cash remittance
4.	Do you have purchase arrangements with wholesalers?	1. Yes 2. No
5.	If yes, do you ever receive credit from the wholesaler?	1. Yes 2. No
6.	If yes to 4, do any of your wholesalers deliver to you?	1. Yes 2. No
7.	What is the most difficult part of procuring goods? LET ANSWER PROMPT IF NEEDED: 1. Transportation of goods 2. Inventory management 3. Seasonal availability	Write in answer

I SALES

1.	How many customers do you serve in a day, on average?		
2.	Do you plan how much change you need on hand in order to serve customers at the beginning of your workday?		1. Yes 2. No
3.	Do you feel like you make enough money during the day that you need to make a deposit at a financial institution? ☐ 1. Yes ☐ 2. No	If yes, Why If no, Why	
4.	Do you feel safe during the day with the amount of money you carry?		1. Yes 2. No

5.	Do you feel safe going home with the amount of money you have on hand?	1. Yes 2. No
6.	Have you ever been robbed while conducting business activities? For example, while going to work, going to a financial institution, going home, buying goods?	1. Yes 2. No
7.	Who do you sell your goods/service to? (multiple answers) LET INTERVIEWEE RESPOND UNPROMPTED; if no answer given, provide prompts • Community members • Servants, guardian (other people's homes) • Construction workers • Street workers • Gov. employees • NGOs • Companies • Students	
8.	Do you have any other sources of income?	1. Yes 2. No
9.	If yes, what?	
10.	Do you know the value of the inventory you keep on hand? ☐ Don't know / refused *Kombyen kob machandiz ou kwe ou geyen la?* MOVED FROM K. LOANS	HTG
11.	What forms of payment do you accepts? 1. Cash, 2. exchange of goods, 3. check, 4. Cash remittance	
12.	Do you accept multiple currencies? ☐ 1. yes ☐ 2. No	
	If yes, which ones?	
13.	Are there any periods of time, where your business transactions are larger or smaller? In other words, are there regular times when business slow or heavy?	Write in:
14.	Is business generally getting stronger, getting weaker or staying steady?	1. Stronger 2. Weaker 3. Steady
15.	Do you have the capability of giving a receipt to your customers?	1. Yes 2. No
16.	If yes, how? (paper, text, …)	

17.	How do you track your daily transactions?	1. I don't track 2. I use a paper ledger 3. I just count the money 4. I track the receipts 5. I count the inventory 6. Other …

A little while ago, we have talked about the mobile money services. We would like to know: How do you see this service could be applicable to your business?

Interview continues …

J MOBILE MONEY SERVICE AWARENESS

1. What are the top 3 ways you would like to receive information about mobile money services?

   SHOW CARD (circle answers)

Word of mouth-friend/family	1
Sound truck/microphone	2
Telephone call	3
TV adverts	4
Radio adverts	5
Print adverts	6
Billboards / outdoor adverts/out of home images/street banner	7
Community leaders (pastor, teacher, business owners, mayor, city council, senator, deputy)	8
Physical mail/Haiti Messager	9
Text message	10
E-mail	11
At church	12
At school	13
At work	14
Others (please specify)	15

K INTEREST IN USING MOBILE MONEY IN YOUR BUSINESS/TRANSACTION

	QUESTIONS	SME in F 1. Resellers/traders of goods (PAP/Rural small town)	SME in F 2. Food Producers/Farmers	SME in F 3. Transportation
1.	How appealing do you think mobile money services is for consumers as a method to make and receive payments?	READ OUT 1. Very appealing 2. Appealing 3. Not appealing	READ OUT 1. Very appealing 2. Appealing 3. Not appealing	READ OUT 1. Very appealing 2. Appealing 3. Not appealing
2.	What would you say are the benefits of it? What do you like about the idea/ service?			
3.	What would you say are the biggest problems with the mobile money service? The things you dislike about it?	• .... • .... • .... •	• .... • .... • .... •	• .... • .... • .... • ....
4.	Do you think having mobile account for your business would be better than having to exchange cash?	☐ 1. yes ☐ 2. No if yes, why? If no, why?	☐ 1. yes ☐ 2. No if yes, why? If no, why?	☐ 1. yes ☐ 2. No if yes, why? If no, why?
5.	Would you be willing to use mobile money to accept payments from your customers?	READ OUT 1. Very interested 2. Interested 3. Not interested	READ OUT 1. Very interested 2. Interested 3. Not interested	READ OUT 1. Very interested 2. Interested 3. Not interested
6.	Imagine if your customers paid you using mobile money and then you could use that money to repay loans directly from that phone without going to a physical branch at a financial institution. Would that interest you?	☐ 1. yes ☐ 2. No	☐ 1. yes ☐ 2. No	☐ 1. yes ☐ 2. No

	QUESTIONS	SME in F 1. Resellers/traders of goods (PAP/Rural small town)		SME in F 2. Food Producers/Farmers		SME in F 3. Transportation	
7.	If you had money in your mobile money account, would you be interested to be able to pay your wholesaler with a mobile transfer if they accept that type of transaction?	READ OUT 1. Very interested 2. Interested 3. Not interested		READ OUT 1. Very interested 2. Interested 3. Not interested		READ OUT 1. Very interested 2. Interested 3. Not interested	
8.	If you could check all your transaction activities anytime on your phone, would this be helpful to your business?	☐ 1. yes ☐ 2. No If yes, Why?		☐ 1. yes ☐ 2. No If yes, Why?		☐ 1. yes ☐ 2. No If yes, Why?	
9.	What if you could directly receive your net crop proceeds via mobile instead of visiting distributor-would this save you costs/time?			1. Yes 2. No IF YES Please explain			
10.	In general, Which institution would you trust the most for mobile money service?	1. Financial institution 2. Telephone operator 3. Other		1. Financial institution 2. Telephone operator 3. Other		1. Financial institution 2. Telephone operator 3. Other	
11.	If given the opportunity would you prefer to have a business license and be a formal/recognized business?	☐ 1. yes ☐ 2. No		☐ 1. yes ☐ 2. No		☐ 1. yes ☐ 2. No	
12.	If opening a mobile money account requires you to have a driver's license/NIF/CIN/passport, would that prevent you from being able to register?	☐ 1. yes ☐ 2. No		☐ 1. yes ☐ 2. No		☐ 1. yes ☐ 2. No	

	QUESTIONS	SME in F 1. Resellers/traders of goods (PAP/Rural small town)	SME in F 2. Food Producers/Farmers	SME in F 3. Transportation
13.	Which would you prefer, a mobile account that does not require an ID but limits your activity to 10 transactions or 4000 HTG **(OPT. 1)** **or** A mobile account that requires an ID, but does not limit the amount or number of your transactions (show card) **(OPT. 2)**	☐ 1. Option1 ☐ 2. Option2	☐ 1. Option1 ☐ 2. Option2	☐ 1. Option1 ☐ 2. Option2
14.	After our discussion, would you be interested in having a person call you for more information about mobile money, if yes (get their tel. number			

Thank you very much for your time today.

END FORMAL INTERVIEW – BEGIN FINAL SECTION L INFORMALLY. <u>Interviewer can improvise according to situation.</u>

L EDUCATION

1	*You are very smart, and I'm very impressed by your business.* May I ask what level of education you have?	1. No formal education 2. Primary school 3. Middle high school (10 or 11 years) 4. High school (12 or 13 years) 5. Technical or trade school 6. Some university 7. University degree 8. Post-graduate *9. Refused*

Date: ___________________________ Interviewer Name: ___________________________

Formal Merchant Questionnaire

WARM-UP and INTRO

- Hi, thank you for agreeing to be interviewed.
- Introduce self. Share some personal things (children's ages, favorite sport, etc.).
- Please relax, are you comfortable?
- I am here to talk about what life is like as a shopkeeper/ business person/ trader/etc. I am doing this because there is a company wanting to do some new things around here and we want to ask you about it.

SAY: It is really easy, we are just going to ask some questions about you and your business and then talk to you about a new idea that might be coming and see what you think of it. Please remember it is confidential.

LOCATION	CODE	Urban	Rural
WEST	1	1	2
NORTH	2	1	2
NORTH WEST	3	1	2
NORTH EAST	4	1	2
ARTIBONITE	5	1	2
CENTER	6	1	2
SOUTH EAST	7	1	2
NIPPES	8	1	2
SOUTH	9	1	2

GENDER	
Male	4
Female	5

Merchant's name :		
Phone number :		
Address :		
Business Position : ☐ Owner	☐ Chef responsible	☐ Manager
Merchant Type		
SME (informal)	SME (formal)	Large Enterprise (formal)
☐ Resellers/traders of goods	☐ Importers/Exporters	☐ Government
☐ Food Producers /Farmers	☐ Professional Service Providers	☐ Factories
☐ Transportation	☐ Retail stores/Groceries/Hardware	☐ Other

A BANK ACCOUNT OWNERSHIP AND USAGE

Q1. Do you have an account at a Financial Institution such as a bank, credit union, micro-credit institution, etc.?

☐ 1. yes ☐ 2. No (If yes, go to 1.4)

Q1.1 If no, why not? (select all that apply)

I don't trust them	1
There is not one close to me	2
I spend too much time to do a transaction	3
I don't feel comfortable/not accepted inside the branch	4
I prefer to have the money with me (manage the money myself)	5
They don't offer a service I would use	6
I don't feel safe visiting one	7
OTHER: (please specify)	8

Q1.2 If no account, where do you store your money?

Wallet	1
Mattress	2
Community savings VSLA Sol	3
Personal Safe	4
OTHER: (please specify)	5

Q1.3 If no account, do you use usury loans? ☐ 1. yes ☐ 2. No

Q1.3.1 If yes, why do you use this method over getting a loan with a financial institution?

IF NO, PLEASE GO TO SECTION B

Q1.4 If you have an account, why did you open it?

I needed somewhere to keep my money safe	1
I needed a loan/credit	2
I run a business	3
I wanted a checking account	4
I needed an account to receive my pay	5
I wanted a debit/credit card	6
Save me from myself-prevent me from spending my money all at once	7
I am saving my money	8

Q1.4.1. If saving…what are you saving for?

Q2. Where do you have your account?

List FIs (select any that apply)
Credit Union (2) Name:______________
MFI (3) Name:______________
Bank (1) Name:______________

Q2.1. Have you ever done a deposit ☐ 1. yes ☐ 2. No

Q2.2. Have you ever done a withdrawal ☐ 1. yes ☐ 2. No

Q3. Do you trust your money is safe in this account? ☐ 1. Yes ☐ 2. No

Q4.	How do you get to your financial institutions? LET INTERVIEWEE ANSWER UNPROMPTED, AND SELECT ANY BOXES THAT APPLY	1. Animal transport (e.g., horse, donkey, other) 2. Walk 3. Public transportation (tap tap, moto etc.) 4. Private vehicle (car, moto) 5. Other _______________
Q5.	How long does it take you to travel to the financial institution from your home/shop (one way only)?	Actual Answer__________ (categorize accordingly) 1. Don't know 2. Less then 5 min 3. Less then 15 min 4. Less than 30 min 5. Less than 1 hour 6. More than 1 hour
Q6.	How many times a week do you go to your financial institution?	1. 0-1 2. 1-2 3. 2-3 4. 3-4 5. 4-5 6. 5-6 7. 7 or more
Q7.	How convenient is it for you to visit your branch?	1. Very convenient 2. Sometimes convenient 3. Not great, not bad 4. Mostly inconvenient 5. Very inconvenient
Q8.	How would you rate your in-branch experience?	1. Excellent 2. Good 3. Average 4. Not good 5. Very bad 6. Don't know

B MOBILE PHONE OWNERSHIP AND USAGE

Q9.	What is your willingness to try new technology?	1. Very willing 2. Somewhat willing 3. Not willing
Q10.	What type of mobile phone do you have?	1. Don't have a phone Write phone model here: 2. Feature 3. Smartphone 4. Blackberry 5. Android 6. iPhone
Q11.	Does your phone allow you to connect to the Internet?	☐ 1. yes ☐ 2. No ;
Q12	What type of phone plan do you currently use?	☐ 1. Prepaid ☐ 2. Postpaid
Q13.	In the last year how often did you change your SIM card or phone number?	1. Never 2. Maybe once a year 3. Twice a year 4. Every few months 5. Once a month

C BUSINESS DESCRIPTION

Q14.	What is your main business?	Write in:
Q15.	How many years have you operated your current business?	Write in years:
Q16.	How many days per week is your business open?	Circle 1 2 3 4 5 6 7
Q17.	How many hours per day?	Write in total hours
Q18.	Do you sell anything to other businesses or wholesale anything as a distributer to other businesses?	1. Yes 2. No IF YES, Please describe
Q19.	What do you find are the benefits for you in having a formal licensed/regulated business?	• Don't want to answer • Not a regulated business • List benefits

D STAFF

Q20.	Do you have any employees or other persons working for your business?	3. Yes 4. No IF YES COMPLETE SECTION IF NO PROCEED TO NEXT SECTION	
Q21.	How many employees do you have altogether?	1. Number of family working here ______ 2. Number of other employees ______	TOTAL
Q22.	Where are your employees living in relationship to your business location(s)?	7. Proximity to the workplace 8. Within the same Commune 9. Within the same City 10. Within the same Locality 11. Within the same region 12. Outside this region	

END OF FILTERING

Now I would like to ask you about your regular costs in running the business.

(Here the currency is denoted as HTG)

F COSTS

		Local Currency	**Circle One – PER WEEK / PER MONTH**
1.	How much rent do you pay for your premises?	HTG	1. Per week 2. Per month 3. "DK/refused to answer
2.	How much are your electricity costs?	HTG	1. Per week 2. Per month 3. "DK/refused to answer
3.	How much are your water costs (if any)?	HTG	1. Per week 2. Per month 3. "DK/refused to answer
4.	How much are your gas costs (if any)?	HTG	1. Per week 2. Per month 3. "DK/refused to answer
5.	How much is your wages costs (if any)?	HTG	1. Per week 2. Per month 3. "DK/refused to answer
6.	How much is your transportation costs?	HTG	1. Per week 2. Per month 3. "DK/refused to answer
7.	How much did you pay for your business license?	HTG	3. "DK/refused to answer
8.	What percentage of your revenue must you pay in taxes?	______%	3. "DK/refused to answer
9.	Do you have any other reoccurring operational costs?	HTG	☐ 1. yes ☐ 2. No ;
10.	If yes, please provide more details?		List items
11.	If yes, what do you estimate is the total cost for these regular expenditures?	HTG	1. Per week 2. Per month 3. "DK/refused to answer

G LOANS

1.	Do you currently have a loan or have you ever had a loan? IF NO, GO TO QUESTION 6	1. Yes 2. No
2.	If yes, with a person or an institution?	1. Person 2. Institution
3.	If an institution, which one?	(USE FI LOCATION CARD)
4.	What is the hardest part of managing a loan?	List
5.	How often do you make the loan payments?	______time(s) per week ______time(s) per month
6.	Do you ever loan money to your customers? Or offer items on credit?	1. Yes 2. No
7.	Do you have issues with non-payment for goods and services sold to clients?	1. Yes 2. No
8.	If yes, how major would you say the problem is?	4. Minor 5. Average 6. Major

H SOURCE OF GOODS

1.	How often do you buy goods or inventory?	____day ____week ____month ____quarter
2.	Where do you go to purchase your goods? LET ANSWER, PROMPT IF NEEDED: 1. Depot 2. Other markets 3. Other business 4. Farmers 5. Friends 6. Wholesaler 7. Other country 8. Other	Write in answer
3.	What methods of payment do you use to buy your goods?	Select all that apply 1. Cash 2. Check 3. Account to account wire transfer 4. Debit Card 5. Credit Card 6. Cash remittance

4.	In addition to TCA do you pay any other tax when purchasing goods for retail?	1. No 2. Yes Which ones ________________
5.	Do you have purchase arrangements with wholesalers?	1. Yes 2. No
6.	If yes above, do you ever receive credit from the wholesaler?	1. Yes 2. No IF NO GO TO QUESTION 8
7.	IF YES TO 5, do any of your wholesalers deliver to you?	1. Yes 2. No
8.	What is the most difficult part of procuring goods? LET ANSWER, PROMPT IF NEEDED: 1. Transportation of goods 2. Inventory management 3. Seasonal availability	Write in answer

I SALES

1.	How many customers do you serve in a day, on average?	
2.	Do you plan how much change you need on hand in order to serve customers at the beginning of your workday?	1. Yes __________HTG 2. No 3. Don't want to answer
3.	Do you generate enough income each day that you must make daily deposits at your financial institution?	1. Yes 2. No
4.	Do you feel safe during the day with the amount of money you have at your location?	1. Yes 2. No
5.	Do you take the money home each night, or is the cash left securely at your location?	1. At location 2. Take home 3. Don't want to respond
6.	If you must transport it home, do you feel safe going home with the amount of money you have on hand?	1. Yes 2. No
7.	Have you ever been robbed while conducting business activities? For example, while going to work, going to a financial institution, going home, buying goods.	1. Yes 2. No
8.	Does your business have any of the following security measures? Select all that apply	1. Safe for the money 2. Security guard 3. Security cameras 4. Other 5. Do not want to respond

9.	Who do you sell your goods/service to? (multiple answers) LET INTERVIEWEE RESPOND UNPROMPTED; if no answer given, provide prompts • Community members • Servants, guardian (other people's homes) • Construction workers • Street workers • Gov. employees • NGOs • Companies • Students	
10.	Do you have any other sources of income?	1. Yes 2. No
11.	If yes, what?	
12.	Do you know the value of the inventory you keep on hand? ☐ Don't know / refused	HTG
13.	What forms of payment do you accept?	1. Cash 2. Exchange of goods 3. Check, 4. Debit card 5. Credit card 6. Mobile payments 7. Bank transfer 8. Cash remittance
14.	Do you accept multiple currencies? ☐ 1. Yes ☐ 2. No	
	If yes, which ones?	List
15.	Are there any periods of time, where your business transactions are larger or smaller? In other words, are there regular times when business slow or heavy?	Write in:
16.	Is business generally getting stronger, getting weaker or staying steady?	1. Stronger 2. Weaker 3. Steady
17.	Do you have the capability of giving a receipt to your customers?	1. Yes 2. No
18.	If yes, how? (paper, text, …)	Write answer ________________________
19.	How do you track your daily transactions?	1. I don't track 2. I use a paper ledger 3. I just count the money 4. I count the inventory 5. I track the receipts 6. I use an electronic POS system 7. Other ______________________.

20.	In addition to TCA are your customers charged any additional tax(es)?	1. No 2. Yes If Yes, what ________________

A little while ago, we have talked about the mobile money services. We would like to discuss how these types of services could be applicable to your business.

Interview continues …

J MOBILE MONEY SERVICE AWARENESS

1. What are the top 3 ways you would like to receive information about mobile money services?

   SHOW CARD (circle answers)

Word of mouth-friend/family	1
Sound truck/microphone	2
Telephone call	3
TV adverts	4
Radio adverts	5
Print adverts	6
Billboards / outdoor adverts/out of home images/street banner	7
Community leaders (pastor, teacher, business owners, mayor, city council, senator, deputy)	8
Physical mail/Haiti Messager	9
Text message	10
E-mail	11
At church	12
At school	13
At work	14
Others (please specify)	15

K INTEREST IN USING MOBILE MONEY IN YOUR BUSINESS/TRANSACTION

	QUESTIONS	SME in F 1. Resellers/traders of goods (PAP/Rural small town)	SME in F 2. Food Producers/Farmers	SME in F 3. Transportation
1.	How appealing do you think mobile money services are for consumers as a method to make payments?	READ OUT 1. Very appealing 2. Appealing 3. Not appealing	READ OUT 1. Very appealing 2. Appealing 3. Not appealing	READ OUT 1. Very appealing 2. Appealing 3. Not appealing
2.	What would you say are the benefits of it? What do you like about the idea/service?	• ……………………………… • ……………………………… • ………………………………	• ……………………………… • ……………………………… • ………………………………	• ……………………………… • ……………………………… • ………………………………
3.	What would you say are the biggest problems with the mobile money service? The things you dislike about it?	• ……………………………… • ……………………………… • ………………………………	• ……………………………… • ……………………………… • ………………………………	• ……………………………… • ……………………………… • ………………………………
4.	Would you be willing to use mobile money to accept payments from your customers?	READ OUT 1. Very interested 2. Interested 3. Not interested	READ OUT 1. Very interested 2. Interested 3. Not interested	READ OUT 1. Very interested 2. Interested 3. Not interested
5.	Do you think you might have a wider range of customers if you could accept mobile payments	☐ 1. yes ☐ 2. No	☐ 1. yes ☐ 2. No	☐ 1. yes ☐ 2. No
6.	Do you think having mobile account for your business would be better than having to exchange cash?	READ OUT 1. Definitely 2. Most of the time 3. Sometimes 4. On occasion 5. Never	READ OUT 1. Definitely 2. Most of the time 3. Sometimes 4. On occasion 5. Never	READ OUT 1. Definitely 2. Most of the time 3. Sometimes 4. On occasion 5. Never

<table>
<tr><th></th><th>QUESTIONS</th><th colspan="2">SME in F 1. Resellers/traders of goods (PAP/Rural small town)</th><th colspan="2">SME in F 2. Food Producers/Farmers</th><th colspan="2">SME in F 3. Transportation</th></tr>
<tr><td>7.</td><td>Imagine if your customers paid you using mobile money. And then you could use that money to repay loans directly from your phone without going in to a physical branch or financial institution.

Would that interest you?</td><td colspan="2">1. Yes
2. No</td><td colspan="2">1. Yes
2. No</td><td colspan="2">1. Yes
2. No</td></tr>
<tr><td>8.</td><td>If you had money in your mobile money account, how interested would you be able to pay your wholesaler with a mobile transfer if they accept that type of transaction?</td><td>READ OUT
1. Very interested
2. Interested
3. Not interested</td><td>IF NOT INTERESTED, ASK NEXT QUESTION THEN GO TO THE NEXT SECTION</td><td>READ OUT
1. Very interested
2. Interested
3. Not interested</td><td>IF NOT INTERESTED, ASK NEXT QUESTION THEN GO TO THE NEXT SECTION</td><td>READ OUT
1. Very interested
2. Interested
3. Not interested</td><td>IF NOT INTERESTED, ASK NEXT QUESTION THEN GO TO THE NEXT SECTION</td></tr>
<tr><td>9.</td><td>If you could check all your transaction activities anytime on your phone, would this be helpful to your business?</td><td colspan="2">☐ 1. yes ☐ 2. No

If yes, Why?</td><td colspan="2">☐ 1. yes ☐ 2. No

If yes, Why?</td><td colspan="2">☐ 1. yes ☐ 2. No

If yes, Why?</td></tr>
<tr><td>10.</td><td>What if you could directly receive your net crop proceeds via mobile instead of visiting distributor-would this save you costs/time?</td><td colspan="2"></td><td colspan="2">1. Yes
2. No
IF YES Please explain</td><td colspan="2"></td></tr>
<tr><td>11.</td><td>In general, which institution would you trust the most for mobile money service?</td><td colspan="2">1. Financial institution
2. Telephone operator
3. Other</td><td colspan="2">1. Financial institution
2. Telephone operator
3. Other</td><td colspan="2">1. Financial institution
2. Telephone operator
3. Other</td></tr>
<tr><td>12.</td><td>If opening a mobile money account requires you to have a driver's license/NIF/CIN/ passport, would that prevent you from wanting to register?</td><td colspan="2">☐ 1. yes ☐ 2. No</td><td colspan="2">☐ 1. yes ☐ 2. No</td><td colspan="2">☐ 1. yes ☐ 2. No</td></tr>
<tr><td>13.</td><td>Do you have issues with non-payment for goods and services sold to clients?</td><td colspan="2">1. Minor
2. Average
3. Major</td><td colspan="2">1. Minor
2. Average
3. Major</td><td colspan="2">1. Minor
2. Average
3. Major</td></tr>
</table>

	QUESTIONS	SME in F 1. Resellers/traders of goods (PAP/Rural small town)	SME in F 2. Food Producers/Farmers	SME in F 3. Transportation
14.	Do you feel like you have an excess of extra cash on hand at the end of the day?	☐ 1. yes ☐ 2. No	☐ 1. yes ☐ 2. No	☐ 1. yes ☐ 2. No
15.	If yes, would you act as a cash out agent dispersing withdrawals to clients at your stores if: • This would minimize the amount of liquidity you would have to store • Reduce the frequency large deposit taken to the bank, and • allow you to be reimbursed for disbursements via electronic transfer to financial institution where business account. Is this something that interests you?			
16.	Do you feel like you have difficulty keeping enough liquidity on hand each day?	☐ 1. yes ☐ 2. No	☐ 1. yes ☐ 2. No	☐ 1. yes ☐ 2. No
17.	If yes, as before, would you be interested in accepting deposits on behalf of mobile money providers assuming they provided the proper training and technology to do so?	☐ 1. yes ☐ 2. No	☐ 1. yes ☐ 2. No	☐ 1. yes ☐ 2. No
18.	After our discussion, would you be interested in having a person call you for more information about mobile money, if yes (get their tel. number			

Thank you very much for your time today.

END FORMAL INTERVIEW – BEGIN FINAL SECTION L INFORMALLY. Interviewer can improvise according to situation.

L EDUCATION

1	*You are very smart, and I am very impressed by your business.* May I ask what level of education you have?	1. No formal education 2. Primary school 3. Middle high school (10 or 11 years) 4. High school (12 or 13 years) 5. Technical or trade school 6. Some university 7. University degree 8. Post-graduate *9. Refused*

Date: ___________________________ Interviewer Name: ___________________________

APPENDIX H. FINDINGS FROM THE HMMI MERCHANT SURVEY

A copy of the full survey report, with additional response data and findings, is available at link.

Key Merchant Survey Findings

Mobile Penetration Among Merchants Is High

Of the 526 interviewees that responded, 169 (32 percent) have smartphones, 347 (66 percent) have a simple feature phone. Only 10 (2 percent) reported not owning a phone. Mobile penetration is strong among merchants who depend on their mobile device to stay connected with clients and wholesalers.

Financial Inclusion Is Higher among Merchants than the General Population

An impressive 60 percent of respondents had an account at a bank, credit union, or MFI. Not surprising, formal merchants were more likely to have an account (79 percent of formal merchants, versus 54 percent of informal merchants). Of the 40 percent of all merchants that did not have an account, the predominant reason was an unspecific "I don't really know." However, some had specific reasons: 15 percent preferred to keep their money on their person, another 10 percent responded they did not trust financial institutions, and 7 percent felt that transactions took too long. Only a very small number of respondents reported lack of a valid government ID, feeling unsafe, or believing the in-branch experience was bad.

For financial institutions, this indicates that there is a potential base of merchant customers that could be targeted for mobile accounts. Merchants claimed to be in convenient proximity to a financial institution, and in general expressed a desire to benefit from mobile accounts for business purposes. For merchants without accounts at financial institutions, almost all reported having at least one government ID, which is required to open a mobile account. However, financial institutions require a second ID; they would need to conduct additional research to determine whether the second ID and KYC compliance are a significant barrier to entry for these merchants. Furthermore, some informal merchants may wish to remain anonymous and may be fearful that having an account could result in the government demanding more taxes.

Merchants Want Mobile Loans

Approximately 30 percent of merchants reported currently having or having had a loan. Of these, 19 percent took their loans from individuals and 79 percent borrowed from a formal institution. Not surprisingly, formal business owners almost exclusively took loans from formal institutions. Thus, mobile loan solutions would be especially suited for formal businesses looking to grow or expand their business.

Sixty-six percent of respondents issue lines of credit. Peer-to-peer lending is a great market opportunity when combined with a mobile account specifically designed for merchants and their clients. The technology would enable better recordkeeping of formal or informal personal loans and help establish data patterns for strong lenders and payers, without risk to the financial institution.

It should be noted that merchants were asked if they would want the convenience of *mobile loan repayment*, rather than whether they would want a mobile loan, since the incentive for a loan overshadows the method for how the loan is received or repaid. The respondents like the idea of receiving client payments in a mobile account and transferring those profits to their financial institution to repay a loan without ever having to visit a branch.

Perceived Benefits of Mobile Accounts

Despite the limited use of mobile accounts offered by providers at present, merchants indicated areas in which mobile accounts could help them improve their business operations. These are promising results, indicating that merchants would switch to mobile solutions if presented with the right product, offered by the right institution.

- 80 percent of formal merchants and 74 percent of informal merchants are interested or very interested in receiving mobile payments from customers.
- 78 percent of informal merchants and 83 percent of formal merchants could be interested in a service that allowed them to accept mobile payments from customers and pay back loans via their mobile devices without visiting a branch of their financial institution.
- 76 percent of formal merchants believe accepting mobile payments would make their businesses appealing or accessible to a wider range of customers.
- 80 percent of informal merchants and 88 percent of formal merchants would be interested or very interested in a solution that allowed them to pay wholesalers with a mobile transfer (vs. cash transactions).
- 78 percent of informal merchants and 84 percent of formal merchants believe that the ability to view their activities on their phones would be helpful in running their businesses. Specifically, it would help them facilitate their work, better control their finances, provide better visibility into their businesses, provide better security for their funds, and help them create saving strategies. Formal merchants believe activity data would also help them with their time management.
- Food producers and farmers stated that receiving net crop proceeds via mobile phones instead of visiting distributors would save time and costs.
- 26 percent of formal merchants worry about having excess cash on hand at the end of the day. Of those merchants, 85 percent would be interested or very interested in becoming cash-out agents.
- 79 percent of formal merchants struggle to have enough cash on hand and thus regularly visit their local financial institution to make withdrawals; they would be interested in accepting deposits on behalf of mobile money providers.
- 75 percent of informal merchants and 79 percent of formal merchants expressed interest in having someone contact them for more information on mobile money (457 merchants provide their mobile numbers).

These initial findings suggest that formal and informal merchants are potential early adopters of mobile financial technologies.

Operational Challenges for Merchant Enterprises

A key focus of the research was to identify challenges, or "pain points," to business growth that could be addressed by mobile technologies. Understanding merchants' pain points can help drive the design of demand-driven use cases for mobile products.

- *Electronic Receipts and Transaction Monitoring:* Merchants would benefit from having a way to provide digital transaction receipts. Merchants, banks, and the Central Bank would benefit from a digital method of monitoring merchant transactions.

- *Accessibility to Money via New Financial Services:* Merchants want accounts that are more accessible. They appreciate the benefit of securely storing funds overnight in a mobile account, as well as saving money or receiving loans in a mobile wallet. The disadvantage is they do not yet have the freedom to access cash when they need it.

- *Ability to Support Multiple Currencies:* A mobile account offers flexibility in ways cash does not. Merchants that handle and accept multiple currencies can benefit from digital dual-currency accounts and automated foreign exchange for cash-in, cash-out, or payments.

- *The Need to Make Change:* A mobile account can provide exact payments, eliminating the need to distribute change to customers and limiting the amount of cash merchants need to carry.

- *Employee Payroll:* Large formal merchants are looking for more efficient ways to pay their employees. Checks and direct deposit are a burden for financial institutions due to the need to service so many employees in the days immediately after they are paid. Mobile payments are more versatile and offer employees immediate methods of using and spending the hard-earned money.

The importance of developing merchant products is critical to improved consumer use cases and revenue opportunities. Understanding what drives a merchant to want a mobile solution will help determine what will keep them a satisfied and active user. Motivated merchants will make for happy consumers, and the ecosystem will grow. Solving current merchants' operational pain points through mobile account solutions would be a win-win scenario.

APPENDIX I. SAMPLE USE CASES FOR MOBILE BANKING PRODUCTS

Use Case 1: Consumer Registration

Accounts can be opened using a mobile device, via a call center agent, by a merchant agent using an agent interface, or in a branch, using a financial institution interface.

The account holder must provide [insert KYC requirement] to open an account:

- Name
- Address
- Mobile phone number
- Date of birth
- One government-issued ID

The mobile phone number is authenticated.

The person is authenticated: electronically, via signature, or eyes-on-ID validation.

The account is approved by the mobile platform and a confirmation message is sent to the consumer.

Use Case 2: Merchant Registration

Accounts can be opened using a mobile device, via a call center agent, by merchant agent using an agent interface, or in branch, using financial institution interface.

The account holder must provide [insert KYC requirement] to open an account:

- Merchant name
- Store address
- Mobile phone number
- Business phone
- Business information

The merchant is authenticated: electronically, via signature, or through eyes-on-ID validation.

Use Case 3: Mobile Loan Disbursement

This case assumes integration between the MFI and the credit union.

Registration device → Data sent to account processor → Data retrieved on MFI computer, loan approved → Account processor triggers alert notifications and processes transfers upon request

The loan applicant registers for a mobile account with the mobile loan office.

The account is opened; the applicant is recognized as small informal merchant and applies for business loan.

The mobile loan officer submits a loan request with account holder data, via a mobile device, to home branch.

Data are sent and processed electronically and retrievable by an MFI agent for review.

The MFI agent approves the loans; mobile agent and account holder are notified by SMS.

The MFI transfers funds to a master account with the sponsoring credit union.

The MFI uses a system interface to schedule an automated loan disbursement to/from a master account at the credit union account holder's account.

The account holder receives an SMS alert when funds have been credited to the account.

The account holder uses the mobile account balance to buy items for the business from merchants accepting mobile payments.

Use Case 4: Mobile Loan Repayment

The loan applicant receives small-volume purchases for goods via the mobile account.

The mobile loan officer receives notifications by SMS or smartphone application about which loan payments are due seven days before payment is due and the day payment is due, allowing the officer and the MFI to better manage potential delinquency in loan repayment.

When the loan payment is due, the applicant uses a mobile device to send a payment to a specified account.

The MFI receives an email alert and can view payments made within the MFI system due to the integration.

Funds are stored in the specified credit union account, which the MFI can now manage.