

Mobile Money Services - Design and Development for Financial Inclusion

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1. Introduction

Mobile money services are being deployed rapidly across emerging markets as a key tool to further the goal of financial inclusion. Financial inclusion, the development of novel methods to enable individuals at the base of the pyramid to access formal financial services and become part of the formal financial system, is considered a key pre-requisite for lifting these populations out of poverty and for driving economic growth.

There have been some notable successes, such as Vodafone / Safaricom's M-Pesa in Kenya. Within five years of its launch, M-Pesa had 15 million customers, equivalent to 37.5% of the country's population, and was processing \$10 billion annually. However, the success of mobile money services more broadly has been limited – in its 2012 Mobile Money Adoption Survey of mobile money services in emerging markets targeting the unbanked, GSMA identified only 14 “sprinters,” or those services which were scaling rapidly, out of the 150 total such services. Even replicating successful services in additional geographies has proven challenging, including efforts by Vodafone to take the M-Pesa model to other countries in which it operates, such as South Africa. In addition, mobile money operators do not seem to have, a-priori, a good sense for which factors will determine the ultimate success of a deployment. Yet, the pace of new deployments is only accelerating, and given these past results and the apparent challenge in learning from them, it is likely that many new deployments will also prove less than successful.

Therefore, in this research, we analyzed an array of mobile money deployments from across the emerging markets to attempt to understand which characteristics are critical for the success of a mobile money service, particularly at launch. Our research covered five successful mobile money deployments – Telesom ZAAD in Somaliland, Dialog eZ Cash in Sri Lanka, Econet EcoCash in Zimbabwe, SMART Communications SMART Money in the Philippines, and Globe Telecom GCASH in the Philippines – and five less successful deployments – Vodacom M-Pesa in South Africa, MTN m-money in Uganda, Eko Financial Services in India, and the broader situations in Nigeria and Brazil.

We performed our analysis by reviewing existing primary research on these deployments, in order to understand how they were developed, structured, and implemented, and how those factors impacted their eventual success, or lack thereof. We then used our conclusions to develop a preliminary framework to help prospective mobile money operators with the design and development of a de-novo system. This framework lays out what we believe to be the key decisions mobile operators must make, and our perspectives on which paths will lead to the highest chance of success. [Note that our sources came primarily from the time period of 2011 to 2013 when detailed research on these services was done, so our conclusions are drawn from their state at those points in time. Although they might have evolved since, to the best of our knowledge any such changes don't impact the conclusions we reached, and we've added updates where significant structural changes have occurred.]

We found that many aspects of a mobile money service can likely be generalized and replicated from country to country, and don't need to be re-invented for each deployment, but also that there are important components which should be customized to fit the local context.

Section Two explains the structure of a typical emerging-markets mobile money service focused on financial inclusion; Section Three presents our view of those competencies we believe mobile money operators must develop to be successful; and Section Four presents our preliminary design and development framework – our view of the key decisions mobile money operators must make in attempting to build these competencies, the major alternatives they have for each decision, our perspective on which of those options presents the highest chance of success, and supporting examples from the research we reviewed.

2. Structure of a Typical Mobile Money Service

The mobile money services we analyzed have many similarities in the approach taken to service delivery. In this section, we will cover the standard structure of these mobile money services, in order to provide context for the rest of the paper. This descriptions below are not intended to comprehensively encompass all existing mobile money services, but to be broadly representative of all those we have seen, and to the best of our knowledge, broadly representative of the majority of existing services.

Owner / Operator: Mobile money services are typically owned and operated by either a Mobile Network Operator (MNO) or a financial institution (typically a bank). Each type of organization has its pros and cons, which we will discuss in more detail in Section 4. MNOs have the benefit of owning the cellular network, providing and having access to consumers' mobile phones, and frequently have a physical presence in the relevant communities, but typically do not have experience in developing or distributing financial services, nor the regulatory ability to do so. In turn, banks have the benefit of already offering similar services to the banked population, but must partner with an MNO to access consumers' phones, and must often develop new business models to succeed in lower income populations. In general, the question of which type of company deploys mobile money services is decided by regulators – in those countries in which MNOs are allowed to deploy their own mobile money services, they have tended to be the first movers, whereas in countries where they are prevented from doing so, banks have tended to be the first movers.

Bank Account Operator: Money flowing through a mobile money service must typically be held in a regulated account of some sort. In many situations, even when the service is operated by a non-bank, a regulated bank is used as a back-end provider to actually hold customer funds as a custodian. These funds typically cannot be intermediated by the bank or the mobile money operator, and are also remote from the bankruptcy of the mobile money operator; however, the applicability of deposit insurance protections varies from country to country. In addition, any interest accruing on such funds typically can't be passed through to account holders (although Tanzania recently became the first country to allow such an arrangement).

Services Offered: Mobile money services typically offer a subset of the following services – Peer to Peer money transfers (P2P), remittances (domestic and / or international), bill payment / receipt, salary disbursement / receipt, retail payments, and money storage / savings. Of these, P2P tends to be the most common offering. In addition, services offer methods for turning physical cash into electronic funds in a customer's mobile account (also called "cash-in") and methods for turning electronic funds into physical cash (also called "cash-out").

Service Delivery Method: Mobile money services are typically delivered in one of two ways – either directly through a customer's mobile phone or Over-the-Counter (OTC). Services delivered directly through a customer's phone require the customer to put cash into their mobile account (i.e.

convert it into electronic form), which they can then use to make payments or transfers directly through their phone. Services delivered OTC require the customer to physically visit a representative of the mobile money operator, where the customer provides cash for transactions to the representative, who then uses his / her own mobile phone and mobile money account to effect the transaction and takes the cash. Many services offer customers both options.

Distribution Network: Mobile money operators typically leverage an “Agent Network” to distribute their services to customers. Agents are typically either a) retail locations directly owned by the Operator, b) existing merchants, generally small independent stores or sometimes chains, which have been signed up by the Operator, or c) a mix of both. To reach scale, however, most mobile money services must eventually leverage outside merchants. In many cases, there is a hierarchy of agents, with larger agents having responsibility for managing a pool of smaller agents. Agents are typically located in close proximity to the customers they will serve, and provide services including account registration, cash-in / cash-out, and OTC transactions, in addition to potentially helping market the service and educate customers. Thus, agents are the primary way in which customers interact with the system.

Customers Served: Mobile money operators typically require at least one party in a transaction to be a customer of the service (i.e. they must have an account with the operator), however services differ in whether they require both parties to be customers (e.g. whether a customer can send a P2P transfer to a non-customer).

Fee Structure: There are many different fee structures employed by mobile money services, however they are typically all a) transaction-based (i.e. fees charged on a per-transaction basis), and b) involve fees charged to consumers. Transactions can include both transfers to others (e.g. P2P transfers), or cash-in / cash-out. Services typically set fees in order to encourage different behaviors they believe will be beneficial to their service – i.e. charging higher fees for cash-out vs. cash-in, to encourage customers to put money into the system, or charging higher fees to individuals who are not registered users, to encourage them to become customers.

3. Key Competencies of a Successful Mobile Money Service

In this section, we will describe several key competencies which the mobile money services we analyzed needed to develop in order to succeed. We divide these key competencies into two categories – those which we believe mobile money operators (or their parent companies) can build, and those which we believe are much harder to develop if they don't already exist within the parent company. However, we make no particular recommendation here as to which entity in a mobile money ecosystem must develop the competency – and in fact there are multiple possibilities – the broader point being that each competency must exist somewhere within the system.

Competencies Which Can Be Developed

Building An Effective Working Relationship With Regulators: Regulatory oversight, or the lack thereof, is an important aspect of any mobile money service, as frequently there are no pre-existing regulations which directly address mobile money services. [Note that there can be multiple regulators involved in the regulation of mobile money, the most common being financial and telecommunications regulators. For the remainder of this paper, however, we will use “regulator” to mean financial regulators, as they typically have primary oversight responsibility for mobile money services.]

Why is this critical? Any company which wants to operate a mobile money service will need to build a relationship with the relevant regulators in order to ensure that it can operate a mobile money service without breaking any existing laws, and that regulations which are subsequently developed actually facilitate, vs. hinder, the development of mobile money services. This is particularly important in situations where the mobile money operator is a non-bank, as these organizations typically don't have pre-existing relationships with financial regulators. Regulators also have a bias to keep any new financial transactions within institutions over which they have oversight, so, left to their own devices, will often favor systems in which banks play a key role as they are the primary covered institutions in every country.

Building Trust in Service: Trust in a mobile money service refers to a) trust in the brand itself, as one with which customers will be comfortable entrusting their funds, b) trust that the service's technology (e.g. mobile network connectivity) will function as promised, c) trust that Agents will do what they are supposed to with customer funds and transactions, and d) trust that individual transactions will be fulfilled as expected.

Why is this critical? Customer trust is a critical pre-requisite as a) mobile money services, and financial services more broadly, are new to the customer segments being served, and the idea of moving from holding physical funds to electronic is a significant behavioral shift, b) in many of the markets in question, there are frequent scam operators who purport to offer various financial services but ultimately abscond with customers' funds, creating a general mistrust in these types of financial offerings, c) mobile money services require handing funds to individuals not personally known to

customers (e.g. Agents), and d) even small disruptions in a customer's financial life from problems with the service can have significant ripple effects due to the lack of savings / financial cushion in these populations (for example, significant medical incidents can often require more funds than individuals have saved, and, if they can't be obtained from friends / relatives via a P2P transfer, predatory money lenders might need to be used). In addition, trust, once lost, is very difficult to rebuild.

Safekeeping of Customer Funds: Safekeeping of customer funds refers to ensuring that funds which customers put into the system are stored such that they are not vulnerable to theft, to being used as funding for the mobile money operator or for third party lending (and therefore vulnerable to being lost if that company goes bankrupt or has other internal problems), or to the corporate failure of any entity involved in the mobile money service.

Why is this critical? This is critical because of a) the challenges relating to customer trust noted above and b) the fact that in many emerging markets, a system similar to the FDIC does not exist, or if it does, it often does not cover mobile money accounts, particularly if the service is not operated by a regulated financial institution.

Facilitating Cash-In / Cash-Out: Facilitating cash-in / cash-out refers to the ability of customers to easily put funds into a mobile money service (i.e. convert their physical cash into electronic funds) and to withdraw funds from the service (i.e. convert their electronic funds into physical cash), at a location and at a time convenient to them.

Why is this critical? These are essential components of a mobile money service, much more so than might be expected, because a) only a small percentage of customers use their accounts as savings vehicles, and b) much of the economy in which customers exist is still a cash economy, requiring them to have physical access to funds to transact. In addition, research has shown that usage of mobile money services drops if there are not cash-in / cash-out locations in close physical proximity to customers, and if agents are not accessible at times when customers are free to visit them.

Liquidity Management: Liquidity Management refers to ensuring that the entities (e.g. agents) responsible for handling cash-in / cash-out have adequate physical cash and electronic funds ("e-float") to facilitate the customer transactions they need to perform. In a typical mobile money system, agents purchase e-float from the mobile money operator by delivering physical cash to the operator. Then, when customers wish to cash-in, they give the agent physical cash, and the agent in turn transfers a corresponding amount of e-float from their account to the customer's account. When a customer wishes to cash-out, the sequence happens in reverse.

Why is this critical? In general, procuring and sending physical funds to rebalance cash and e-float accounts is not trivial, as agents are often not in physical proximity to whichever central office of the mobile money service (or other entity) handles these transactions. Liquidity management therefore requires the ability to project, to some degree, the level and type of activity over the period of time between which agents can send and receive physical funds. If there is a mismatch, the agent's ability to

perform either a cash-in or a cash-out is effectively curtailed, halting the service at that location and causing a significant problem for customers.

Mitigating Fraud: Fraud can refer to fraud by agents (e.g. taking cash-in or money meant for OTC transactions, but remitting it to their own personal account) or by merchants (e.g. overcharging for transactions or not delivering services promised).

Why is this critical? Aside from the direct loss to those customers affected, it's also part of building and maintaining trust among the broader customer base. Fraud plays directly into the pre-existing mistrust of financial services noted earlier, and because incidents of fraud have been significant issues in many mobile money deployments. Thus, even a limited number of incidents of fraud can have a ripple effect on impacting customers' trust in the service and their willingness to use it.

Ensuring Adequate Agent Economics: Agent economics refers to the profits which agents can generate from their mobile money business.

Why is this critical? Ensuring that agents have adequate economics is critical as they are generally running an existing business (e.g. a retail store), and might also have other agent-like businesses (e.g. airtime top-up), so if they don't see compelling enough economics from the mobile money business they might either de-emphasize it in their day-to-day operations, or discontinue it altogether. Ensuring adequate economics is not trivial as a) agents must take on significant working capital requirements, in the physical cash and e-float required to be held for transactions, and b) it can take time for customer numbers and transaction volumes to scale, resulting in Agents needing to make meaningful investments of capital, time, and resources before profits can be realized since agents are typically paid on a per-transaction basis.

Scaling an Agent Network Sustainably: Scaling an agent network refers to both the rate at which new agents are added to the network and where those agents are located. The issue of sustainability arises because there can be tension between scaling the agent network more rapidly and more moderate growth. In addition, agent attrition rates can be relatively high initially, as early cohorts of agents often won't have a good sense ex-ante for whether the business will be a good fit for them or how to succeed at the business, and as it takes time for the economics to ramp (as described above). This means a different approach to growing the network might be needed in the early days, which will then need to be modified over time as attrition normalizes.

Why is this critical? This tension must be dynamically and proactively monitored on an ongoing basis to be sure the right balance is being maintained. Rapid scaling can benefit customers as it results in a higher likelihood of there being a location in close physical proximity and better customer service due to fewer customers being serviced per location, but can reduce the economics to individual agents and reduce their interest in the business. More moderate growth can benefit agents as it can result in better agent economics due to more customer transactions flowing through each location and lower

operator costs from having to find and onboard less agents, but can result in a worse customer experience, negatively impacting their interest in using the service and the feedback they give to others.

Effective Customer Support: Customer Support refers to the options available to help customers with questions about the service, problems with transactions, or other concerns. This could include interaction via phone, SMS, or in-person (such as visiting an agent or operator retail location). Effective support is support that is a) available whenever a customer has a problem, b) accessible from wherever a customer might be at that moment, and c) resolves the problem in a reasonable amount of time.

Why is this critical? As both formal and electronic financial services are often very new to mobile money customers, they will typically have a large number of questions and / or problems as they get used to the service. Problems relating to financial transactions are also of the highest concern to consumers, particularly for those who are cash-constrained, so any delays in resolving even a small problem can cause a customer to stop using the service and / or create negative word-of-mouth sentiment. Simply being able to speak with a representative can give customers confidence that their issue is being handled, and can go a long way in building goodwill for the service as a whole. This level of customer support is not always the norm for companies / industries serving these customer segments, so it's important to take a different approach for mobile money services.

Ecosystem Alignment: The system structure refers the way in which partnerships are established / structured, and the competitive landscape that is established.

Why is this critical? This is critical as mobile money services inevitably involve an ecosystem approach, and unless the ecosystem is developed in a way that works for all parties involved, it will have trouble growing.

Competencies Which Are Harder to Build

The ability to derive ancillary benefits from a mobile money business: Mobile money services can take time to scale up, and since revenues typically track transaction volumes, direct revenues can take time to become material. Therefore, organizations which can benefit from indirect revenues (e.g. reduced churn for MNOs) can more easily support such operations while the market is being developed.

Physical infrastructure / distribution network in close proximity to the target customer market: As noted earlier, physical access to customers is an important aspect of building a mobile money service, and building this infrastructure from scratch, in advance of uncertain revenues, can be a very risky and expensive proposition. Thus, entities which already have retail points and / or existing distribution agents in the target markets can more easily, and with less risk, deploy such a service. Although ultimately, as described earlier, most mobile money services will need to develop an agent network, the management of such an agent network can be greatly facilitated by having company owned stores in close proximity.

A reliable mobile network: A reliable mobile network is a critical component of a mobile payment service, as customers have much less patience for transmission problems when they impact financial transactions. Therefore, access to a reliable network, either an organization's own or a partner's is critical, particularly as reliability among mobile networks in emerging markets can vary considerably.

4. Key Decisions Facing Mobile Money Operators & Regulators

In this section, we will describe the decisions that the mobile money operators and regulators we analyzed had to make which we believe are most critical to achieving the competencies laid out in the prior section. In addition, we provide the main options available to operators and regulators, our perspective on which options we feel lead to the highest probability of success, and specific examples of services where different paths were followed.

Regulatory Structure

The regulatory structure refers to the regulatory regime established by government regulators and / or central banks for mobile money services. This is key as it establishes a) the type of entities which can own & operate a mobile money service, b) the type of entities which can provide various related services, such as cash-in / cash-out, c) the connection required, if any, to the existing banking system, d) how KYC / AML rules must be implemented, and e) the degree to which there is legal certainty about what mobile money operators can and can't do. These characteristics impact which existing assets of different entities can be brought to bear, the rate at which a service can scale, and the frictions that might be introduced at each point in the deployment.

Main Alternatives

- **Overall Framework – *The overall regulatory structure which defines the boundaries within which mobile money operators must operate.***
 - No specific regulations – Regulators adopt no new regulations specific to mobile money services, and mobile money operators must find a way to operate such systems within the existing regimes.
 - Proscriptive approach – Regulators adopt specific regulations about how, and by whom, mobile money services can be operated in advance of any actual deployments.
 - Test-and-learn approach – Regulators create an initial regulatory framework allowing mobile money operators to experiment, while waiting to create more specific regulations until they can observe live service deployments.

- **Allowed Mobile Money Operators – *The types of entities which are allowed to build and operate a mobile money service.***
 - Banks only – Only banks / financial institutions are allowed to operate a mobile money service.
 - Banks and non-banks – In addition to banks, other non-financial institutions are also allowed to operate a mobile money services, typically if they meet certain requirements specified by regulators. In general, the non-financial institutions in question are MNOs.

- **Allowed Types of Mobile Money Agents – *The types of entities which are allowed to act as consumer-facing agents of a mobile money operator and / or perform certain key functions.***
 - Bank-affiliated only – Mobile money agents must have a formal affiliation with a regulated bank. Even in situations where a mobile money service is operated by a non-bank, regulators might require agents to be bank-affiliated in order to handle certain functions, such as customer registration or cash-in / cash-out .

- Bank-affiliated and non-bank affiliated – Mobile money agents don't need to be affiliated with a regulated bank, and can therefore be any retail merchant the operator chooses to contract with.
- **KYC / AML Implementation – *The regulatory structure which governs the process mobile money operators must go through to register customers, in order to comply with Know-Your-Customer and Anti-Money-Laundering rules.***
 - Standard / Non-Proportional – Every customer is required to provide the same amount of information to register, regardless of riskiness, account characteristics, etc. This approach typically means customers must provide the same type of information they would to open a full bank account.
 - Proportional – Information required for registration is scaled as riskiness of the account grows (e.g. as maximum transaction or balance amounts grow).
 - In-Person – Every customer must appear in-person to physical register for an account, typically standard for registering for a full bank account.
 - Remote – Customers are allowed to register from their mobile phone, without visiting a physical location. This can also be used in conjunction with proportional registration, e.g. such that below a certain level of riskiness customers can register on their phone, however above that level they must appear in person.

Our Perspective

A test and learn approach is most effective. A test and learn approach implies that instead of taking a proscriptive approach to regulation development, regulators establish guidelines within which mobile money operators can experiment with different business models, service delivery models, etc. Once they observe how the market actually evolves – how the services are used, and what methods prove most effective – more specific regulations can be developed. Since mobile money operators are developing new product offerings serving new types of customers, it is very hard to know in advance what form will prove most effective. Regulation which attempts to determine this in advance doesn't have the benefit of being based on data, and is therefore unlikely to be exactly right. In addition, this type of regulation often has the effect of stifling important innovation, since mobile money operators are forced to work within whatever system regulators develop.

Legal certainty is important. Legal certainty is the idea that regulators provide mobile money operators with the confidence that the services they build will not run afoul of existing rules or regulations. Most countries do not already have specific regulations covering mobile money services, and such services generally fall outside of the banking & payments systems contemplated by existing regulations. Without such certainty, it can be risky and / or confusing for mobile money operators to attempt to deploy services. Legal certainty, however, does not require that a full regulatory structure be established, and can be created in concert with a test and learn approach to regulation development. This can be done, for example, through the establishment of guiderails or a “sandbox” that establish

bounds within which mobile money operators are free to experiment, or through the local equivalent of “no-action” letters, which certify that regulators won’t take action against mobile money operators for the development of specific services that are in a regulatory grey area.

Non-banks should be allowed to operate mobile money services. It is not clear that banks are necessarily the ideal entities to launch the first mobile money services in a country, in spite of typically being the only entities already allowed to perform banking /payments transactions under existing regulatory regimes. The reasons for this include difficulty servicing base of the pyramid customers profitably, a lack of physical locations in the relevant areas of the country, lack of ownership over mobile assets / infrastructure, and a business model (e.g. credit, lending, & savings) which requires significant customer funds to remain in the system. Thus, regulators should open the market to other types of entities so that the most naturally aligned companies can emerge.

Non-bank affiliated agents should be allowed to perform customer registrations and cash-in / cash-out. Requiring bank affiliation for agents introduces a significant dependency in situations where a non-bank would be the operator of a mobile money service, and can significantly reduce the interest of non-banks in deploying such services even where legally allowed, or the efficacy with which they can do. In addition, it’s not clear that such affiliation enhances the safety of the system as the agents themselves are typically the same types of merchant establishments whether bank affiliated or not, customer funds don’t remain with the agents as a custodian, and, if necessary rules can be created for the onboarding of non-bank affiliated agents to match the strictures placed on bank-affiliated agents.

Proportional Know Your Customer / Anti-Money Laundering (KYC / AML) rules should be used, and remote registration should be allowed. Customers in any country who register for banking or payments services must typically go through a KYC / AML process to prevent bad actors from making use of these services. However, the typical registration process for a bank account can be fairly onerous and time-consuming, and requires customers to appear in person at a branch before receiving an account. This process can be a significant barrier to getting prospective mobile money customers to register, as there might not be physical locations nearby, consumers often don’t know how much value they’ll get from the service ex-ante, and therefore whether it’s worth the effort, and because consumers might not have the required forms of identification (particularly since many countries do not have country-wide ID cards). It’s also inconsistent with the actual risk of small dollar transactions. So, allowing for proportional rules and remote registration, i.e. having a low initial registration burden for small value transactions which then scales with volume, size, and type of transaction, can both reduce customer friction to registration and therefore enable faster growth, and scale the operational burden with the actual underlying risk.

A key consideration in developing such regulations is the relevant guidance provided by The Financial Action Task Force (FATF), an inter-governmental body which focuses on mitigating potential threats to the international financial system. Countries are rated by the FATF on their broad adherence to FATF guidance across their financial systems, including mobile money, with those scoring low subject to adverse actions from member nations. Therefore, country regulators typically use FATF guidance as a

framework on which to develop their internal financial regulations. The FATF has issued guidance allowing for a risk-based (i.e. proportional) approach to mobile money, whose specifics therefore serve as an important starting point for development of KYC / AML regulations.

Mobile Money Operators should proactively engage with regulators, and, if possible, align their service with regulators' financial inclusion goals. Given the importance of the points above, it is important for prospective mobile money operators to engage with regulators early, to try to ensure that regulations are developed in a way that is conducive to developing mobile money services. This is true regardless of the regulatory approach taken by regulators to mobile money (e.g. test and learn vs. prescriptive). Further, many aspects of the above items are dependent on a good working relationship, and trust, between regulators and mobile money operators, which need to be developed over time. Finally, mobile money operators can likely help their case if they can show alignment between the services they plan to offer / populations they plan to serve, and the existing financial inclusion goals of regulators & central banks (assuming that such goals are sensible).

Motivating Examples

Successful Implementations

Sri Lanka: The Central Bank of Sri Lanka (CBSL) initially required that mobile money services be bank-led, authorizing one commercial bank, the National Development Bank, to launch a mobile money service. In addition, the CBSL required that all customers have a traditional bank account with the National Development Bank, therefore establishing a non-proportional registration process as all customers had to satisfy standard commercial banking AML / KYC requirements. The National Development Bank subsequently launched a mobile money service, eZ Pay, in conjunction with Dialog, the largest MNO in Sri Lanka, as its mobile partner.

However, eZ Pay failed to gain meaningful traction, attracting only ~13k customers. The CBSL subsequently brought in Dialog and another commercial bank, Hatton National Bank, to work with them proactively to analyze both eZ Pay and successful services in other countries, to understand what could be done differently. The group concluded that the regulatory regime was a significant part of the problem, for example in reducing the incentive for Dialog to invest in the service since they weren't the operator, and in introducing friction to customer registration since a bank account was required.

The CBSL therefore created new regulations which a) implemented a licensing scheme to allow qualifying non-banks to offer mobile money services, as long as funds were held in custody at a licensed commercial bank b) allowed customers to register without having a bank account, c) allowed for a proportional, risk-based approach to AML / KYC based on maximum wallet balances and transaction amounts, and d) allowed for remote customer registration through a customer's mobile phone, leveraging the information stored in the phone's SIM card. The goals of this regulatory regime were to

a) level the playing field for non-bank operators who wished to operate an MNO and b) reduce the friction to customer registration.

Dialog was subsequently granted a license to operate a mobile money service and launched eZ Cash, which has been very successful to date, reaching 1M registered users just one year after launch, with 20% of those active.

Zimbabwe: When Econet EcoCash, the first mobile money service in Zimbabwe, was launched, Zimbabwe had no specific mobile money regulation. However, several of the major goals Econet established for EcoCash, namely bringing electronic payment to the large informal economy (which made up 84% of the population) and providing an alternative to the formal financial system, which had engendered widespread distrust due to earlier economic problems, were aligned with key priorities of Zimbabwe's central bank, the Reserve Bank of Zimbabwe (RBZ). In particular, the RBZ was particularly interested in financial inclusion, and had a strong belief that improved access to financial services could help reduce poverty in the country.

This alignment enabled Econet to establish a good working relationship with the RBZ, and led to the RBZ developing a test-and-learn approach to regulation. This approach involved the RBZ setting up legal guidelines within which Econet could experiment, yet have certainty that it was operating within the bounds of the law, and allowed the RBZ to closely monitor how the market was evolving before developing more detailed regulations.

To date, EcoCash has been very successful, reaching 2.3M customer registrations within 18 months of launch (equivalent to 31% of Zimbabwe's adult population), with 1M of those active, and annualized transaction volume equivalent to 22% of the country's GDP.

Philippines: The Filipino Central Bank, the Bangko Sentral ng Pilipinas (BSP), has a strong financial inclusion mindset, and a belief that mobile money can help bring about financial inclusion. The BSP therefore worked with the mobile industry for a number of years in order to develop an environment in the country which would facilitate mobile money services. The BSP took a number of steps in particular which have played a central role in the development of the country's main mobile money services, SMART Communications SMART Money and Globe Telecom GCASH.

First, they enabled non-banks (e.g. MNOs) to offer mobile money services. BSP views mobile money services as distinct from deposit-taking services, and therefore doesn't require prudential regulation of mobile money services, eliminating the need for mobile money operators to be banks.

Second, the BSP has taken a test and learn approach to regulation while creating legal certainty. Each prospective mobile money operator had a dialogue with the BSP before launching, during which they discussed all of the potential risks in their proposed models. The BSP then provided each operator with a "letter of no objection" allowing them to build their service with certainty that they would be operating within the bounds of the law. This flexibility also allowed SMART Money and GCASH to build

services with very different approaches. Eventually, after both had been in the market for a number of years, more formal regulations were developed.

Third, the BSP allowed non-bank agents to perform cash-in & cash-out. This enabled mobile money operators to scale their agent networks by utilizing the country's existing retail infrastructure including pawn shops, airtime resellers, and money changers. However, the BSP does require agents to apply to be an agent, and to provide relevant business documentation as part of their application, in addition to receiving training on anti-money laundering.

Fourth, the BSP only required KYC to be performed once for each customer, and allowed for a number of different forms of ID to be used for KYC. In addition, the BSP has evolved these regulations over time to remove friction from the process.

Challenged Implementations

India: The Indian central bank, the Reserve Bank of India (RBI), felt that the context in India was very different from that of other countries which had launched successful mobile money services, and therefore decided to develop a very proscriptive regulatory framework based on a system they felt would work best. In particular, they felt that other countries a) had services which focused only on remittance, and not a complete set of mobile banking tools, which the RBI wanted deployed in India, b) had relatively poor banking infrastructure compared to India, c) had a national identification number which could be used to facilitate transactions, which India didn't yet have at the time, and d) had MNOs with a monopoly position (or an effective monopoly position), which made it easier for them to gain scale.

This led the RBI to develop a regulatory regime which a) allowed only banks to operate mobile money services, b) created a specific model for agent networks, which allowed banks to utilize special non-profit entities, Business Correspondents (BCs) and Customer Service Points (CSPs), which could act as agents of banks only for the purpose of acquiring unbanked customers, c) restricted banks, BCs, or CSPs from charging these customers any fees (therefore requiring banks to fund BC & CSP operations through other profits), and d) restricting the number of banks any given BC or CSPs could work with or market for. Over time, however, certain of these regulations were eased, for example allowing for-profit entities (including MNOs) to act as BCs and some charging of customers, but the core framework remained in place. In addition, new restrictions were put in place that blunted even these relaxed regulations; for example, MNOs acting as BCs were not allowed to offer cash-out for their mobile wallets.

The RBI had also created more general financial inclusion mandates, designed to ensure that unbanked consumers had access to financial services, mobile or other. These mandates, for example, mandated that banks create a specific type of bank account, a "no-frills" account, to provide to the unbanked segments of the population, and established targets for the number of such accounts banks

were required to open. These mandates intersected with the mobile money regulatory regime in that banks saw an opportunity to use the BC / CSP structure as a way to push mandated financial services, such as the no-frills accounts, to the unbanked population.

This regulatory regime has resulted in significant challenges emerging which have held back the development of sustainable mobile money services. In particular:

- Banks have little financial incentive to develop additional products serving the unbanked population or grow their unbanked businesses. Instead, they consider this effectively a CSR activity and are simply focused on meeting their financial inclusion mandates as cheaply as possible.
- There has been a huge proliferation of BCs and CSPs which has a) created price wars which have driven the profits out of the ecosystem, b) agent / principal issues with BCs that are more focused on registering CSPs and customers vs. providing good customer service, and c) significant turnover from CSPs which aren't seeing enough transaction volumes.
- Banks are driving BCs and CSPs to open accounts in order to meet their RBI-mandated financial inclusion targets. By definition, these accounts are in hard to acquire (e.g. very rural) areas, which result in high customer acquisition costs, exacerbating the financial challenge for BCs and CSPs.
- There is a mismatch between which entity has control over which parts of the ecosystem – i.e. product and pricing decisions are made at the bank level, resulting in BCs, who are on the front lines of customer registration / utilization, having limited ability to react to what they see in the market.
- Customer utility has been impeded, for example the fact that MNOs are unable to offer cash-out for their mobile wallets.
- Neither BCs nor banks appear to have found a way to drive profitability at the account level, in part because of the issues noted above.

After a recent review of these efforts, a Committee commissioned by the government and chaired by a Central Board Member of the Reserve Bank of India, the Committee on Comprehensive Financial Services for Small Businesses and Low Income Households, developed new proposals for India's financial inclusion efforts, including mobile payments. These recommendations (which are still in the proposal phase) would move the regulatory structure much closer to those of the successful implementations. For example, the recommendations would enable MNOs acting as BCs to register as Payment Banks, a new regulatory category which would allow them to offer a full suite of banking services through their mobile wallet offerings, including cash-out. In addition, the recommendations would change the philosophy of India's financial inclusion efforts from a specific, bank-lead model, to one where non-banks are also permitted to enter the field, where players can form various types of partnerships with other players, and can experiment with different types of business and service delivery-models.

Brazil: The Brazilian government chose not to establish specific mobile money regulations, which created significant uncertainty among potential mobile money participants. This was partially the result of the regulators themselves being unsure if they had the authority to regulate mobile money services.

This created a situation where banks were comfortable operating a mobile money service, as they had pre-existing relationships with regulators which they could leverage, and which gave them comfort that regulators would be comfortable with what they chose to do. However, it didn't appear they had the incentive to do so, as in many cases mobile money services would undercut the profitability of their current offerings. Non-banks, however, had no such certainty about what would happen if they chose to pursue mobile money activities, such as taking deposits or processing payments. Technically deposit-taking institutions do have to register with the central bank, but regulators did not opine on whether "cash-in" for a mobile money service would constitute deposit-taking, leaving this as a grey area.

In addition, Brazil already had a very large correspondent banking system. This system enabled various retailers and merchants to act as agents of banks (the "correspondent banks"), and had grown quite successfully. However, existing regulations seemed to imply that such correspondents could only be utilized by banks, and therefore even if a non-bank were to launch a mobile money service, they might be prevented from using what was the clearest source of potential agents.

Only one operator, Oi, actually attempted to launch a mobile money service under these conditions, Oi Paggo. Oi was the smallest of the major MNOs, and due to the regulatory uncertainty, did not offer P2P or cash-in / cash-out as part of the Oi Paggo product set, which severely hampered its utility, and further did not have a specific focus on the un & underbanked. Oi Paggo saw very limited growth and adoption, reaching only 250,000 users, and Oi therefore decided to try to partner with a bank and effectively re-launch the service with a different model.

Corporate Structure

Corporate structure refers to the way in which a mobile money service is established vis-à-vis its corporate parent. For example, whether it's an operating group within an existing division or a separate subsidiary, how its corporate level-PNL and operational goals are established and tracked, and whether it has a separate management team and Board of Directors. This is key as it determines a) the level of support and amount of resources the business will receive, b) the flexibility its management will have in experimenting while developing a business model, and c) the type, level, and time period of required financial returns.

Main Alternatives

- **Operating Structure Location – *Where within the corporate structure of the parent company the mobile money service itself is placed.***
 - Integrated with parent corporate structure – Mobile money service is deployed as a group or division within one of the operator's existing business lines.
 - Separate from parent corporate structure – Mobile money service is established as a separate entity from any other business line.

- **PNL / Operating Targets – *How PNL & Operating Targets for the mobile money service are established.***
 - Integrated PNL and operating targets – Mobile money service is measured on similar PNL and operating metrics as other business lines within the operator, or has its PNL / operating metrics rolled up into those of another business line.
 - Separate PNL and operating targets – Mobile money service is measured on PNL and operating metrics developed specifically for mobile money, and has its PNL / operating metrics analyzed separately from any other business line.

- **Management Team / Corporate Governance – *The extent to which the management team and oversight for the mobile money service is shared with the parent company.***
 - Shared management team / corporate governance – The management team and oversight for the mobile money service are shared with the parent company, and have other responsibilities aside from the mobile money service.
 - Separate management team / corporate governance – The management team for the mobile money service is made up of individuals solely focused on the mobile money service, potentially drawn from both inside and outside the company. Oversight for the mobile money service comes both from the parent company but also potentially from outside directors brought in just to focus on the mobile money service.

Our Perspective

The mobile money service should be ring-fenced or otherwise established as separate operating entity from its parent, both from a staffing and PNL perspective. Mobile money services should be established as a distinct operating entity, whether within the parent or as a separately capitalized entity, in order to show senior management's commitment to the effort, to ensure it receives the proper level of resources and focus, and to ensure the management team has enough autonomy to build the business without being beholden to other interests within the parent company. Otherwise, mobile money services run the risk of being subsumed within the larger organization, and running into the challenges faced by many efforts at innovation within larger companies. Many regulators are also now requiring some form of separation in order to make their oversight of mobile money services easier.

Establish PNL and operating targets that are distinct from those of the parent company. PNL and operating targets should be established separately from those of the parent, both because the targets for a new venture need to be materially of a different type than those for a mature business, and because the typical parent companies of mobile money operators (e.g. banks and MNOs) tend to have a fixed-asset model, whereas mobile money services will be mostly driven by operating expenses, so need to be measured in a different fashion.

Motivating Examples

Successful Implementations

Zimbabwe: The commitment to EcoCash came directly from the founder and chairman of Econet, who saw the service as having the potential to serve both a significant social mission for the country, and provide a significant diversification to Econet's revenue base. He therefore chose to make a long-term commitment, both financially and structurally, to the service. A key part of this commitment was the establishment of a separate corporate entity, Econet Services, to house EcoCash (as well as any other additional new services they choose to develop). The services housed within Econet Services, including EcoCash, would all have their own governance structure, management teams, budgets, and FTEs. For EcoCash, these FTEs included a sales and distribution group, an operations and product group, and a customer care group. Econet Services did share certain services with Econet where appropriate, such as network infrastructure and audit services, but only those which were either technology infrastructure or ancillary services.

This separate corporate structure ensured that a) EcoCash could receive the proper level of focus and resources within the broader organization, b) that goals and targets for the service could be set distinctly from Econet, which had aggressive short-term financial and operational goals not appropriate for a new venture like EcoCash.

Business Model

The business model refers to a mobile money service's revenue model, profit model, path to profitability, and the economics provided to other players in the ecosystem (e.g. the Agent Network). This is key as it can impact customer adoption and usage growth, the setting of appropriate expectations with the parent company and the market around capital requirements, the types of revenue opportunities pursued, and the alignment created within the ecosystem.

Main Alternatives

- **Sources of Revenue – *The type of revenue sources developed and emphasized by the mobile money operator.***
 - Focus on direct revenues only – The mobile money operator focuses primarily on opportunities to directly generate revenue from charges to customers of its mobile money services.
 - Focus on direct and indirect revenues – The mobile money operator focuses on ways to generate indirect revenues (e.g. churn reduction in its existing businesses), in addition to direct revenues, and such revenues are then taken into account when setting goals and measuring the service's progress.

- **Management Perspective on Mobile Money Business – *The type of business that the management of a mobile money service views mobile money to be.***
 - Technology business – View from management that a mobile money service is simply a technology to be pushed to consumers, and which, once deployed, sells itself.
 - Service business – View from management that a mobile money service is a service offering to be delivered to customers, which requires a more holistic approach to ensure that customers are actually getting value from the service on an ongoing basis. This means developing other aspects of the business besides the technology platform, such as marketing, customer education, and customer support.

- **Expected Capital Investment to Reach Scale – *The amount of the capital, and the timing with which it will be required, that management expects to have to expend in order to build a service with a significant scale of customers and transactions.***
 - Lean capital investment – Parent company expects to invest a minimal amount of capital in launching and running the system (e.g. only in the development of the minimum technology necessary).
 - Expectation of significant capital investment – Parent company expects to invest significant capital upfront and over time before reaching profitability. In addition to technology development, this could include the areas noted in the prior section

(marketing, consumer education, and customer support), as well as in building out an agent network and ongoing deployment of new features and capabilities.

- **Role of Regulated Banking System – *For those mobile money operators which are not regulated banks, the way in which they choose to leverage the existing banking system.***
 - Custodial relationship – Mobile money operator uses a regulated bank to take custody of customer funds, effectively as a service provider. Customers of the service have no direct interaction with the banks.
 - No role – Mobile money operator secures clearance from regulators to act as its own custodian for funds, and builds its own infrastructure to do so. [Note that this option is often unavailable today, as most financial regulators prefer that funds be held in the regulated system.]

Our Perspective

Mobile money services should incorporate indirect revenue sources into their business case and strategy. As noted earlier, for the right type of organization indirect revenue sources (e.g. reduced customer churn, increased usage of an MNO's SIM vs. other MNOs, higher ARPUs, and reduced airtime distribution costs) can be a significant benefit to the company, but must be incorporated into the service's initial design and measured over time.

Expect to invest significant capital upfront and over time, and to not reach profitability until service reaches a meaningful scale, which can take several years. Mobile money services typically generate revenues on a per-transaction basis, but require upfront and ongoing spending in order to roll out an agent network etc., and so reaching profitability requires transaction volumes to scale significantly which can take time. Further, it's possible that the reaching profitability will require launching additional products in addition to the product(s) a service launches with. Our research shows that even for successful mobile money services, reaching breakeven can take three to four years, and profitability can take five or more years. This is a particularly important consideration for MNOs, as it's quite different than the typical industry expectation of reaching breakeven for a new mobile service within two years.

Think of mobile money service as service businesses. Although mobile money services are often thought of as technology businesses, in reality they have a heavy service component, and so the deployment of the technology is not an end in and of itself. Thus, ongoing financial support will be critical to continue to educate customers, build and bolster an Agent Network, and enhance service offerings.

If there is a robust banking system, utilize regulated banks as custodians (when the mobile money operator is not a regulated bank). If a robust banking system exists in the country, mobile money operators can benefit from using those banks to hold customer funds as this can a) ease the regulatory

burden on the operator and reduce the potential imposition of capital requirements, b) reduce the need for technology development of banking infrastructure, c) take advantage of pre-existing relationships between such regulated banks and regulators to get regulators comfortable with the system, and d) help build trust in the system with consumers. Of course, if the regulated banking system doesn't have the confidence of regulators or is not trusted by consumers, situations which do occur in some emerging markets, this does not necessarily apply.

Motivating Examples

Successful Implementations

Somaliland: The management of Telesom ZAAD in Somaliland had a staged revenue generation plan. They initially made the service free to consumers, and focused only on generating indirect revenues. They planned to begin to generate direct revenues only once the service reached specific volume targets. They chose this strategy because they believed the population was too poor and too unfamiliar with mobile money for them to charge at launch, but that once the value proposition had been proved over time that could be an option. In addition, customer retention was of key importance, rather than new revenues, as they were facing cutthroat competition from their MNO competitors.

In addition, ZAAD's management budgeted a significant amount of capital, \$1,000,000, to be spent upfront on customer acquisition, primarily for customer and merchant education. They also trained all ZAAD employees, including their retail employees (as they had opted for a company-owned agent network) on the service, so that employees could evangelize and explain the service to all Telesom mobile customers. This training is subsequently repeated each year.

The indirect revenue generation was expected to come from a reduction in churn for their mobile customer base, a reduction in the cost of airtime distribution (as this could now be effected over the air without retail intermediaries and their associated commissions), and a lift in airtime sales (given increased ease of purchase). They have seen great success in all of these areas – as of 2012, customer churn has been cut in half, from 5% to 2.5%, 70% of airtime sales were being done through ZAAD, for a savings of \$2M, and airtime sales increased 33%, 22%, and 17% in its 2nd, 3rd, and 4th years respectively. In addition, the service has grown to ~400,000,000 subscribers performing an average of 24.7 P2P transactions and 6.1 bill / merchant payments per month, approximately 12.4x and 20.3x the global average, respectively, for similar services.

Zimbabwe: As noted earlier, the management of Econet made a long term commitment to EcoCash, which included a significant long-term financial commitment. This included the expectation that EcoCash would require a significant upfront infusion of capital, and that profitability would only come over time as the service expanded from P2P to multiple products and reached a meaningful scale

of transaction volumes. In particular, Econet's management did not expect the service to reach profitability until after approximately three years of operation.

The upfront capital was primarily dedicated to building a critical mass of agents and of active subscribers. The capital came in the form of actual cash committed by Econet, but also was reflected in the service being designed to operate with very thin margins to enable reinvestment of a large portion of the revenue generated. For example, agents were paid a very high percent of transaction revenues (~80%) as commissions and were given performance-based rewards, in order to create adequate incentives while transaction volumes were scaling, ensure they had adequate float liquidity for transactions, and adequate cash-on-hand to encourage them to invest further in their Econet business. In addition, in order to drive virality and grow the customer base, customers could send money to non-customers, who could then cash-out for free, in order to get more consumers to trial the service and to create more velocity of transactions. Finally, a significant amount of capital was budgeted for customer marketing to drive customer acquisition and then usage, and a dedicated customer service group was built within Econet Services to provide support. This resulted in, just 18 months after launch, an agent network of 4,000 agents, a customer base equal to 31% of the country's adult population, and 1,000,000 active users.

The company's longer term product vision was to create a new paradigm for financial services in the country based around funds stored in the EcoCash system. EcoCash therefore both incented consumers to put money in the system and keep it there, by charging only for cash-out and not for cash-in, and had a number of additional services they planned on launching as the service gained traction which would create additional uses for such stored funds. These included enabling banked-to-unbanked transfers (in conjunction with the existing banking system) and mobile payments at retail merchants. In addition to increasing transaction volumes, this strategy would also increase margins over time, since they would not require commissions to be paid to agents.

Sri Lanka: Dialog eZ Cash in Sri Lanka made customer service a significant component of its offering, in alignment with regulations developed by the Central Bank. Dialog created a customer service center for eZ Cash at launch within its main customer service center, with 100 operators trained specifically for eZ Cash. Customers can contact the service center by phone, text, or email. eZ Cash can block a customer wallet (presumably if a phone is stolen or lost), reverse a transaction, or involve the police if needed to resolve any problems customers have. Further, regulations require that any customer complaints or inquiries be resolved within 3 days, and that new customers are provided with guidelines for resolving disputes, reporting lost or stolen phones, and how to stop payments. This customer service center was handling approximately 9,500 calls per month and helped mitigate issues which could otherwise create significant hurdles to customer adoption or usage such as questions about the service or about specific transactions, or help in resetting PIN numbers.

Philippines: GCASH made services related to corporate customers a key parts of its initial product offerings, including bill payment, merchant payment, and salary disbursement. It selected these

offerings in part because there were strong incentives for both corporate customers and consumers to use GCASH for these offerings, and because they created additional benefits for the service as a whole.

The salary disbursement offering was very attractive to corporate customers because it allowed them to pay salaries electronically for the first time, saving both administrative time and cost, and reducing the operational risk of having to manage a large number of in-person cash payments. The offering was similarly attractive to consumers as it allowed them to receive their funds electronically without needing to physically pick up their wages from their employer, and gave them a source of electronic funds that didn't require them to visit an agent. The offering also created additional benefits for the service by helping drive adoption, since employees had to register for GCASH in order to receive their salaries electronically, creating significant financial flows through the agents in proximity to these corporate customers, helping agents build their profit base and creating a stable revenue stream, and catalyzed local merchants to begin adopting the service, as they knew that there would be a stable base of consumers with electronic funds to spend.

The bill payment offering was very attractive to corporate customers because it reduced the infrastructure they needed in order to accept payments, reduced the number of late payments they had to deal with, and was more convenient for their customers. The offering was similarly attractive to consumers because it reduced their need to physically go to these companies to make in-person payments, and was therefore easier and cheaper. This created additional benefits for the service as it provided another recurring use for the funds that consumers have stored electronically, therefore incenting them to keep funds in the system.

The merchant payment offering was very attractive to merchants because it provided a way for merchants to accept electronic payments without having to pay the interchange associated with card-based payments, and provided a more convenient method of payment for their customers. The offering was similarly attractive to consumers because it reduced the need to carry cash in order to make retail purchases. This created additional benefits for the service as it provided another recurring use for the funds that consumers have stored electronically, therefore incenting them to keep funds in the system.

In addition, all three of these services are products that GCASH's rural banking partners can offer to their corporate and merchant customers, which allows these partners to solidify their own relationships with those customers and create new revenue streams for themselves, which incent them to help drive growth of the GCASH service more broadly.

Product Offering

The product offering refers to both a) the specific products and services offered, and b) the timing and priority with which their rollout is staged. This is key as it determines a) the initial marketing campaigns that can be deployed, b) the initial interaction early customers will have with the service, c) the level and type of customer education which will be required, d) and the level of uptake which can be expected based on the magnitude and breadth of the customer pain point being addressed.

Main Alternatives

- **Breadth of Initial Offering – *The number of products and features with which a mobile money service launches.***
 - Single / limited product offering – Mobile money operator launches service with a very limited set of features and use cases.
 - Expansive product offering – Mobile money operator launches service with a more complete suite of payments and / or banking functionality.
- **Design Methodology – *The way in which the mobile money operator determines which products and features to build.***
 - Copying product set from other, already successful mobile money services – Mobile money operator takes its cues as to which features / products to launch first based on those with which other mobile money operators in other countries have had success.
 - Research driven product development, based on significant consumer need – Mobile money operator takes its cues as to which features / products to launch first based on an analysis of its target customer base in its target geographies, and where significant consumer needs or gaps exist in those populations.

Our Perspective

Mobile money services should be launched with a single (or limited set of) product offerings that are straightforward and simple to understand. Two key factors in driving adoption are a simple marketing message and a product customers can easily comprehend, which are both facilitated by launching with single or limited set of product offerings that are easy to use.

Trust should be built trust into the technology and the system. As noted earlier, trust in the system is critical, and so the more that trust can be incorporated directly into the system, for example to show that transactions have been completed as intended, or that a customer's money is safe if a phone is lost, the easier adoption will likely be. Similarly, the technology should be built to reduce the probability of a

customer making a mistake while making a transaction, and mitigate the problem of resolving a mistake if made.

Initial product offering should target a large pain point of the target population. This might seem obvious on its face, however many mobile money deployments follow a different approach – either launching with products which have worked well in other countries, those that are easiest to deploy from a technology perspective, or those that regulators determine the population should have access to. Instead, mobile money operators should find the intersection of problems they can solve and those whose solution would be of significant value to the customer base they wish to attract. This product set should be developed by deep research into the customer base, in particular those aspects consumers value most about their current solutions, and the barriers to consumers’ use of existing formal financial services, so that the barriers can be mitigated and the aspects valued maintained in the new products.

Product Offerings should take into account the state of existing financial services infrastructure. If a country has widespread formal financial services infrastructure that (e.g. POS units at retail stores), it is likely that to be useful, a mobile money service will need to be able to integrate with such infrastructure. However, if there is not such infrastructure, particularly in the target markets, the service can be more of a closed system (a la M-Pesa in Kenya).

Differing levels of comfort with technology, usage of technology, and control over family finances by different demographics within the target market should be taken into account during product design. In many emerging markets, there can be stark differences between, for example, the way in which men and women interact with the family funds or are comfortable using technology, or challenges with basic comprehension such as literacy or numeracy. These need to be taken into account in order to drive adoption and usage.

Do not launch international remittance until a robust domestic market has been developed. There is a temptation to use international remittances as a launch product, particularly in those countries with significant international remittance flows. However, this is often not the low-hanging fruit it appears to be, as a) It requires connectivity and partnerships with financial institutions / MNOs in other countries, which are not trivial to build, b) senders / recipients in other countries, who will not be direct customers, will have no reason to “push” their friends and family in-country to join the service, and c) thus there are significantly lower network effects.

Motivating Examples

Successful Implementations

Somaliland: The management of Telesom ZAAD developed their initial product offering after an analysis of both the M-Pesa model in Kenya and the market needs in Somaliland, with the goal of

understanding what made M-Pesa successful, but also how those aspects could be adapted to the major pain points in their local context. In particular, they concluded that similarly to Kenya, Somaliland had no formal financial infrastructure with which they would need to connect due to very low penetration rates of such services. However, they also concluded that their target population was much poorer than that of M-Pesa in Kenya, that there was no large enough, suitable set of merchants (or other businesses) which could be leveraged as agents, and finally that even for those merchants which could potentially be used as agents, the business case would be too difficult to make given the unfamiliarity with mobile money.

Therefore, ZAAD launched with the goal of providing the money transmittance and storage infrastructure that was lacking, and building a system where customers actually kept funds in their electronic wallet which they could use for multiple purposes, as opposed to just cash-in / cash-out and P2P transfers. To facilitate such multi-faceted usage, ZAAD decided to focus on bringing corporate customers onto the service. These customers could provide multiple use cases for customers, such as salary disbursement, bill payment, and merchant retail payments, and could also help grow the network, as, for example, they transitioned their own suppliers onto ZAAD in order to be able to pay them electronically. ZAAD also opted to use its own retail stores as agents, given what it felt to be the lack of adequate merchant alternatives. Given its model of trying to facilitate electronic transactions involving corporate customers, a large agent network was also not needed since cash-in / cash-out were not as important to the system, and since the corporate customers could function as the main consumer touch point. Finally, given the perceived challenge in convincing customers of the value of paying for the service, their potential inability to pay, ZAAD made the service free for consumers, and focused primarily on indirect revenue generation.

As noted earlier, this has resulted in a significantly higher level of customer transactions per month than for other comparable services, ~1,800,000 merchant / bill payments per month, as well as a decreasing percentage of cash-in to cash-out transactions over time, reflecting the fact that customers are putting money into the system, and then finding reasons to keep it there.

Zimbabwe: The management of EcoCash saw four significant opportunities to both mitigate significant problems they saw with Zimbabwe's financial and payments systems and to bring value to consumers, and developed their service accordingly. The first was the opportunity to bring electronic payments services to the informal economy. The informal economy in Zimbabwe is thriving, encompassing the majority of workers (84%) and business transactions (65%), yet cash is still the predominant method of transaction, and the alternatives which do exist are inconvenient, slow, insecure, and expensive. Second, Zimbabwe uses US currency, however change is expensive to import, and is therefore in short supply. This results in transactions having an effective minimum of \$1, a significant amount given the average person lives on less than \$2 per day, and results in significant unnecessary drain on funds as consumers must increase purchase volumes to reach the minimum. The third is to provide an alternative to the formal financial system, of which there was widespread mistrust resulting from earlier economic problems in the country. Finally, the fourth was to enable transactions between the formal and informal economies, as there were actually meaningful flows between the two.

This happened, for example, in situations where wealthy individuals provided financial support for their extended families, who might be in the informal economy, and could take the form of either direct person-to-person transfers or indirect transfers, for example to cover the cost of services such as utility payments. Although those in the formal economy did have bank accounts, there was no straightforward way for them to use their accounts to make these types of transfers.

As one of these initiatives, EcoCash wanted to deploy a solution for retailers to enable them to accept mobile payments. However, no meaningful POS infrastructure existed in the country for the company to leverage. In addition, merchants had a number of specific concerns relating to the adoption of such a system, were it to exist. In particular, there were concerns about the fact that existing POS hardware available in the country did not print receipts and was slower than cash (as a result of the time needed to process a transaction), so could cause lines and / or confusion at checkout, b) support for associated POS hardware would not be adequately provided by EcoCash, c) there would be fees / costs for transactions or hardware above those they incurred for cash transactions, and d) that customers might not actually want to transact via mobile payments.

EcoCash therefore took a holistic approach to their retail solution specifically meant to address this local context. They seeded the POS market by purchasing 10,000 POS devices which used transaction processing technology that alleviated the speed concerns, were able to print receipts, and could function via SMS for rural locations without data coverage. For smaller merchants, where a POS device was not economical, EcoCash developed a mobile-only solution. These devices were then effectively leased to retailers at flexible rates based on their transaction volumes, eliminating the upfront capital cost, and with rates which were affordable to merchants of all sizes. EcoCash also created a separate corporate entity, Transaction Payment Solutions (TPS), which would be responsible for providing support for the POS devices and was designed to alleviate merchant concerns about potential operational problems with the devices. This support could include training merchants, setting up devices, or providing ongoing maintenance. Finally, EcoCash is actively promoting the service to consumers, and spent \$600,000,000 on their initial marketing campaign to help educate consumers on the benefits of paying by mobile, drive the necessary change in consumer behavior, and generate demand.

Sri Lanka: To build trust in mobile money services and ensure safety of customer funds, regulators in Sri Lanka required all mobile money transactions to be backed by funds held at a licensed commercial bank. The management of eZ Cash therefore backed all of its transactions 100% by pooled funds held at Hatton National, a licensed commercial bank. In addition, Deutsche Bank, the global investment bank, acts as trustee for the funds. This arrangement prevents Dialog from lending out these funds, or using them for security, collateral, or operational purposes, ensuring that the funds will remain safely at Hatton. In the event that Dialog goes bankrupt, this arrangement also ensures that customer funds could not be seized by any creditors, and would remain safely the property of its customers. In addition, eZ Cash is PCI-DSS certified, the only provider in Sri Lanka so certified.

Challenged Implementations

South Africa: When Vodacom initially launched M-Pesa in South Africa, they tried to replicate the model they had deployed in Kenya, which had had great success. However, there were a number of missteps made, which resulted in disappointing growth.

These missteps encompassed both the product offering and the way in which the service was launched. As South Africa already had existing financial and payments infrastructure, the service was initially launched as a mobile alternative to those options, and was initially rolled out in proximity to where those services were already being used – largely in the better-off parts of the country. The launch plan was not based on the identification of a particular target market or an analysis of the financial flows / potential use cases of such a market. However, as a result of being located in the better-off areas, the service was effectively only available to the higher income segments of the population who were already well served by existing options and didn't need an alternative, while being unavailable to serve the large remittance corridors of the lower income and rural populations.

In addition, while Kenya had very low penetration of formal financial infrastructure and a population of consumers and merchants who were therefore very amenable to the closed-loop system deployed there, which required all parties to use M-Pesa infrastructure, the same was not true of South Africa due to its robust banking environment. A completely separate system was not needed, and likely didn't have the utility value it did in Kenya – instead, in South Africa it was important to provide a way for the unbanked to interact with the existing financial system.

M-Pesa in South Africa also had challenges with both driving customer registrations and with sustaining usage for those who did register. Qualitative research conducted by academic researchers suggested that the service was poorly communicated and marketed to consumers, resulting in a poor understanding of and lack of trust in the service, that systems for processing registrations were slow and unreliable, and that, as a result of regulations, a lengthy registration process was required, all of which likely contributed to the weak adoption.

The service itself also had challenges. Retail stores were used as agents, but the service was only available at a limited number of locations after launch. In addition, float wasn't adequately managed, and many stores were unable to perform cash-out transactions until they had registered a certain amount of sales, as they started the day without adequate cash on hand. Finally, over time many retailers who were M-Pesa agents opted not to continue as agents, as they were finding that the service was disrupting their retail business. This was due in part to long lines created by the long registration process, as these agents did not typically have employees dedicated to M-Pesa, as well as the issues related to the float management.

These problems resulted in low growth of both customers and transactions, with only 1.2M registered users two years after launch, growing at only ~7% annually, and of which only 1% appeared to be active. This performance was so disappointing that Vodacom opted to discontinue the service at the

end of 2013, and re-launch with a new banking partner and new model in the summer of 2014. This new service was launched with a focus on serving the unbanked & lower-income segments of the population, and was geographically structured to support the pre-existing financial corridors of that population.

Agent Network

The Agent Network refers to the way in which a) agents are selected to be part of the network, b) the network's hierarchy is structured, c) its growth is managed, both by geographical location and by number, d) how the customer experience is managed (e.g. customer service, fraud, education), and e) how agent economics are managed. This is key since the agents are the primary point of contact for customers, and will be visited by customers much more than might be expected of a mobile service in order to perform functions such as cash-in / cash-out, and so represent the lynchpin of the service. As with any other service with a heavy customer service element, a good experience drives strong word of mouth, however even a small percentage of negative experiences can drive an outsized customer backlash.

Main Alternatives

- **Agent Selection – *The characteristics of the businesses which a mobile money operator selects as agents.***
 - High economic importance – Mobile money has the potential to become a significant profit driver for the agent once transaction volumes reach scale.
 - Low economic importance – Mobile money will likely not be a significant profit driver for the agent, even once transaction volumes reach scale.
- **Geographic Rollout – *The way in which different geographic locations are prioritized as an agent network is being built out.***
 - Local geographic clustering – New agents are registered in order to prioritize achieving a high density of agents in specific regions.
 - Wide geographic coverage – New agents are registered in order to prioritize covering a wide and expanding geographic area.
 - Product-based clustering – New agents are registered in order to prioritize servicing the money flows resulting from initial product offerings.
- **Hierarchy – *The structure of the hierarchy among agents, if any, a mobile money operator chooses to utilize in its agent network.***
 - No hierarchy – All agents are acquired and on-boarded by the mobile money operator, report directly to someone at the operator, and all agent transactions (e.g. e-float rebalancing) must be done with the operator.
 - Hierarchical approach – There are tiers of agents, and those agents at the higher tiers are responsible for management of those in the lower tiers, which can include acquiring new agents, responsibility for their performance, and managing their cash and e-float needs.
- **Growth – *The rate at which a mobile money operator grows its agent network.***

- Low-growth – Growing an agent network slowly and taking a lean approach, potentially in order to minimize costs to the mobile money operator of having to acquire and onboard agents, or to increase the economics to individual agents in the network.
 - High-growth – Growing an agent network rapidly, potentially in order to acquire agents before other competing services can do so, to ensure widespread geographic coverage for the service, or to help ensure a better customer experience due to broader availability of more agents in closer proximity to customers.
 - Balanced-growth – Growing an agent network by attempting to balance the number of agents with the number of customers / transactions flowing through the service, and keep the ratio relatively constant as the network scales.
- **Customer Experience – *The extent to which a mobile money operator emphasizes customer service as an aspect of the role of its agents.***
 - No / little service component – Agents are primarily transactional, and are not trained to act as service representatives.
 - Heavy service component – Agents are expected to provide a more complete customer service function in addition to facilitating transactions.

Our Perspective

Agents for whom mobile money can be a consequential source of profits should be prioritized. Agents who believe that mobile money can be a significant source of profits are more likely to help market the service to customers, to invest in customer service, to prioritize it over other revenue streams, and to become evangelists. However, those who don't believe it can be a significant source of profits are likely to take the opposite approach, including not investing in the service, prioritizing other revenue streams, and not becoming strong advocates. Therefore, we believe that mobile money operators should prioritize agents from the former group, as they will likely drive higher transaction volumes, more satisfied customers, and increased registrations.

Agent networks should be built to support initial product offerings. In order to align the agent network with a mobile money operator's initial product offerings, we believe mobile money operators should cluster agents around the strongest money flows which result from those product offerings. For example, if remittance from rural workers to friends & family in cities is a core initial product offering, agent networks should a) be built in locations which facilitate both sides of those transactions, and b) the rollout of those locations should be prioritized by analyzing the corridors through which the strongest customer demand and money flows are observed.

However, there is a challenge in that the strongest initial product offering and / or transaction corridors might take time to emerge. So, to the extent possible, the rate of growth in the agent network should be moderated until the mobile money operator builds confidence in their identification.

Agents should be rolled out in order to optimize density. Our research shows that proximity to an agent is one of the most important drivers of usage, so we believe that agent networks should be rolled out in such a way as to maximize agent density in key regions, as that will maximize transaction flow in those regions and provide strong early traction from which to build.

Agent networks should be grown in a balanced fashion. Our research showed that when agent networks diverge from a balanced approach to growth, they quickly become problematic. When growth is too fast, it is very hard to ensure adequate economics to each agent, as they are splitting what at first is a very small pie, which can lead to agent dissatisfaction, and therefore agents leaving the system, or prioritizing their other businesses. When growth is too slow, customer satisfaction suffers, both as a result of difficulty in finding an agent in close proximity, which has been shown to be a significant driver of usage, as well as in the experience at the agent, since agents are then forced to service too many customers at once. Therefore, maintaining a consistent ratio of customers / transactions to agents, which balances both agent economics and the customer experience, appears to be the best way to build a sustainable agent network.

Customer service should be a key part of an agent's role. Since agents are the primary way customers interact, in-person, with a mobile money service, the experience they have with agents can have a very consequential impact on their overall satisfaction with the service. Thus, there needs to be a service component to the role which agents play in order to ensure that this experience is a great one.

Motivating Examples

Successful Implementations

Somaliland: Telesom ZAAD in Somaliland is an example of a hierarchical agent structure. In 2013, they had approximately 178 agent location. These agents were all pre-existing retail locations wholly owned by the company, as described earlier.

They created a two-tiered agent hierarchy, with the 20 largest stores acting as super-agents, or “Dealers,” while the smaller agents were consumer-facing. These Dealers were then made responsible for the supervision of the smaller agents, including, for example, ensuring that they had adequate liquidity at all times, and also the recruitment and management of merchant customers. Unlike agents in most other networks, because ZAAD agents were company employees they were salaried and not on commission, but they did have bonuses which were tied to their performance on ZAAD-related targets.

Zimbabwe: The management of EcoCash was very careful in how they built their agent network. They wanted to develop it in such a way that it could scale quickly to provide convenient access for customers, but also such that they could manage the ratio of agents to active subscribers to ensure the business case for the agents remained strong.

From a consumer perspective, they wanted to scale the network quickly to meet customer demand, ensure broad access to the service, and minimize the lines / wait times to talk to an agent. They chose to focus their rollout in semi-urban and rural areas, as they felt these were the locations where consumers would be cashing out, and would therefore need to visit an agent.

However, they also set explicit lower and upper targets (250 and 600 respectively) for the number of active customers per agent. The lower limit was meant to ensure there would be adequate transaction volumes and therefore economics for each agent, both to ensure they remained agents, and that they would have additional funds to invest in the resources they were committing to the service. The upper limit was meant to ensure that agent quality stayed high, and that agents wouldn't have to sacrifice service in order to serve all of their customers. This approach has enabled EcoCash to grow to ~4,000 active agents, register 31% of the country's population as customers, with ~1,000,000 of those active (~250 active customers / active agent), while also growing to \$200M in monthly transaction volume (equivalent to 22% of the country's GDP).

Driving Adoption

Driving adoption refers to the marketing strategies, campaigns, and tactics used to launch the service, acquire customers, and ultimately convert registered customers into long-term users. This is key as it determines the cost of customer acquisition, the potential rate of customer acquisition, and customer usage rates. In addition, in the geographies and populations these services are targeting, mobile money services, and financial services more broadly, are novel and largely unknown, so this is not a trivial effort and will often require significant consumer education. Registration in and of itself is also not a guarantee a customer will become an active user over the long-term, and active user rates for many services are in fact very low, so effort must be expended to ensure that consumers who do register take the actions which will convert them into long-term users.

Main Alternatives

- **Marketing Channels – *The type of marketing channels a mobile money operator chooses to utilize to launch its service.***
 - Above-the-line only – Only broad-based marketing channels, such as television, are used.
 - Below-the-line only – Only targeted marketing channels, such as one to one campaigns, are used.
 - Both above and below the line – Both broad-based and targeted marketing channels are used.

- **Referral Channels – *The type of referral channels a mobile money operator emphasizes in its marketing efforts.***
 - Friends and family – Friends and Family are expected to be the primary referral channel to convert prospective customers to customers.
 - Agents – Agents are expected to be the primary referral channel to convert prospective customers to customers.
 - Mobile money operator employees – Employees of the mobile money operator (e.g. marketing teams) are expected to be the primary referral channel to convert prospective customers to customers.

- **Customer Registration Focus – *The type of registrations a mobile money operator emphasizes / incents.***
 - Quantity of registrations – Focus on driving the highest volume of registrations.
 - Quality of registrations – Focus on driving registrations of high quality, even if that means a reduced quantity. High quality implies customers who have an educated understanding of why and how the mobile money service could be useful to them.

- **Marketing Funnel**

- Pre-registration – Marketing focus is on driving users to register only.
 - Pre and post-registration – Marketing focus on both driving users to register, and on getting them to use the service post-registration.
- **Fee Structure**
 - Short-term revenue generation – Pricing meant to generate as much revenue as possible over the short-term from the transaction volumes that materialize.
 - Incentivizing specific behavior – Pricing meant to incentivize consumers to take certain types of behaviors that management believes are accretive to the development of the service over the long-term.

Our Perspective

A structured and deliberate demand generation plan is critical. Mobile money services will not be widely adopted simply because the technology is available, given the newness of the product offerings, and financial services broadly, to the target customer base. Although customers likely believe there is a better solution to the financial challenges they have, it is not necessarily going to be obvious that mobile money is that solution. Therefore, in order to bridge that divide, a well-thought out and well-funded marketing plan is essential.

Both above-the-line and below-the-line marketing should be used. Both awareness and education are critical aspects of convincing consumers to sign up for mobile money service; awareness by itself is not sufficient. As noted earlier, mobile money is not a service they are likely already seeking out, so driving awareness is important. However, for the same reason, they will need to understand specifically how a mobile money service can benefit them before they make the effort to register. Thus, above-the-line marketing should be used to drive awareness, and below-the-line marketing to drive education and eventually adoption and usage.

Friends and family appear to make the best advocates for mobile money services. Our research showed that referrals from friends and family are the strongest factor in convincing consumers to register for the service. This should therefore be taken into account and leveraged when planning marketing campaigns and deciding where to spend marketing dollars.

The market should be segmented by potential receptivity to mobile money services. Mobile money operators should perform a market segmentation of their target consumer base, instead of viewing it as one homogenous market, which is often the approach taken. The goal of such a segmentation should be to identify those segments which might have a higher level of receptivity to a mobile money service, for example those that are already heavy users of informal financial services.

Friction with customer registrations should be reduced as much as possible. As with any new service, the more friction there is to customer registration, the fewer customers will register. This is likely

exacerbated with mobile money services, as early customers will be uncertain as to exactly how much value they will derive from the service, therefore likely reducing their willingness to spend time on registration. This can be accomplished in a number of ways, for example through enabling mobile registration, reducing the information required for registration, or reducing the cost / risk of trialing the service.

Focus on high-quality registrations. Ultimately, if customers do not become long-term active users, they effectively represent a cost to the service, as there was a price paid for their acquisition. Our research shows that successful services focus on driving high-quality registrations, resulting in customers that are more likely to become long-term active users, since they are registering for the service because they believe they can get value from it.

Develop an understanding of, and encourage, actions which lead to long-term usage. As with any consumer service, there are likely a set of actions customers can take which lead to recurring usage, and are what will convert them into long-term, active users – i.e. those actions which create the most value for the customer. Mobile money operators should therefore focus on identifying these trigger actions, and then finding ways to encourage customers to take them.

Use fee structures to incentivize those behaviors that will help develop a robust service. Rather than trying to set fees in order to capture as much direct revenue as possible early on, fee structures should be used to a) reduce friction to prospective customers trying the service (e.g. reducing upfront fees), and b) encouraging those behaviors by customers which will be accretive to the service developing over the long-term (e.g. for service with a wallet component, having lower fees for cash-in and vice versa for cash-out).

Motivating Examples

Successful Implementations

Philippines: Both major service providers, SMART Communications' SMART Money and Globe Telecom's GCASH, followed a strategy of using both above and below-the-line marketing, although in different ways.

Initially, GCASH made extensive use of above-the-line marketing such as billboards, point of sale advertising, and radio spots to raise awareness. However, they then transitioned to below-the-line marketing, such as targeted SMS campaigns to promote specific use cases, and roaming, in-the-field staff to educate prospective users.

SMART Money found a way to drive both awareness and education at once through above-the-line marketing, by creating a series of short videos showing how SMART Money helped customers with

specific needs (creating awareness) and then showing the customer walking through each step of the transaction (educating customers on usage). The company also used below-the-line marketing to promote the service in the branches of its partner bank, Banco de Oro, and trained their branch workers to be able to pitch the service to customers.

Both SMART Money and GCASH have also taken steps to reduce the friction involved with customer registration. Both SMART Communications and Globe Telecom are embedding their respective mobile money services on the SIM card in each new phone they sell, so that prospective customers can respond to marketing initiatives over their phone and instantly trial the service, can activate the service without performing a SIM swap if they decide to become a customer, and, to facilitate registration, the phone can retrieve some of the information required for KYC directly from the SIM card.

Both services allow for mobile account registration, although they take somewhat different approaches. A key complicating factor is that regulations require the services to perform identity verification via a physical ID before any cash-in or cash-out transactions can be performed.

SMART Money allows for account registration and activation directly through a customer's phone, however customers can only perform a limited number of transaction types, including airtime purchase and money transfers. In order to perform cash-in and cash-out, they need to visit a SMART Money retail location to perform additional identification verification. There, they can either get a generic account card immediately, but would need to show ID at every subsequent cash-in / cash-out transaction, or can wait to receive a personalized card, which eliminates the need to show ID going forward.

GCASH also allows for account registration and activation directly through a customer's phone, but allows customers to enter all necessary KYC information directly into their phone at the point of registration, instead of requiring them to visit a GCASH location. However, as a result, customers will need to show ID each time they perform a cash-in or cash-out.

Zimbabwe: As noted earlier, the management of EcoCash chose to make a significant upfront investment in a very structured approach to consumer marketing, comparable to the amount Econet would invest in launching a new data network. This approach utilized both above-the-line and below-the-line marketing; above-the-line to raise awareness, and below-the-line to educate consumers on the service and drive registrations.

Above-the-line marketing was focused only on clear and simple promotion of EcoCash's initial product offering, P2P transfers. Below-the-line marketing utilized Brand Ambassadors, who worked in the field to help educate and then register customers. These Brand Ambassadors were assigned strategically to high-value areas (e.g. high-traffic areas or economic centers) in target regions, the same areas where EcoCash was also building out its agent network. Importantly, although there were expectations about the number of customers Brand Ambassadors should register each day, they were paid a flat salary and not incented on the number of registrations they collected. This was done in order to ensure that Brand Ambassadors could focus educating prospective customers as much as needed,

and therefore driving a higher quality of registration, without feeling the need to push for higher numbers or sacrifice their earning potential. These Brand Ambassadors were a very successful channel, driving 75% of customer registrations. EcoCash also used promotions, such as offering \$1 in free airtime to all new registrants, resulting in \$2,000,000 in airtime being given away, which management felt was a significant success.

EcoCash also focused on driving engagement post-registration, to help ensure that customers became long-term active customers. For example, they ran a very successful 100 x 100 x 100 promotion, whereby all customers who used the service would be entered in lottery to win \$100 each day for 100 days, and on the 100th day the prize would be \$100,000. This resulted in activity rates rising from 20% to 34% during the promotional period, and these rates held steady in the three months following the promotion.

These activities helped EcoCash achieve 2,300,000 registered users (31% of the country's adults, more than the number of bank accounts in the country), and 1,000,000 active users, within 18 months of launch.

Sri Lanka: eZ Cash was able to take advantage of regulations allowing for proportional KYC to enable customer registration and account activation directly from a customer's mobile phone, without customers needing to visit an eZ Cash agent. New customers can register for an account directly from their phone by just dialing a particular phone number, and eZ Cash is able to reduce friction even further by automatically pulling some of the information needed for registration from its internal database, stored there when the customer originally registered their SIM Card. This over-the-air registration enables customers to open a "Classic Account," which allows them to have mobile wallet balances, and make transactions, up to certain limits. If they wish to exceed those limits, they can visit an eZ Cash agent to perform further identity verification and upgrade to a "Power Account." This helped eZ Cash achieve 1,000,000 registered and 200,000 active users just one year after launch.

5. Conclusion

Our research analyzed five successful mobile money deployments – Telesom ZAAD in Somaliland, Dialog eZ Cash in Sri Lanka, Econet EcoCash in Zimbabwe, SMART Communications SMART Money in the Philippines, and Globe Telecom GCASH in the Philippines – and five less successful deployments – Vodacom M-Pesa in South Africa, MTN m-money in Uganda, Eko Financial Services in India, and the broader situations in Nigeria and Brazil.

Our analysis of these deployments identified a set of key competencies these operators needed to develop, a set of key decisions which they needed to make in developing those competencies, the main alternative options for those decisions which we observed, as well as a set of those alternatives chosen by the successful operators.

In particular, our research revealed significant similarities in many aspects of the successful mobile money deployments, including the regulatory structures set up by their central banks / regulators, their corporate structures, the guiding principles of their business models, and the way in which they went about building their agent networks and driving adoption. We believe these aspects can be generalized to other mobile money deployments. We also did find significant differences in these services, in particular in their product offerings. However, there were important commonalities among these product offerings, in that they addressed a significant pain point for their target population, were attuned to the local context (e.g. demographics, infrastructure, and economics), and were straightforward for consumers to understand and to use. We believe this consumer and context-oriented design orientation is the key success factor, not the specific product offerings, and can also be generalized to other mobile money deployments.

Although this research focused specifically on a small set of mobile money services, we believe that these conclusions are in fact generalizable to mobile money services in any emerging market which are focused on financial inclusion. We believe this to be the case because our understanding is that most other such mobile money services have a similar structure to that described here, and because the mobile money services we analyzed cover a disparate set of geographies with different political climates, economic situations, and pre-existing levels of financial infrastructure, yet we observed significant commonalities among the key competencies required for success, and the approaches taken to develop those key competencies by the successful services.

We believe this has potentially consequential implications for practitioners – i.e. those organizations who wish to deploy a mobile money service and the individuals tasked with doing so – and suggests a different approach to building such a service than those which seem most common today. Anecdotally, it appears that many organizations which build mobile money services either directly copy a successful service from a different country and attempt to drop it into their country, or start from scratch and attempt to determine, without reference to other successful and unsuccessful deployments, what will work best for their country and local context. In addition, it appears that most of these organizations

don't have a good sense, ex-ante, of the aspects of building such a service that are most critical to its eventual success or failure.

We believe that this research can provide practitioners with a “roadmap” to help guide their thinking in building a mobile money service. In particular, we believe it can help them ensure that they are focusing on those aspects most critical to the ultimate success or failure of their service, understand the major levers available to them, and understand where they can learn from the efforts of other successful deployments, and where they should develop localized solutions. These items should help practitioners develop mobile money services with a higher level of confidence in the approach they take, and deploy their services with a higher likelihood of success.

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