Mobile Money for the Unbanked

Annual Report 2010

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Foreword

The MMU Deployment Tracker reports 147 mobile money initiatives in developing markets, 60 of which have already launched. The eight largest operator groups, which together represent over 2 billion consumers, all have live mobile money deployments and strategies to further roll out mobile money across multiple markets. If we add mobile subscriber numbers from Bharti Airtel and China Mobile, then the number of existing mobile subscribers who could access mobile money rises to over 2.7 billion. Mobile money is a mainstream strategy for mobile operators in developing markets; it is increasingly difficult to find a mobile operator who does not have mobile money in their current or near future plans.

In the last 12 months, we have witnessed new mobile money deployments breach the one million consumer mark in Tanzania, and we have heard of daily customer acquisition rates in Uganda which surpass even those of M-PESA in Kenya. However, in the same markets we have found that getting customers to actively use services is more difficult than getting them to sign up – which will be the industry's next major challenge to overcome.

Despite these advancements this is still just the beginning; a year on from our last Annual Report, we are continuing to learn from the phenomenal amount of activity worldwide. We have a better understanding of mobile money business models and how to address key challenges such as regulation and distribution networks; we have also acknowledged that success in this industry requires significant upfront investment and management focus.

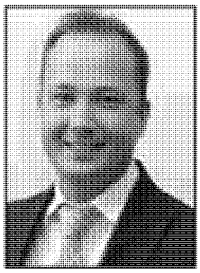
We will continue to experiment, innovate, research and work with the industry to drive success and scale in mobile money by overcoming barriers and sharing best practice.

This Annual Report is the next installment in a now large and still growing knowledge database that I trust will educate, inform and assist you in delivering mobile money. We look forward to working with you to apply this knowledge to your market and to also learn from your experiences.

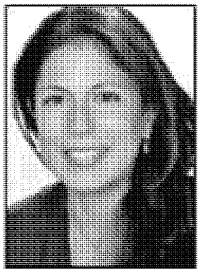
Regards

Gavin Krugel
Director

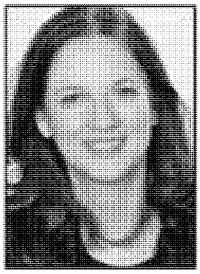
Team



Gavin Krugel
Mobile Money Director, creates the strategy and sets the direction of the programme.

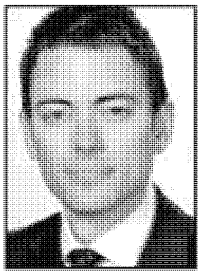


Seema Desai
Senior Programme Manager, defines and manages the MMU work plan to ensure that the MMU Programme achieves its overall objective of providing mobile money services to low income customers as effectively and efficiently as possible

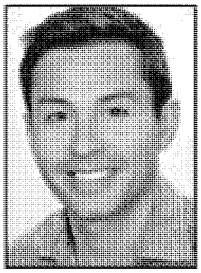


Marina Solin
Regulatory Director, leads the regulatory work stream. Her aim is to accelerate discussion between the mobile industry and regulatory authorities to help create appropriate regulatory frameworks.

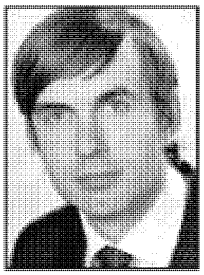
Paul Leishman
Knowledge Manager, leads the development and dissemination of commercial content, including business strategy analyses focused on mobile money business models, and case studies profiling key success factors of deployments.



Neil Davidson
Business Development Manager, supports mobile network operators that have been awarded grants from the MMU Fund as they develop and deploy mobile money services.



Camilo Tellez
Programme Coordinator, manages the production of key deliverables, organises key MMU events and supports the team more widely with planning, logistics and reporting



Andrew Zerzan
Regulatory Projects Director, advocates for regulatory regimes that proportionately link risk to controls.

How to Connect with the MMU Team
The team looks forward to collaborating with Working Group members and the wider industry to ensure our work is relevant, actionable and plays a leading role in advancing the market on key issues. In order to provide valuable and timely resources for the mobile money community, including analysis of the latest commercial and regulatory issues, in-depth case studies, photos and videos of deployments are available at www.gsmworld.com/mmu. Be sure to interact with us on our blog at www.gsmworld.com/mmublog.

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Progress Report

The MMU Programme has **significantly grown the portfolio of MMU projects and begun to generate learnings.** We have funded 19 projects across Africa, Asia and Latin America. These projects will bring mobile money into new markets, reach more unbanked people and offer a wider range of financial services to low income customers.

The initial US$5m fund has been allocated to promote mobile money deployments around the world. Early learnings from this portfolio include Vodacom Tanzania's approach to managing agent liquidity, and how SMART has adapted its approach to training agents in order to reach more remote islands.

We have a better understanding of a number of mobile money deployments. We continue to learn from M-PESA in Kenya, as well as SMART and Globe in the Philippines and have also identified and researched additional deployments which are reaching millions of customers.

- TRUE key learnings: operators do not necessarily need launch with into a P2P service in order for their mobile money deployment to scale successfully - True Money has over 5m customers and its core offering is bill payments (for services provided by the True Group). This approach is also achieving success in other markets, such as Bangladesh.
- Zap key learnings: upfront investment is hugely important for making mobile money achieve its full potential. Also, the Zap model differs from M-PESA in important ways, such as in their focus on corporate customers and offering banks access to new customers, which provides interesting comparison points and additional learnings for the industry.

We have focused our research on distribution and offer a substantial piece of research in this report to assist mobile operators in building, managing and incentivising your distribution networks.

We have continued to promote dialogue between operators and financial regulators through initiatives such as the Leadership Forum 2009 and a regulatory roundtable in Cameroon. There is still lack of clarity in the minds of the financial regulators around mobile money issues, therefore we have produced a Regulatory Q&A as well as research on AML / CFT.

Our next focus will be to continue working with our grantees in order to highlight key challenges, extract further learnings and issue best practice. We will also work on understanding bank partnership models, technology solutions and how to drive customer usage of mobile money.

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Title	Description	Purpose
The Mobile Money for the Unbanked Fund Portfolio	Update on the MMU Fund grantee portfolio – the projects that have been funded and what the industry can learn from them to date	To accelerate the spread of mobile money services worldwide, by sharing insights and key learnings from mobile money deployments that have been funded by the MMU Programme
Regulation		
Methodology for Assessing Money Laundering and Terrorist Financing (ML/TF) Risks	Based on the existing framework of Financial Action Task Force (FATF) recommendations, this document seeks to apply rules aimed at preventing ML/TF through mobile money services proportionately.	To ensure that rules to prevent money laundering and terrorist financing are used appropriately and effectively and that the benefits of mobile money services reach large parts of the unbanked population.
Regulatory Questions & Answers on MMU	Regulation of mobile money has prompted some recurring questions to be asked by both regulators and industry; these are captured and answered by the MMU Programme in this document.	To reduce the level of confusion among regulators and unify the industry's answers.
Focus on Agent Networks		
Building a Network of Mobile Money Agents	This section of the handbook describes the key issues facing operators as they build agent networks and key success factors.	To help shape operators' strategies around building a distribution network for mobile money.
Incentivising a Network of Mobile Money Agents	This section of the handbook describes how mobile network operators can design a set of incentives that encourage agents to become active and productive participants in mobile money distribution.	To help operators understand why incentives are a powerful way to shape agents' behaviour.
Managing a Network of Mobile Money Agents	This section of the handbook describes how mobile operators can ensure that the agent networks they have built and incentivised are managed effectively.	To help operators appropriately manage their agent networks with the end goal of building confidence among users.
Bridges to Cash: The Retail End of M-PESA	Describes the challenge of maintaining liquidity for M-PESA networks. Written by Jake Kendall and Ignacio Mas from the Bill and Melinda Gates Foundation and Frederik Eijkman from PEP Intermedius.	To share lessons with the industry about the complexity of mobile money liquidity management.
Case Studies		
Zain Zap	This case study documents how Zap's vision of cash free ecosystems is translated into their service design and delivery.	To provide lessons on unique collaborative engagement models with the financial sector and different distribution settlement mechanisms.
True Money and M-PESA: Two Unique Paths to Scale	Describes the True Money model and compares their approach to the industry's best known success story, M-PESA.	To share lessons with the industry on how two different mobile money deployments approached service design and distribution, exploring the rationale behind decisions on their unique path to scale.
Mobile Money in the Philippines – The Market, the Models and Regulation	Describes the factors that have contributed to the success of mobile money deployments in the Philippines that have been launched by SMART and Globe, namely SMART Money and G-Cash.	To provide mobile operators with a comprehensive view of two well-designed mobile money models that have achieved scale in the Philippines, and to describe the contributions from and benefits to each participant within the ecosystem.

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The Mobile Money for the Unbanked Fund Portfolio

At Mobile World Congress in Barcelona in February 2009, the GSMA and the Bill & Melinda Gates Foundation announced the launch of the Mobile Money for the Unbanked Programme. The centrepiece of the programme is a US$5 million fund that was set up to encourage mobile network operators to create new services for previously unbanked people in developing countries by making charitable investments in their mobile money initiatives.

Fifteen months later, the GSMA announced at Mobile Money Summit in Rio de Janiero that these funds have been committed in support of mobile money deployments by 19 operators in Latin America, Africa, and Asia – a group of operators which serves more than 170 million people who lack access to financial services. Between now and the end of 2011, millions of previously unbanked customers are expected to directly benefit from mobile money services launched with the support of the Fund. At the same time, the MMU team at the GSMA is closely involved in these projects to ensure that the wider industry is able to benefit from lessons learned by operators in the portfolio – accelerating the spread of mobile money services worldwide.

Speed: New mobile money deployments

An important objective of the programme is to increase the number of mobile money deployments around the world, and the Fund has accordingly invested in a number of mobile network operators launching new mobile money platforms. **Roshan's** M-Paisa, launched in October 2008, remains the only mobile money platform in Afghanistan; likewise, **Cellcard** will be the first operator in Cambodia to launch a mobile money platform when it goes to market later this year, as will be **Digicel** in the Pacific region and **MTN** in Cameroon. **Tigo** is experimenting with innovative distribution channels for a new mobile money platform in one of its African markets. **Tata**, with technology partner mChek, is pilot-testing a payments platform for low-income users that adheres to India's complex rules for mobile money services. **Robi** (formerly AKTEL) is developing a suite of mobile money services relevant to Bangladesh. **AXIS** in Indonesia has created a mobile money platform called mDuit ("duit" is slang for money in Indonesian), which it is offering to banks and microfinance institutions as a new channel for reaching their customers.

Sophistication: Going beyond money transfer to develop services tailored to the needs of low-income consumers

A number of operators are using investments by the MMU Fund to innovate, developing the next generation of services to be offered on mobile money platforms.

Both **Oi** and **Safaricom** – which already have successful mobile money payments services in Brazil and Kenya, respectively – are adding a bulk payment functionality to allow governments to make social transfer payments to vulnerable households. When such payments are made using traditional banking infrastructure, they tend to be expensive for governments and inconvenient for recipients; Oi and Safaricom aim to show that the mobile channel can facilitate payments more cheaply and more conveniently.

In the course of the last year, **Telenor Pakistan** and **Orange** in West Africa both launched mobile money platforms which allow users to pay bills, make P2P transfers, and purchase airtime. With their MMU Fund grants, both operators are exploring how they can offer users more sophisticated financial services.

Zain Zap is a mobile money platform now live in seven African markets. With MMU support, and in line with Zain's "One Network" strategy, Zain is enabling instantaneous cross-border P2P transfers between Zap users in Kenya, Tanzania, and Uganda – making cross-border remittances and trade substantially easier. And Bangladesh's **Grameenphone** is working to enhance its mobile money service offerings (which were originally limited to bill payment) with, for example, a mobile ticketing service for Bangladesh Railways.

Scale: Extending the reach of existing mobile money platforms

Other operators are making use of MMU funding to expand the reach of their mobile money services into the most remote parts of their markets – where the unbanked are most likely to be found.

In its Island Activation Project, **SMART** (Philippines) is extending the reach of SMART Money to remote islands in the Philippines that have limited access to financial services and are not priority areas for traditional financial institutions. Their approach is

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to partner with MFIs and cooperatives which agree to operate SMART Money Centres in their branches. (See sidebar for more on the Island Activation Project.) Likewise, **True Money** is working to appoint regional administrators and other locally respected entities as agents in rural parts of Thailand, transforming a bill payment service which currently targets affluent, urban customers into one that is substantially more inclusive. **Dialog** is expanding its mobile money offering into the northern provinces of Sri Lanka, which were, until last year's settlement, wracked by violence between the Tamil Tigers and government forces.

MTN Uganda and **Vodacom Tanzania** are using MMU funding to test new approaches to customer acquisition and managing agent liquidity. **MTN Uganda** has appointed hundreds of field registration agents to educate users about mobile money and to sign them up on the spot, a strategy that has to date generated hundreds of thousands of registrations. And **Vodacom Tanzania** is piloting an innovative approach to the common problem of agent liquidity: extending credit to masteragents. (See sidebars for more on both of these projects.)

SMART's Island Activation Project

SMART Money, which was launched in the Philippines in 2001, is one of the world's pioneering mobile money deployments. With support from the MMU Fund, SMART is extending the reach of SMART Money to remote islands (the Philippines is composed of 7,107 islands, of which roughly 4,000 are inhabited) that have limited access to financial services and are not priority areas for traditional financial institutions. They are doing so by partnering with MFIs and cooperatives which agree to operate SMART Money Centres in their branches.

Key learnings to date

Operators often find that their normal agent recruitment and training processes are unsuitable for setting up agents in very remote locations. In the Philippines, interested partners need to report to Manila or the nearest regional office of the central bank for accreditation – which, for regulatory reasons, includes submitting necessary business documents and attending a scheduled Anti-Money Laundering (AML) lecture that is led by a representative from the central bank. This makes it challenging to acquire agents in remote islands, because it is time consuming and costly for potential agents to attend the required training sessions.

This prompted SMART to turn its usual process on its head, and to begin holding training sessions at or near the site of the new SMART Money Centre. However, the problem that SMART and other operators seeking to establish branches in remote areas face is the high cost of agent recruitment and training. Sending SMART personnel and a representative from the central bank to train new agents in outlying islands – which often involves some combination of plane, land and boat travel – makes establishing a SMART Money Centre in an outlying island substantially more expensive than in metropolitan Manila. The costs of agent monitoring and oversight will naturally go up, too. But failing to adequately train and monitor agents would risk degrading the customer experience.

Resolving this dilemma requires creativity on the part of the operator. For this project, SMART have created a training video that can be left behind at the new SMART Money Centres to serve as a "refresher" for front-line staff on how to facilitate various transactions. This obviates the need for follow-up training that might normally occur in-person. SMART also hope to demonstrate to the regulator that their own staff are capable of offering AML/CFT training, thereby reducing the number of people who must make the trip for training sessions.

Given the high cost of agent and customer acquisition, the underlying business model for establishing agents and increasing the accountholder base in remote areas remains unclear. Although the steps that SMART has taken to reduce costs are likely to be important, it will be revenues from transactions generated by these new agents that ultimately make or break the business case.

The use of credit in Vodacom Tanzania's mobile money distribution network

As is often the case in the early days of a mobile money deployment, Vodacom Tanzania found that many of its agents were not maintaining sufficient balances of electronic value and cash to serve customers. One cause, they discovered, was that – because of the slow speed with which banks in Tanzania settle account-to-account transfers – it could take agents several days to replenish their balance of electronic value. Agents would transfer money to their masteragent, but their masteragent would have to wait for that transfer to clear before converting it into electronic value – by means of another bank transfer, this time to Vodacom Tanzania – which could then be passed back to the agent. Vodacom Tanzania

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decided to accelerate this process by setting up a line of credit, denominated in electronic value, for masteragents. Under this system, masteragents can draw on this pool of interest-free electronic value to replenish the stock of agents as soon as they are satisfied (with a deposit slip, for example) that the agent has transferred value to their account. They repay the loan once they have converted the agent's cash into electronic value.

Key learnings to date

Perhaps the most important insight to emerge from Vodacom Tanzania's experience is that masteragents (which Vodacom Tanzania call aggregators, because they are also responsible for recruiting new agents) can be a source of credit in the mobile money distribution system. Vodacom Tanzania's management got the idea for a line of credit by observing that some masteragents were themselves extending short-term credit to their agents, much as a Unilever distributor might extend short-term trade credit to trusted shop-keepers. This can be a key financing mechanism for agents who find it difficult to raise the working capital necessary to invest in cash and electronic value float.

Vodacom Tanzania realised that masteragents are much better positioned to evaluate the creditworthiness of agents, since they have direct relationships with them and understand their cash flows, than Vodacom Tanzania itself would be. This is why Vodacom Tanzania has put its masteragents in charge of extending credit to individual agents, while holding masteragents themselves responsible for repayment. Vodacom Tanzania have designed the system to guard against default risk; an analyst is responsible for tracking masteragents' use of the credit facility, and ensuring that repayments are made according to agreed terms. (This tracking is made possible because the line of credit is denominated in electronic value.)

It is not clear whether this kind of line of credit, offered by operators, should be taken up in other markets. The cash-to-electronic-value conversion process is quicker in many countries, making a line of short-term credit like this one less useful. But Vodacom Tanzania's experience does highlight that judicious use of credit is one of the tools that masteragents can use to manage their agents' liquidity, which in turn points to the value that masteragents can create in mobile money deployments. Even in markets where the operator does not itself provide credit, there are other sources (banks, microfinance institutions) of credit to which masteragents and agents themselves can apply. And it should be noted that in all of these scenarios, no credit risk is borne by customers; their money in the system is always safe.

MTN Uganda's field registration agents

MTN Uganda is driving customer sign-ups to its MobileMoney platform by using hundreds of dedicated customer acquisition agents. These agents circulate in markets and go door-to-door, educating customers, performing SIM swaps, and undertaking KYC checks. Agents are paid a commission for each customer that they sign up. So far, 750,000 customers have been acquired in this way.

Key learnings to date

Field registration is a quick way to drive sign-ups, but not necessarily usage. Active rates (that is, the percentage of registered users who actually transact on a mobile money platform) tend to be low in deployments that make aggressive use of field registration agents. This may be because users struggle to find a cash-in/cash-out agent after they've been signed up by a registration agent. Or it may be that registration agents are signing up users with a low demand for mobile money services. In either case, since inactive users generate no revenues, only costs (chiefly, the commission paid to the registration agent), they put a strain on the mobile money business model. In Uganda, MTN is planning a major above-the-line marketing campaign for the coming months that is being designed to encourage registered users to start using MobileMoney.

When they are employed, customer registration agents should be paid on a variable basis, to ensure that they are rewarded for signing up new customers. But those commissions should add up to a decent wage (relative to other employment options in the local labour market) for talented agents; otherwise, they will churn, forcing the operator to write off all investment in the recruitment and training of that agent.

For more about MTN's use of field registration agents in Uganda, see "Building a Network of Mobile Money Agents" elsewhere in this Annual Report.

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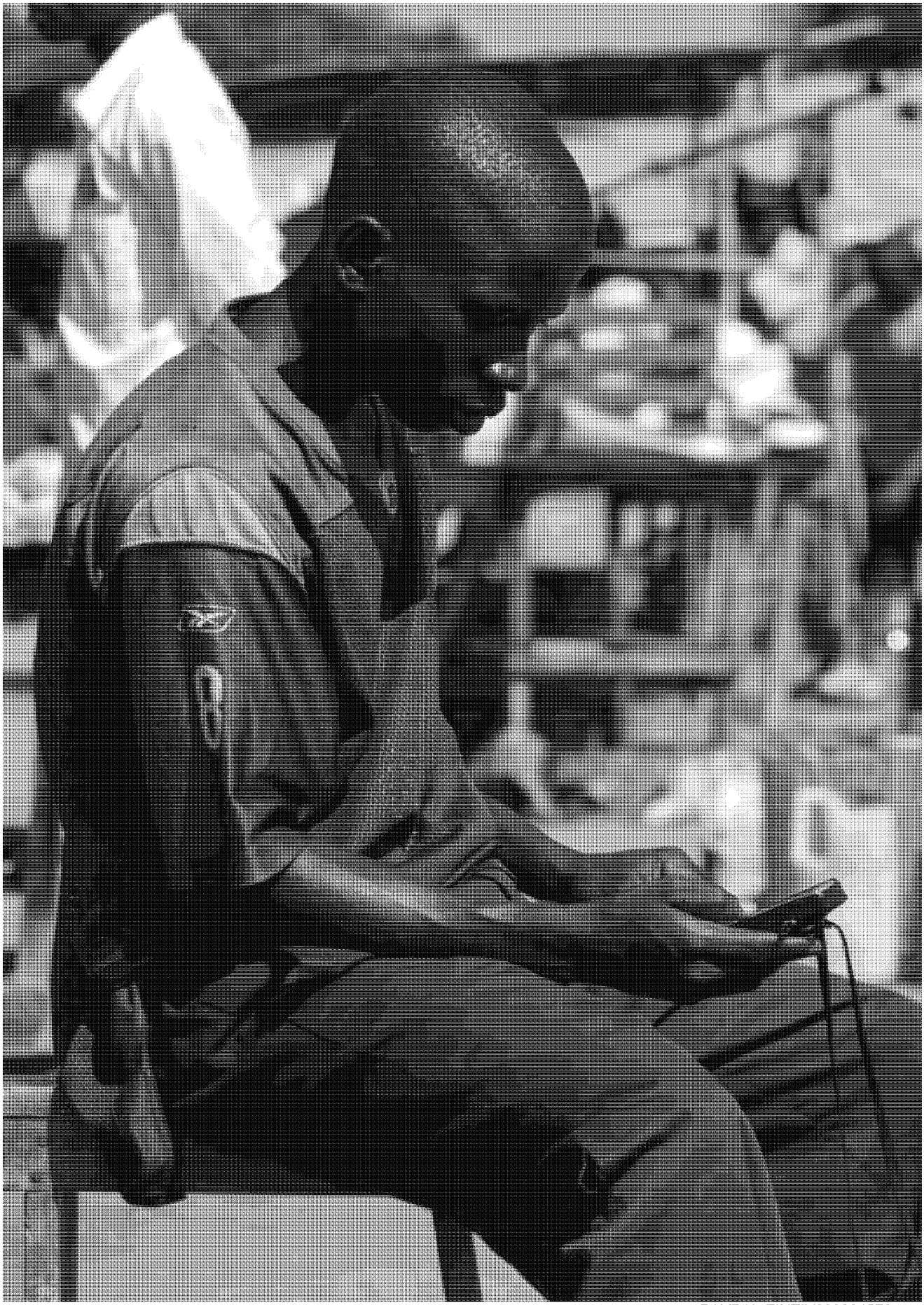

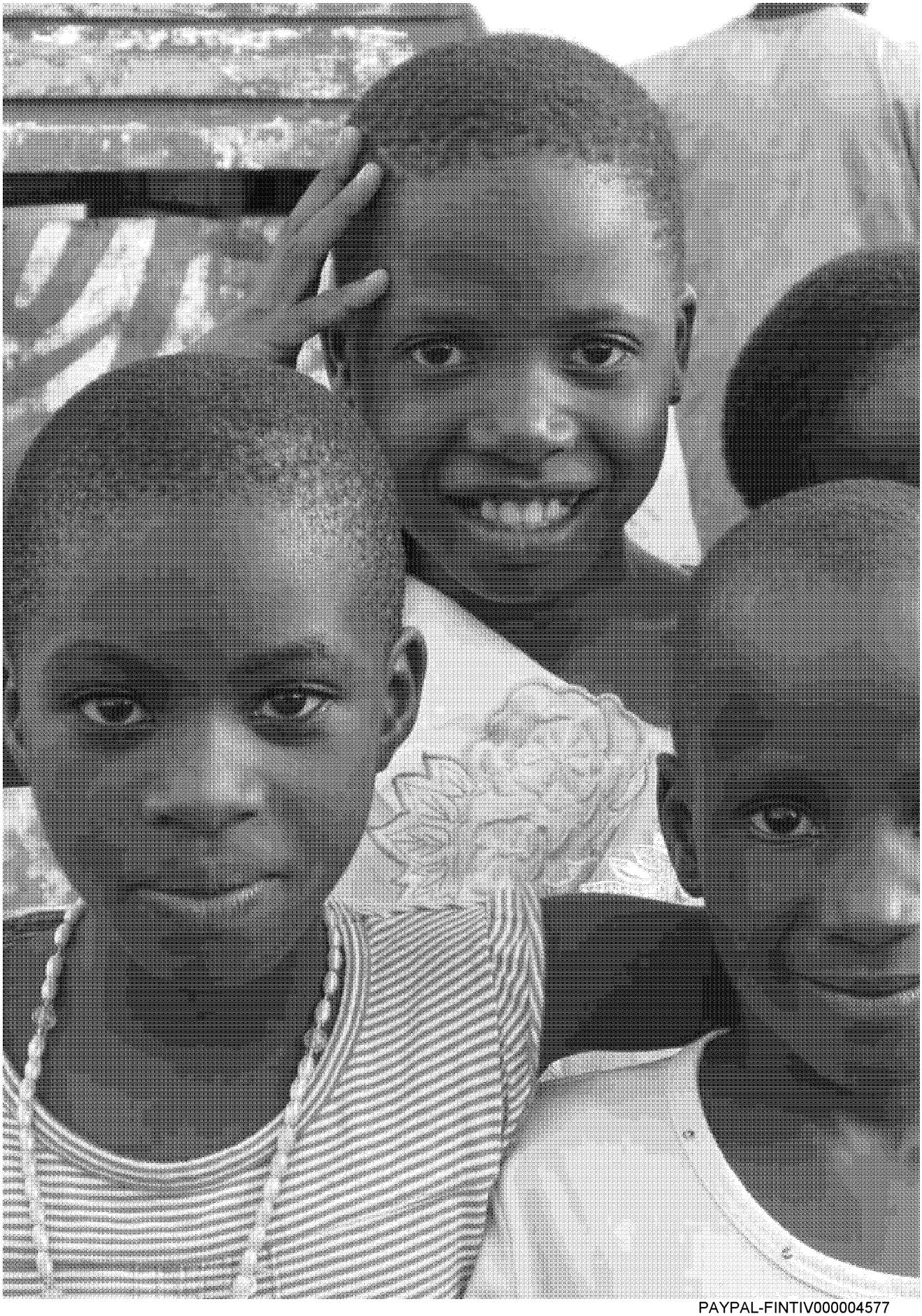

1 Regulation

1.1 Methodology for Assessing Money Laundering and Terrorist Financing Risks

Andrew Zerzan and Marina Solin[1]

Introduction
Mobile money services are emerging all over the world and financial regulators are unfamiliar with the money laundering and terrorist financing (ML/TF) risks arising from these new services. The current anti-money laundering and combating the financing of terrorism (AML/CFT) rules are often applied disproportionately to the risks involved, thus hampering the adoption of mobile money services amongst consumers, the poor in particular. It is, for example, disproportionate to put a high customer due diligence burden on very poor customers who are transacting only very low amounts. Excessively strict 'know your customer' (KYC) rules can be impossible for the poor to comply with, keeping them locked into the informal economy where the risks of ML/TF are not controlled.

Proportionate rules ensure that AML/CFT rules are effective and that the benefits of mobile money services reach large parts of the unbanked population.

In the context of MMU, we believe that the time is right for a global discussion on how to apply rules aimed at preventing ML/TF through mobile money services proportionately. It is also important at the same time that regulators and industry alike develop as much awareness as possible about ML/TF risks at this early stage of service deployments so that any future risks can be anticipated and mitigated effectively.

We have therefore published a 'Methodology for Assessing Money Laundering and Terrorist Financing Risks' which is based on the existing framework of Financial Action Task Force (FATF) recommendations and which can be found on http://www.mmublog.org.

In this Annual Report we have summarised the document for non-experts and we hope to inform the ongoing global AML/CFT debates[2].

1 Approach
Our risk-assessment methodology is intended to provide regulators and industry with a flexible and consistent means of assessing and mitigating the risk of ML/TF in mobile money services. We believe this same general approach to assessing risk can be used for any payment service. Our intention was to make it a fair method of assessing ML/TF risks regardless of the service in question.

1.1 Universal Principles for AML/CFT Regulation and Mobile Money
There are some general principles in the field of mobile money (and in new payment technologies in general). We believe that these principles need to be taken into account for AML/CFT regulation to be effective.

[1] We thank Thaer Sabri from Flawless Money for contributing to this paper www.flawlessmoney.com
[2] This is a summary of the discussion paper which proposed a risk assessment methodology based on the principles laid out in the existing framework of Financial Action Task Force (FATF) recommendations. The paper itself has a more in-depth analysis of these issues in the text and a broader set of annexes including:
- a compliance chart of the specifically relevant FATF recommendations to mobile money;
- a study on identification infrastructure in developing countries;
- a glossary of terms related to mobile money

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Principles for effective AML/CFT regulation

- Regulation should be risk-based and technology-neutral, i.e. 'same risk, same regulation' for every institution.
- When assessing the risk and its mitigation, it is critical that the positive effect of mobile money to promote financial inclusion is taken into account. Expanding the formal financial sector and shrinking the informal economy directly lowers ML/TF risks.
- The digital and traceable nature of mobile money makes it a lower ML/TF risk than cash.
- Mobile money services should be a regulated activity under the supervision of a financial regulatory authority.
- Proportionate AML/CFT regulation should emerge from close cooperation between financial regulators and industry. Using a collaborative 'test & learn' approach, risks of new services can be systematically assessed before deciding on the appropriate and most effective risk-mitigation measures.

2 Characteristics of mobile money

When undertaking a risk assessment, it is important to understand key characteristics of mobile money services. This includes three main areas: what are the services, how are they used in practice and what environment they run in.

First, it must be recognised that there are many kinds of mobile money services. Understanding what products are actually being offered is key to identifying their vulnerability to abuse. Services can vary greatly depending on the needs of a particular market. They range from informational services, such as stock quotes and bank balance information to domestic money transfers, international remittances, bill payments, retail purchases and many more.

Secondly, regulators have to understand how customers use the services. Demand in developing countries for low value transactions is typically much higher than that for high value transactions for example. Frequency of use and how funds are usually put into or withdrawn from the system are also relevant.

Lastly, the overall environment - such as geographic considerations and infrastructural issues such as the prevalence of identity documentation - is a factor that also determines the risk potential.

3 Risk assessment methodology

There is already some useful literature from the World Bank and CGAP which provides a broad overview of AML/CFT issues in mobile money services[3].

The purpose of the risk assessment methodology in this paper is to provide a proposal for a methodology describing how to analyse ML/TF risks in a systematic way. This gives regulators and industry a practical tool to assess risks and therefore the ability to choose proportionate risk-mitigation responses.

In order to develop this risk assessment methodology we need to assess:

- The vulnerabilities of mobile money services to ML/TF
- How these vulnerabilities are likely to be exploited by money launderers and terrorists
- What the appropriate tools are to mitigate the identified risks

3.1 How are mobile money services vulnerable to ML/TF risks?

Every payment system has some vulnerability that could facilitate ML/TF. In markets with the highest demand for (and success of) mobile money services cash transactions are the predominant transaction type.

We, therefore, first compare the generic vulnerability of cash and mobile transactions based on the World Bank's risk factors of anonymity, elusiveness, rapidity and lack of oversight[4].

[3] See CGAP Focus Notes paper 56 of August 2009: 'AML/CFT: Strengthening Financial Inclusion and Integrity.' Jennifer Isern and Louis de Koker.
[4] Chatain, Pierre; Raul Hernandez-Coss, Kamil Borowik and Andrew Zerzan. Integrity in Mobile Phone Financial Services. World Bank 2008.

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Comparative risks of mobile money if no AML/CFT controls are in place

General risk factors	Cash	Mobile money
Anonymity	***	**
Elusiveness (untraceable transactions)	***	**
Rapidity	*	***
Lack of oversight	***	*[5]

*** indicates risk is highly prevalent
** indicates risk is somewhat prevalent
* indicates risk is low

Anonymity: Even in the worst-case scenario where a mobile customer is not registered with the mobile operator, transactions are less anonymous than with cash, since they can be linked to a unique mobile number and transactions (sender's mobile number, amount, receiver's mobile number, date) are recorded and traceable. This differs from cash where there is neither a unique identifier for the user nor a recorded trace of the payment. In addition, countries are increasingly requiring face-to-face registration with proof of address for the purchase of a SIM card.

Elusiveness: Whilst cash transactions are elusive, mobile money transactions are clearly traceable in the systems of mobile operators as part of usual business practice. Telephone number (sending and receiving), time and the amount of the transaction are known to the mobile operator.

Rapidity: Over a distance[6] the electronic character of mobile technology can make transactions much more rapid and effortless than cash. Rapidity is therefore a bigger risk factor for mobile money services than for cash. In the case where there are no automated internal controls, this can provide efficient means for criminals to launder money and fund terrorist activities.

Lack of oversight: Whilst the cash economy lacks oversight, a mobile operator offering mobile money services is usually regulated, either indirectly through a partnership with a bank (financial regulators have therefore oversight of the bank's mobile money activity within the partnership) or directly through becoming a licence holder for payments or e-money.

In summary, we believe that with the exception of rapidity, the vulnerability for ML/TF is greater for cash than for mobile money services. Given that mobile money services are mainly deployed in developing countries/cash economies, mobile money services a priori are an improvement in terms of AML/CTF activity compared to cash.

However, there are still vulnerabilities that criminals might exploit if left unchecked. We will cover these in the next section.

3.2 How could criminals and terrorists exploit these vulnerabilities?

Now that we have identified overall vulnerabilities of mobile money systems, we can apply known ML/TF typologies to test the attractiveness these systems will offer for criminal purposes. Typologies are typical criminal schemes that have been associated with a particular financial service. They assist practitioners in detecting abuse and regulators in assessing the robustness of the provider's systems. In the context of the methodology, they provide an effective way of measuring the degree of risk posed by a payment service and where mitigation measures will be needed.

Because there are very few cases of ML and so far no known cases of TF through mobile money, we will apply typologies used in retail payments and other new payment systems[7]. These have provided much useful information that can be used for this analysis.

ML/TF typologies exist at all three stages of a transaction. (1) loading funds into the account, (2) transferring those funds and (3) withdrawing them. They are then set out in terms of opportunities for ML or TF that arise for the different participants in the scheme: consumers, merchants, and partner agents.

Using the four vulnerabilities outlined in the previous section, we can demonstrate how they can facilitate criminal strategies to abuse the system for ML or TF.

Loading. Perhaps the most obvious typology applicable to this stage is that of loading illicit monies into the system (also known as the "placement" phase of money laundering).This can be for several reasons, one of which is to continue the process of smurfing, whereby criminals hide the true value of what is being loaded by dividing it into small batches that are more likely to go undetected.

[5] MNOs offering mobile payments have to be licensed by the financial regulator, because offering mobile money is a regulated activity. In some cases MNOs enter into partnerships with banks who have the regulatory approval to offer mobile payment services. In some cases mobile operators become authorised by the Central Bank independently of banks through a payments or e-money license. However, we assume that mobile payments are always supervised by financial regulators or not permitted.

[6] In a face-to-face context the handover of cash can still remain as rapid and efficient as electronic technology (and less traceable)

[7] Common issues shared by such services are set out in FATF: "Report on new Payment methods" of 13 October 2006; FATF "Money Laundering and Terrorist Financing Vulnerabilities of Commercial Websites and Internet Payment Systems" of 18 June 2008.

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General risk factors	Sample exploitation of vulnerabilities at each stage		
	Loading	Transferring	Withdrawing
Anonymity	Multiple accounts can be opened which may prevent the system to properly profile a customer for risk.	Suspicious names cannot be flagged by systems, making it a safe-zone for known criminals and terrorists.	Allows for cashing out of illicit or terrorist-linked funds.
Elusiveness	Criminals can smurf proceeds of criminal activity into multiple accounts.	Criminals can perform multiple transactions to confuse the money trail and true origin of funds.	Smurfed funds from multiple accounts can be withdrawn at the same time.
Rapidity	Illegal monies can be quickly deposited and transferred out to another account.	Transactions occur in real time, making little time to stop it if suspicion of terrorist financing or laundering.	Criminal money can be moved through the system rapidly and withdrawn from another account.
Lack of oversight	Without proper oversight, services can pose a systemic risk.		

Transferring. Payment services can be abused through "layering". Layering is where criminals perform multiple transactions to complicate the money trail, making it harder to trace.

Withdrawing. Perhaps as a continuation of the layering process or as a way to integrate funds of illicit origins, criminals could find the withdrawal stage useful. The rapid movement of funds, coupled with anonymity, from their initial loading to ultimate withdrawal could be used to facilitate either ML or TF.

However, looking at potential ways criminals can abuse the system should not be limited solely to the different stages of the payment system. It is also necessary to identify typologies based on the different stakeholders involved. The following is a summary list of stakeholders and the potential threat they can pose to the system.

ML/TF typologies based on stakeholders involved	
ML/TF by consumers	Can take place as part of a conventional transfer of funds that originate in crime or are intended for a crime (such as terrorist financing)[8]. Whilst real credentials may be used at registration, false information can also be presented. It is also possible to use the funding stage to introduce fraudulent value by using stolen credit or debit cards. (This could be regarded as a placement process). Transactions can also be used to move funds amongst co-conspirators, or to move them cross border to jurisdictions where AML/CFT regulation may be less onerous or where the funds can be used to fund further crime. This is then combined with the redemption of such funds as cash, and their extraction for use or onward transfer by other means.
ML/TF by merchants	Merchants may provide a greater risk, as they can receive substantial volumes of payments and extract these as the legitimate product of business (this can comprise integration of funds). Merchants may be fraudulent themselves, defrauding their customers, or may be fronts for the laundering of proceeds of crime from co-conspirators, who can pose as consumers.
ML/TF by agents, intermediaries and retail partners	These persons occupy a sensitive position in the payment cycle of mobile money services: they enable the loading of cash payments, they perform pay-outs, and also are the sellers of the handsets themselves which can be used to make payments. Such persons are therefore in a position to falsify records, ignore suspicious transactions that may otherwise be reported, or they can simply be a point of weakness where they do not perform their roles in a diligent manner.
ML/TF through cross border payments	Can enable criminal funds to be moved from the jurisdiction where they are created to another where they may be used to further crime, or be extracted, or be moved once again to another jurisdiction. Movement across borders hinders law enforcement investigators and may mask the purpose of the transfer. It is therefore an additional source of risk.
New typologies	As criminals continue to develop new ways to finance terrorism and launder money, it is important to note that these typologies are not comprehensive.

[8] FATF, Terrorist Financing Typologies Report 2008

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3.3 How to mitigate identified risks

After identifying potential vulnerabilities (section 3.1) and ML/TF threats (section 3.2) to the system, control measures can be implemented to mitigate the risks.

Risk mitigating measures	
ML/TF by consumers	Can be mitigated with a few simple controls in place. The key mitigation measures can be highlighted in light of the environments in which these services are offered. The first is limits on accounts, transaction frequencies, volumes and amounts transferred within a certain time period. This may be effective if the transaction amounts and volumes are very low. The second is monitoring of transaction flows on the system level, which alerts the mobile money provider about suspicious transaction patterns (similar to ML/TF systems currently used by banks and the fraud systems used by mobile operators). These measures reinforce each other, because limits force criminals and terrorists to split up the transaction into many smaller ones, which would risk detection by the monitoring system. If customers transact high volumes and with a high frequency, which poses a high ML/TF risk, they can be obliged to register face-to-face and become fully identified. The important notion here is to apply risk mitigation tools which are proportionate to the risks.
ML/TF by merchants	Mitigation by way of enhanced initial and ongoing due diligence can, decrease this risk to low. In addition, raising awareness is key: agents care about the viability of their business, so knowledge of how crime can hurt will reduce their likelihood to participate in it. Other methods to assess and minimise risks are training, testing and 'mystery shopping'.
ML/TF by agents, intermediaries and retail partners	This risk can be mitigated through enhanced initial and ongoing due diligence and monitoring for compliance with obligations. For instance, providers can assess compliance and integrity of their agents through the use of 'mystery shoppers' that test agents, they can require agents and retail partners to train front line associates in AML/CFT and provide assistance with and monitoring of that training, and, by monitoring activity on an agent location basis, they can identify unusual activity and investigate and take corrective action.
ML/TF through cross border payments	Transaction-monitoring tools, limits on value and frequency of transactions combined with proportionate customer due diligence can enable unusual and suspicious transactions to be identified, thus mitigating this risk to a low level.

The above analysis assumes a risk-sensitive approach. Due diligence and other controls must be applied proportionately to the risks posed by various stakeholders. In the case of consumers with low transaction limits and real-time monitoring systems, the risks would tend to be low. However, merchants and agents pose a greater risk because some controls (i.e. limits) cannot be applied to them in the same way. They require enhanced due diligence processes, training and monitoring.

3.4 Comparative risks of mobile money and cash, before and after controls are applied

Linking the implementation of the above-mentioned control measures to our initial analysis of comparing mobile payments to cash, general conclusions can now be drawn about the risks. The chart below is an evolution from section 3.1. It shows sample controls and their mitigating effects on risk.

Implementation of control measures renders the system less attractive to criminal interests. Transactions are necessarily small because of limits, so any attempt to move large sums of money from one location to another would be flagged. The rapidity risk, which was seen as higher than cash before controls were in place, is now lower because of automated internal controls (internal controls enforce limits on transactions, account balance and volume of transactions and even if the ML/TF transactions are broken down to fit within the limits, the monitoring system would be able to detect suspicious transaction patterns on the system level). Customer names can be screened quickly against national and international sanctions lists and flagged automatically. It is interesting to note that this is in many ways more efficient than common financial service providers in developing countries where such screening is often manual and subject to human error.

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General risk factors	Cash	Mobile money		
		Before	Controls	After
Anonymity	***	**	Customers profile buildings, includes registration info (name, unique phone number, etc)	*
Elusiveness	***	**	Limits on transaction amount, account balance, frequency and number of transactions Real-time monitoring	*
Rapidity	*	***	Real-time monitoring Frequency restrictions on transactions Restrictions on transaction amount and total account turnover in a given period	*
Lack of oversight	***	*		*

3.5 What's Next: Proportionate Regulatory Response

After a provider has designed a service and developed controls to mitigate the risks, regulation should be created that fills any outstanding gaps. For instance, one of the greatest concerns in many developing countries is the lack of identity documentation. Poor people, for a number of reasons, are without evidence of their identity and are thus prevented from participating in the formal economy. Simply requiring a high level of identity verification for all customers, regardless of the risk they pose, just keeps the poor from the formal economy without reducing crime. The requirements for identity verification, also called know-your-customer (KYC) obligations, must be proportionally implemented.

This brings us to the last and final stage of the methodology: proportionate regulatory responses to AML/CFT risks. Several countries have already implemented such solutions. Since limits on customer activity as well as account monitoring can make services useful to legitimate customers but not to criminals, thus lowering the risk of fraud.

The appropriateness of the actual daily/monthly transfer limits as well as balance limits may depend on the risks of the service and on the customer group. In addition, different transaction limits may be appropriate in different markets. However, the underlying principle of low transaction sizes that are monitored for potential abuse constitute low risk[9] and should be less onerously regulated than higher transaction sizes which constitute higher risk, is what is key for a proportionate regulatory solution.

South Africa: a proportionate risk-based approach to KYC

A customer in South Africa can register for a mobile money service by opening and using a bank account with their mobile phone. Although all account activity is recorded and monitored for suspicious behaviour, there is no need to go to a bank branch for in-person identity verification. Customers doing this must provide a valid South African identity number and observe the following limits on their accounts:

- daily transfer limit of 1,000 Rand (~ US$140)
- monthly transfer limit of 10,000 Rand (~ US$1,400)
- maximum balance of 25,000 Rand (~ US$3,500)

This approach is proportionate to the level of risk because the identification requirements become more onerous as the transaction size increases. For example, if the customer wishes to reach a higher level of activity, he must provide identification to an agent for face-to-face KYC. This will allow transactions up to 25,000 Rand (~ US$3,500) and a daily transfer limit of 5,000 Rand (~ US$700) with the same monthly limit.

Should there be a need to transact beyond this level, a full identification and proof of address has to be provided in person to a bank representative. As the service becomes riskier, so do the customer due diligence procedures.

[9] Assuming there are no other risk factors such as geography (area with terroristic activities) for example, which would make this statement invalid.

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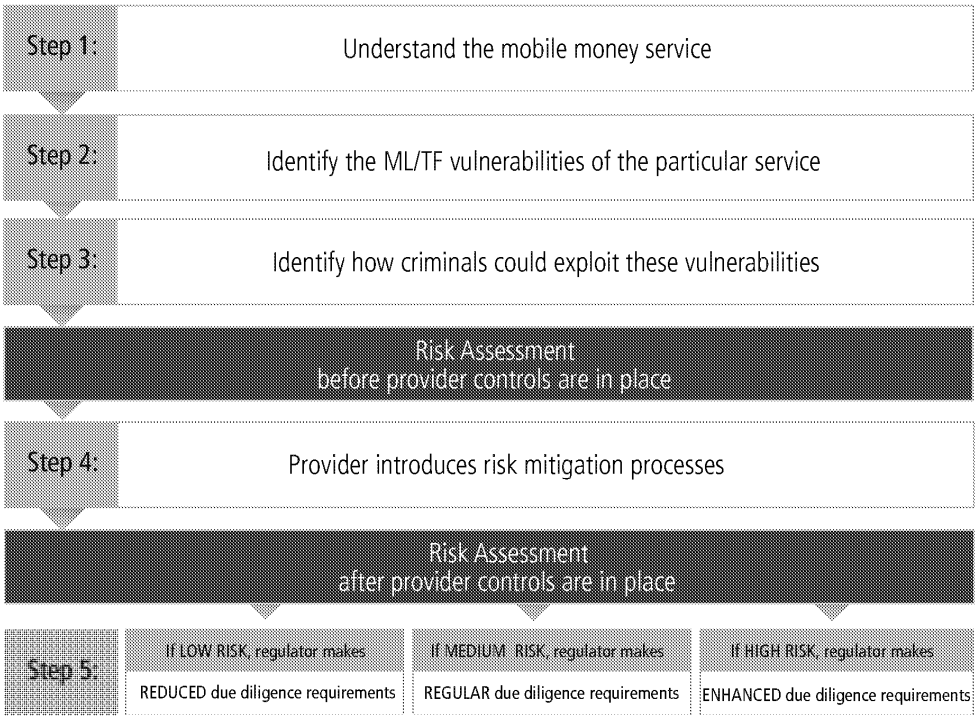
4 Conclusions from the Risk Review

Assessing the actual risk that mobile money poses is critical to designing controls that (1) effectively target the threat faced and (2) do not unnecessarily prevent the poor from accessing this financial service. AML/CFT and financial inclusion are mutually reinforcing goals. AML/CFT ends where the informal cash economy begins. Cash is untraceable, anonymous and its use cannot be monitored. The expansion of mobile money services is an exciting opportunity to reduce the cash economy, making the market safe while simultaneously improving the lives of the poor.

We hope that this methodology contributes to the discussion between industry and regulators in developing business models and regulations that maximise the reach of mobile money. We believe it is only through a careful analysis of the actual risks posed that appropriate proportionate regulation and controls can be developed and we remain ready to support efforts in the future.



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Annex: Frequently Asked Questions

Question/Concern	Answer
Would it be possible for a criminal laundering money to use a phone once and then dispose of it to keep anonymous?	A criminal has the choice to launder money through a variety of means: cash, cards, mobile, etc. Cash would be far more attractive as it is completely anonymous. Mobile money payments, on the other hand, are completely traceable. Even if the criminal decides to transfer money with mobile money, security limits on transaction volume and size as well on account balance would make it very cumbersome and expensive for a criminal to buy many phones and SIM cards. The monitoring system could flag such an activity as a suspicious transaction. And whilst the sender can change the phone/SIM card, the system would record the receiving account, unless those numbers and SIM cards are disposed of after each transaction as well. However, in this case, delivery of cash may be cheaper, safer and more convenient for the criminal than buying large numbers of mobile phones and SIM cards given that only small numbers of low-value payments are possible. More and more countries – Bangladesh, South Africa, Tanzania, etc. – are introducing prepaid registration of mobile phones, which requires a mobile-phone owner to register by showing identity documentation. In these countries, it is impossible to buy a SIM card without identification (including face-to-face identification and proof of address).
What happens if another person uses the phone instead of the registered user?	The registered user has to disclose a PIN to the unregistered user in order to make a mobile money payment possible. This is equivalent to existing risks in card payments (ie. where the card owner has to pass on his PIN to make the card payment possible). The registered user is traceable and ultimately responsible.
What if the user is not registered?	A user who is not registered should have more strict limits imposed on his account and the functionality of the mobile money service than a user who is registered. This reduced the service's attractiveness to criminals.
Phone 'lending' is a risk that is new and makes mobile money high risk. How can one ever be confident of the identity of the user of a phone when the registered user lends it out?	Generally, to access a mobile wallet, one must have the password/PIN. This is the same with ATMs or internet banking. As such, the risk is equivalent to ATMs and internet banking. Furthermore, with limits in place, it would seem overly burdensome to launder through borrowing many people's phones and passwords instead of using cash.
It is nearly impossible to detect suspicious activity without knowing the identity of the person behind the transaction. Customer Due Diligence is critical for AML/CFT.	Since cash already exists in all economies and is entirely anonymous, it is important to identify what new risk mobile money brings. ML undoubtedly occurs in cash-based economies through untraceable cash. At least through mobile money there are new tools such as monitoring and limits that make it less risky than cash.
Why use mobile money? We should use another channel to expand financial services.	Two of the biggest barriers to financial inclusion are cost and distance. These two are often intertwined because travelling distance to the nearest bank branch or remittance provider requires the user to incur cost. The financial institution also incurs more costs by expanding their bank branches than by expanding their reach through mobile technology. Technology, especially mobile technology, offers an opportunity to overcome these two obstacles. Mobile money services eliminate the need to travel to a financial institution and offer much lower fees. There is no non-technological banking model that has these characteristics.
Since Mobile money services allow remote transactions, are they higher risk than face to face transactions?	Experience to date indicates no greater risk in mobile transactions versus other channels of payment. Very low transaction limits, account monitoring and other controls can be used to mitigate any attractiveness these services have to criminal activity even if they are not face-to-face.

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Question/Concern	Answer
The speed with which value can be moved electronically and the ease of moving SIM cards present risks that are not present in a cash situation. The sheer bulk of cash makes it difficult to launder and transport.	The balance and transaction limits that are in place in most mobile money schemes are very low. You could carry much more cash than transfer electronically given most of these limits. Moreover, monitoring systems can detect unusual patterns. For instance, if one account is receiving an unusual amount of money from all over the country, it would be flagged as suspicious and all accounts sending to it would be as well.
Mobile money services deserve a 'lex specialis'[1] treatment with respect to the prevention of ML/TF	The GSMA strongly objects to such a 'lex specialis' treatment. It is neither reasonable nor practicable for a regulator to treat different players differently. The actual ML/TF risk needs to be assessed and mitigated proportionately. High risk requires more controls while low risk requires less. Mobile operators and other financial institutions need to be treated in the same way according to the ML/TF risks they pose.
The GSMA suggests that identity verification is generally impossible.	The GSMA suggests that full customer due diligence for very poor customers (i.e. who live below $2 per day) who transact very low amounts with a very low frequency (subject to limits build in the services) is disproportionate. This applies to all service providers and not only to mobile operators.
What would a solution, derived using the methodology proposed in this paper, look like?	A customer sending very small amounts infrequently (and subject to transaction monitoring to detect suspicious patterns) may qualify for simplified customer due diligence. The service offered to this customer is limited in its functionality. Once this customer is familiar with the service, develops trust and demands more flexibility for higher transactions, he may then obtain the extension to his service by registering face-to-face. An agent or intermediary, on the other hand, who is transacting larger amounts may not be able to start using the service without full due diligence, because his risk profile is much higher from the start.
While new payment methods often provide transaction records ('electronic paper trail'), these records are rendered useless if the customer remains anonymous or uses a wrong identity.	Even if the customer is anonymous, the electronic paper trail provides still more evidence than is available with cash transactions. Also, the 'electronic paper trail' makes it much easier to detect collaborators. Once law enforcement has reason to investigate the case, the 'electronic paper trail' provides more evidence than a cash environment.

[1] 'lex specialis' is a legal term where certain providers are granted special status, such as exception from existing compliance obligations.

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1.2 Regulatory Questions and Answers on MMU

Introduction
Regulation of mobile money has prompted some recurring questions amongst both regulators and industry. To assist in this discussion, the MMU Programme has designed a "hymn" sheet that provides answers to some of the most confusing questions. We have listed the most typical questions asked by financial regulators in the first column, the answer to the question in the second column and the rationale and background information for the answer in the third column.

Please note that this is an evolving document and if you have additional questions, answers or comments, please contact Andrew Zerzan at azerzan@gsm.org.

We hope this serves to clarify mobile money regulation and facilitates better dialogue between financial regulators and the mobile money industry.

Concern/Question of Financial Regulators	Answer	Rationale/ Background Information
A financial regulator only regulates banks. As mobile money must be regulated, it can only be offered by banks.	Financial authorities oversee the activities of deposit taking institutions which they have a mandate to licence. In most countries, they also oversee other non-deposit taking activities as well. It is possible to create different licences for different financial services. For example, money remitters often operate under payments or money remittance licences. Mobile operators could also offer mobile money under a 'payments licence' or an 'e-money licence' issued by the financial regulator. This ensures that the mobile money provider, regardless of their core business (telecommunications, banking or otherwise) is fully supervised and regulated by the financial authority.	If a mobile operator wants to provide any sort of financial services, such as payments, these services ought to be regulated by the financial regulator. The financial regulator should increase its remit of power to new players by extending the range of licences. These licences bring non-financial institutions under the secure and firm umbrella of the financial regulator if they wish to offer any form of financial services. Whilst the GSMA supports partnerships between mobile operators and banks, these partnerships can sometimes be too limiting, inefficient and prevent innovation if they remain the only choice. There is no reason why the financial regulator cannot regulate a non-bank wishing to provide financial services – provided that a regulatory framework is created for that. An increased choice of providers, business models and mobile money services ultimately benefits the consumer.
It is not clear to me as a financial regulator who should regulate mobile money services, the financial regulator or the telecoms regulator, and how this should be done?	Mobile operators are regulated by the telecoms regulator for their voice and data services. Financial service providers are regulated by the financial services authority. Since mobile money is a financial service it needs to be regulated by the financial regulator. Financial regulators should be empowered to regulate financial services, regardless of the provider's core business. The telecoms regulator is not obliged to understand financial regulation and therefore should not be expected to regulate financial services. There is no need to involve the telecoms regulator in any major way in the process of designing financial regulation.	The telecoms regulators should be fully aware of the developments in mobile money, so that they continue to understand how mobile services and the mobile sector is evolving. However, in the actual detailed regulatory discussion of mobile money, telecoms regulators don't add any value because they don't understand financial risks, business models and financial regulation. Therefore, involving the telecoms regulators in the discussion of the financial regulatory framework is likely to slow down the discussion on mobile money without adding much value.

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Concern/Question of Financial Regulators	Answer	Rationale/ Background Information
Financial services is the business of banks, not mobile operators. Why should a mobile operator offer financial services such as mobile money?	Mobile operators provide a much more limited range of financial services than banks are authorised to offer (i.e. usually just payments, e-money) and they are able to safely offer them with lower cost structures than banks. This benefits mainly the unbanked population, providing them more choice of services at an affordable cost. Banks' systems and processes have to be built for large value and more complex processes which often makes them too expensive for the poorest of people to use them. The provision of mobile money services benefits not only customers but also the operator's core business (i.e. through customer retention). Operators may be willing to effectively subsidise activities that a bank may find unprofitable on a standalone basis. Mobile money is a way of bringing innovative and cheaper services to customers, which traditional banks have been unable to provide. This competition will also offer a better incentive for banks to provide financial services to the unbanked.	Combining the strengths of banks and mobile operators leads to innovation for the benefit of consumers. Already this has been proven in a number of countries where mobile money has been rolled out. Increased competition between banks and non-banks is good for innovation. It also offers more choice for consumers and cheaper services.
What happens if a mobile operator which provides mobile money services goes bankrupt?	Mobile money is held in a trust account at a licensed bank. This means that there is zero solvency risk posed by the mobile operator. Funds would be returned to customers that are equivalent to the value they have cashed-in.	Unlike a bank's business model, the business model of a mobile operator is based on different revenue streams (ARPU[1] uplift, reduction of churn/ increase of market share and transaction fees). Mobile operators don't reinvest customer deposits and therefore are not exposed to credit risk. It is for this reason that they apply for a payment systems or e-money licence (explained later in this table).
Money laundering risks are mitigated in bank accounts. How could a mobile operator possibly monitor activity and report suspicions?	As is the case with any other financial service provider, including banks, remittance providers, etc., mobile money providers can and do monitor and report suspicious activity. The advanced computing power of mobile operators can be used in some cases to more quickly flag suspicious behaviour and produce a more detailed report than more traditional provider types in some countries which rely on paper-based monitoring and screening mechanisms.	There is no reason to separate mobile operators from other financial service providers. If a mobile operator is regulated as a financial institution, they have to comply with AML/CFT regulations. The account monitoring systems put in place for detecting suspicious mobile money transactions can be more advanced than the paper-based systems used in older financial institutions in less developed countries.
Are mobile money agents going to be uncontrolled and defraud customers?	Mobile money providers, whether bank, operator, remittance provider, etc, apply a risk-based approach to engage and manage agents. Agents are carefully screened before assuming their role; for instance, agent business licences are usually verified and criminal records checked. Also, in many countries, agents are trained and tested for compliance with customer protection procedures as well as other regulatory concerns such as AML/ CFT.	Agents are used to distribute a variety of financial services, even those that are not mobile phone based. Mobile money providers of all types have a strong interest in managing reputational risk by ensuring agents are not defrauding customers. Trust in the financial service provider is critical for the service to become popular and profitable. This is true for mobile money as well as for any other financial service.

[1] ARPU means average revenue per user

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Concern/Question of Financial Regulators	Answer	Rationale/ Background Information
How can a customer be protected if he loses his phone?	At least as safe as a bank card, if not more, mobile money is protected by a password or PIN code so losing a phone would not pose a major risk of fraud to the customer. Typically customers are registered with the provider so that they can access their account via their new phone.	Unlike a bank card whose magnetic strip can be copied, mobile money fraud would require both the physical theft of the phone as well as knowledge of the password or PIN. This double-step protection process makes it arguably more secure than other common financial services.
What licences exist globally for financial and non-financial institutions, promoting access to financial services?	**High risk activities:** **Deposit taking licence** – a traditional bank usually operates under a deposit taking licence. This enables a bank to accept deposits (savings) from customers and to reinvest them. Some of the interest earned through reinvestment is passed on to customers as interest and the rest is income for the bank. The relatively high solvency risk (i.e. the risk that the bank goes bankrupt and is unable to repay customers' deposits) posed by this business model is mitigated by the heavy regulatory compliance burden and cost of a banking licence. **Medium risk activities:** **E-money licence** – this licence enables a non-bank or bank to issue e-money when an equivalent value is held in a float and deposited in a bank account. The e-money activity is less risky than deposit taking because the e-money issuer is not allowed to use the money for risky investments or to provide interest to customers. These lower risk requirements are reflected in the licence obligations. **Low risk activities:** **Remittance licences and payment licences** – these licences allow the transfer of money from person to person or to pay for goods and services. Similar to an e-money licence, the solvency risk is even lower because customers' monies are not stored for a long time. The monetary transactions are swift, simple and less risky than e-money and deposit-taking services.	Financial regulators are used to dealing with banking licences. However, these licences and their limitation to traditional banks have been a barrier to innovation within the financial services industry, and have stood in the way of providing access to financial services for many lower income consumers. Licensing non-banks to offer financial services creates more competition and therefore a greater choice of services at cheaper prices. Traditional banks also benefit from a more refined regulatory framework entailing payment licences and e-money licences because it opens up licensing possibilities for them as well. It is very important that licenses vary by the service provided, not the provider type. This allows a fair playing field for all market participants whether bank, MNO or other. This trend of increasing competition for unbanked consumers requires an increasingly sophisticated and proportionate regulatory framework where different services are regulated in such a way that they can thrive and where the risks they pose are mitigated proportionately and effectively. A refined regulatory framework regulating different kinds of services, such as payments, e-money and deposit-taking, is risk-based, non-discriminatory and beneficial for all players (banks and non-banks) serving the financial needs of consumers.
Why should I as a financial regulator start to regulate mobile operators?	Mobile operators are a proven and efficient engine to reach unbanked customers. Regulating mobile operators opens the opportunity for greater innovation around how to increase access to financial services. As new types of financial services providers emerge, regulation that focuses on the actual risks posed by a particular service is more likely to be effective (regardless of who the provider is or what technology is used). Regulation that allows for a risk-based and technologically-neutral approach is likely to be more effective at achieving financial inclusion goals. The approach needed is 'same risk – same regulation' for everybody.	Innovations in the markets and technology have demonstrated the need for many regulators to modify their approach to regulation so that it is proportionate and adaptive. Regulators who refuse to do so will face market stagnation or an inadequate regulatory regime that fails to cover all services and players in the market.

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Concern/Question of Financial Regulators	Answer	Rationale/ Background Information
Money is the business of banks. How is e-money any different?	E-money is monetary value stored on an electronic device. It has a 1:1 relationship to cash. This means that the circulating electronic value is reflected by cash in a float (bank account). This cash has to be invested into low risk highly liquid funds by the e-money issuer. That means that all the cash is available if all consumers retrieve the money at the same time. **Central to the definition of e-money is that the provider holds zero solvency risk.**	The answer describes the essence of e-money. It is key to stress that the risks are much lower than of deposit-taking. A traditional bank uses customers' funds very differently than an e-money issuer does. Unlike a bank, the e-money issuer is not able to invest the float into risky, high yield investments. This creates lower risks for consumers. It is therefore reflected in different regulatory compliance requirements for e-money issuers (lower regulatory burden) and deposit-taking institutions (higher regulatory burden). However, both kinds of institutions are regulated under the financial regulator in order to mitigate the respective risks of these activities.
Payment flows cannot leave the banking system so they cannot be managed by a mobile operator.	In cases where a non-bank provides mobile money services, the provider stores money in an account that is pooled in a bank account of a licensed bank. This means that the money is still within the banking system.	Because mobile providers do not seek to make money on the storage of money itself (i.e. they are not technically deposit taking) they do not reinvest money elsewhere. The funds kept are put in a trust account held at a bank. This keeps the flow of money still linked to the banking system even though individual customer accounts may be managed by the mobile provider.
What constitutes a "good mobile money regulatory framework"?	A good mobile money regulatory framework looks at the different risks which the mobile money service poses (risks for the financial system, the service provider and the consumer) and mitigates them in a proportionate way. As an example, in a good regulatory mobile money framework, there are different classes of licences which mitigate different risk levels: ▪ payments licence (low prudential risk) ▪ e-money licence (medium prudential risk) ▪ banking licences (high prudential risk) Anybody providing these services is regulated more precisely according to the risks these services pose.	A 'good mobile money regulation framework' adheres to the following principles: ▪ **Consumers have to be protected** whilst at the same time they can benefit from competition which leads to more choice of mobile money services and cheaper prices ▪ The regulatory framework is **technologically neutral**; it allows for technology to evolve as long as risks are mitigated ▪ The **framework regulates the 'service' and not the 'service provider'**. The rules ensuring the given risks are mitigated are valid for everybody, who is offering the service. There is a level playing field between banks and non-banks with regard to compliance rules. ▪ The rules are **proportionate to the risks involved**. The framework regulates the risk of the service. This enables identifying different risk levels for varying service categories. ▪ The framework thinks about the characteristics of mobile services and the needs of customers of mobile services and allows for a **'mobile experience'** ▪ Whilst the rules are primarily aimed at ensuring that risks are mitigated, they should also **ensure competition**. Competition promotes innovation and investments, which result in better choice of services at cheaper prices for consumers.

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Concern/Question of Financial Regulators	Answer	Rationale/ Background Information
Does an e-money issuer increase money supply?	**Mobile operators offering e-money do not create money** because they do not use the funds to make loans or investments. Customers' money is kept secure in a trust account in a licensed bank. However, the bank holding the float of the mobile money operator (or of any other person depositing money in a bank account) does create money through loans or investments it makes with the deposits. This has the effect of increasing money supply. It is positive if e-money stimulates the production of goods and services that would otherwise not occur – because existing means of payment are too inconvenient, insecure or costly to make the production worthwhile.[2]	The following criteria ensure that the mobile money service provider does not create money, while also protecting the individual customer. ■ There has to be a **1:1 ratio** between outstanding e-money and equivalent funds (float) in a bank account ■ Customers' money is redeemable on demand, even if all customers withdraw their money at once ■ Any debit in the electronic value circulating within the system has to be matched by a corresponding debit (of real funds) in the account at a regulated bank. The mobile money service provider can only withdraw funds, when matched by a destruction of electronic value circulating within the system.
What is the difference between a 'bank-led' and 'mobile-led' model?	Although this binary approach is overly simplistic, we attempt here to define them: The bank-led model usually describes a model where the bank offers traditional services and the mobile channel is used to deliver these services. The mobile-led model usually describes a model where the mobile operator has become a regulated financial service provider themselves, i.e. via an e-money licence from the financial regulator.	The terms 'mobile-led' and 'bank-led' create unnecessary antagonism, which is too simplistic and not helpful. In reality, there are countless variations of models where banks and mobile operators operate within a partnership. Financial regulators should not focus on just one specific model; consumers will benefit from a wide range of service choices.
Since mobile transactions take place only on a phone, how are records kept and how is a customer able to verify or challenge a transaction?	As is the case with most financial services in developed countries, mobile transaction records are kept electronically. This offers great improvement in some developing countries where financial records are kept partially in a paper-based system.	Paper based systems are slow and often records are not easily accessible. Customers would have to travel to their particular bank branch to access the records. The mobile phone allows them to review their records instantly at their own discretion.
How are customers protected from hacking and unauthorised transactions on their accounts?	Customers are protected with the functionality of the mobile device and the mobile network. **Mobile device:** The mobile phone can give a significant security advantage to the customer, compared to traditional payment systems such as those based on payment cards. This is because the customer has control over the entry of transaction particulars, and secret information such as a PIN, in a device which is difficult to subvert. **Mobile network:** The mobile operator has control over the SIM, which has all the attributes of a bank-issued smart card (strong physical security controls to protect sensitive data, local access controls and cryptographic software). However, a mobile operator is likely to be in need of improving the physical security of their data, i.e. safety improvements on buildings where data is stored.	

[2] For answers regarding the creation of e-money, transaction integrity see Neil McEvoy, Consult Hyperion: Capabilities of mobile operators from the perspective of a financial regulator. Published in Mobile Money for the Unbanked Annual Report 2009

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Concern/Question of Financial Regulators	Answer	Rationale/ Background Information
How are customers informed of the fees and other terms and conditions of their accounts?	Because of the simplicity of the services offered, fees and terms of use are easily posted at agent locations. Research in Kenya demonstrates that the majority of users understand the fee structure.	One of the main selling points of mobile money is the low and simple fee structure. Mobile money providers aim to capitalise on their broad reach to sell low-cost mobile money services. A clear fee structure is critical to succeeding in this as well as protecting the trust of existing and prospective customers.
Without paper records, how are customers protected if the operator's system fails or loses data?	Computer systems in the mobile money system are central to the provider just as much as they are to banks in developed countries. Records are backed up and secured. The fact that records can be backed up in multiple computers in multiple locations makes electronic records safer than paper records which would be overly-costly to copy and store in multiple locations. Furthermore, electronic records can store more information, are more easily retrievable than paper records and are less likely to have inaccuracies which can be caused by handwriting or unclear photocopying.	There is no basis to believe that paper copies are more valuable than electronic copies. Paper copies disintegrate over time and are much more costly to hold. Furthermore, paper copies are more likely to be misread or to be inaccurate. It is for this reason that many countries have already legally recognised electronic records as equal to paper records.
With uneven mobile network coverage, how are customers protected from dropped or duplicate transactions?	Mobile money systems are designed in a way that ensures confirmation is sent to both the customer and the provider's central system so that transaction duplication is impossible.	Customers receive an immediate electronic receipt for any transaction carried out. Duplicate transactions would only be carried out should the customer ignore that receipt. This is the same as with any financial service.
Does the speed of mobile transactions make them overly attractive to criminals and fraudsters who would exploit customers?	To date there is no evidence that criminals prefer this system over any other. In many settings it would seem overly burdensome to abuse the system over other means such as cash. Mobile money providers have a strong reputational interest to protect customers from abuse such as fraud so key players in the system, like agents, receive enhanced due diligence checks. Secondly, the speed of transactions is matched by the speed of monitoring systems which can flag and suspend transactions of a suspicious or illicit nature. The speed of transactions should be seen as a strength of the system rather than a threat.	The electronic character of mobile money transactions means that they are carried out in real time. The fact that they are electronic is very useful to protect the system and customers against criminal abuse. All records are scanned by the system as it processes a transaction, so suspicious patterns would be flagged, possibly more often than in older systems.

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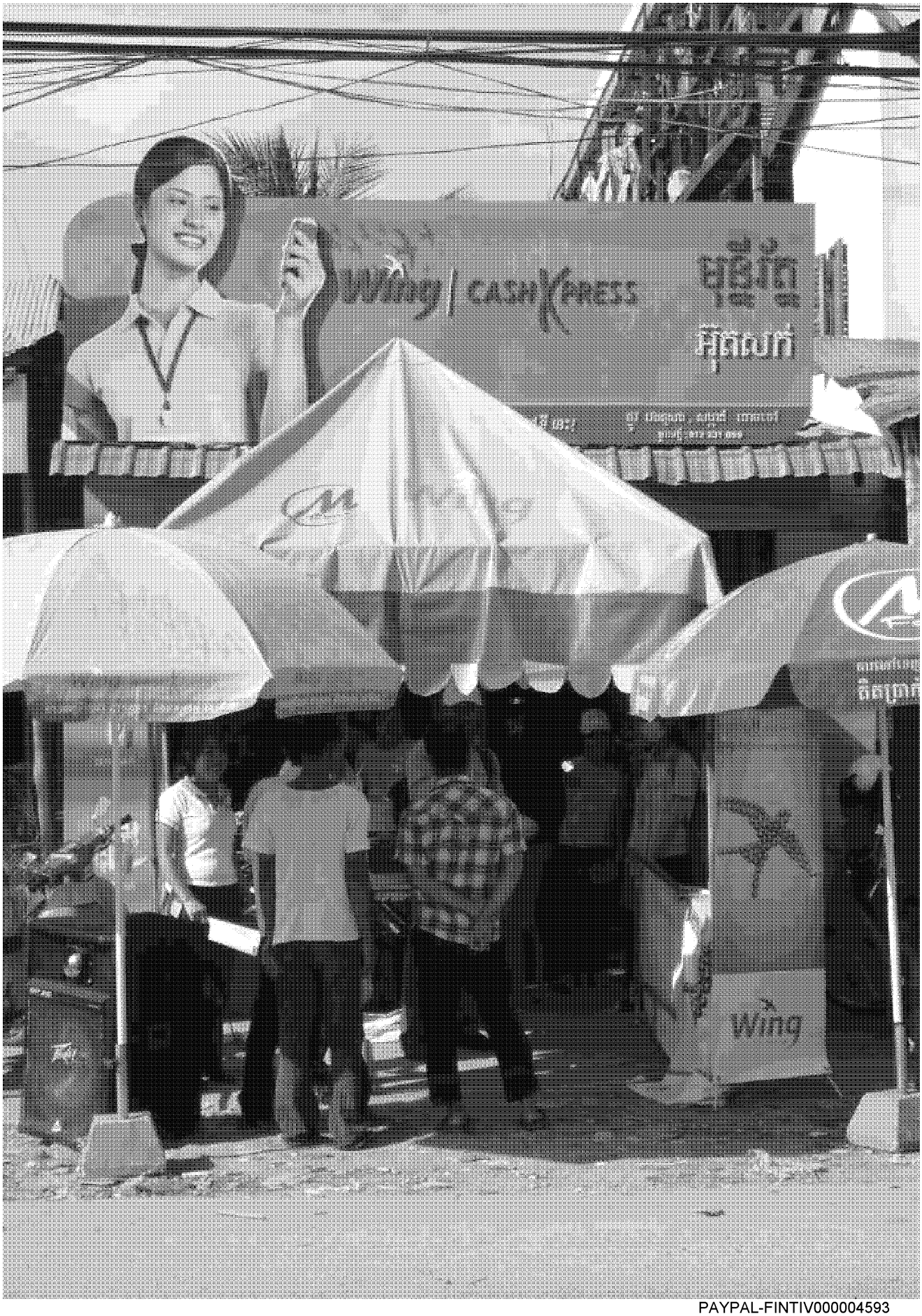
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2 Focus on Agent Networks

2.1 Building,Incentivising and Managing a Network of Mobile Money Agents

Introduction

As mobile network operators around the world are discovering, mobile money is a complicated business. Far more complex than traditional mobile value-added services, mobile money platforms require that operators tackle a host of difficult strategic issues and operational challenges. One of the most difficult of these is the need to put together an agent network.

Why do agent networks matter?

The press likes to claim that mobile money services offer users "a bank in your pocket." But as any practitioner knows, this is not a good metaphor. Although customers can generally conduct some transactions, like initiating a peer-to-peer payment, using their mobile phone, it is only when physically present with an agent that customers can convert cash to e-money and convert e-money to cash. Particularly in the early days of a mobile money deployment, these services will be in high demand. Users will need to sign up and purchase e-money before they can perform any other transactions; moreover, they will often want to convert e-money into cash as soon as they have performed these other transactions because they aren't yet comfortable with storing value in the system.

Less tangibly, but equally importantly, agents are the front-line, human face for an operator's mobile money service. When users have questions, they are as likely to pose them to their local agent as to a call centre. And customers will have questions, given that mobile money is unlike any service they will have used before. Indeed, it is typically agents who teach users how to perform transactions using the mobile phone – even transactions which can be performed without the participation of the agent. Conversely, if an agent makes a mistake, or commits fraud, it may be difficult to for users to distinguish between the agent and the service he represents. For these reasons, building a good agent network is an essential precondition to launching a successful mobile money service.

What does a good agent network look like?

Before sitting down to design a distribution strategy for mobile money, operators can identify the characteristics of a good agent network. In every market, operators and customers alike will want agents that are ubiquitous, trustworthy, low-cost, and liquid.

Ubiquitous

Customers will be more likely to start using a mobile money platform if agents are close at hand. After all, financial inclusion levels are low in many developing countries in part because bank branches are inconvenient to poor people. According to the CGAP-GSMA Mobile Money Market Sizing Study, customers are more likely to be frequent users of mobile money if there is a mobile money agent near their home.

(Note, however, that users' desire for ubiquity must be balanced with the requirement that each agent be adequately compensated for participation. As we discuss in this document, oversaturation of a market with agents means that agents will be unable to perform enough transactions to earn enough commissions to compensate them for their investment in mobile money. As such, a good agent network is grown in proportion to the number of active users.)

Trustworthy

Customers will never use mobile financial services if they do not believe that their money will be safe. Fraudulent financial services, although usually on a small scale, do emerge in developing markets from time to time, leading customers to be skeptical about trusting someone else with their money. Moreover, even if customers have a high degree of trust in the mobile network operator that brands the offering, they will also need to feel comfortable with the local representative of that brand.

Low-cost

Mobile money services are heralded as a way of offering financial services to previously unbanked people. Since poor people do not have large sums of money to deposit or otherwise transact with, the argument goes, it is impossible for traditional bricks and mortar banks to serve them profitably. This implies that the cost structure of a mobile money agent must be dramatically lower than that of a bank if it is to profitably serve poor customers.

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Liquid

One of the main functions of a mobile money agent is to perform cash-in/cash-out transactions which cannot be executed without sufficient reserves of both cash and electronic value. Because both are forms of value, we will refer to both cash liquidity and e-money liquidity in this document. With respect to e-money, however, it is equally valid to think in the terms of traditional distribution channel analysis: agents must maintain inventory of electronic value that is sufficient to preclude stock-outs most of the time.

What is the relationship between mobile money distribution and airtime distribution?

It is widely understood that offering financial services using the mobile channel is significantly less expensive than using bricks and mortar branches because the mobile infrastructure of handsets, base stations, etc. has already been laid. Just as an internet business like Amazon.com would have been economically unviable had the physical infrastructure of cable, routers, and so on not already been in place, so too mobile money is only feasible once the mobile network infrastructure is in place.

When it comes to mobile money, however, mobile network operators arguably have an even more valuable asset than their communications networks. In markets around the world, mobile network operators have developed extensive distribution networks to sell airtime, either in the form of vouchers or electronic top-ups. Although it is often possible to purchase airtime in formal retail channels (supermarkets, etc.), these outlets typically do not offer operators the reach into rural areas (and poorer parts of urban areas) where many of their customers work and live. As such, many mobile network operators have built from scratch distribution networks that can encompass tens of thousands of agents, allowing their product (airtime) to achieve a degree of ubiquity in the marketplace that is often matched only by Coca-Cola – putting airtime, along with Coke, "within an arm's reach of desire."

It is distribution networks like this that the most successful mobile money deployments in the world have leveraged. As such, it makes sense for mobile network operators to seek to leverage at least parts of their existing airtime distribution network when it comes time to build a mobile money agent network. This is because the airtime distribution network has the same characteristics that users and the operator alike value:

- *Ubiquity:* The airtime distribution channel has an extraordinarily reach into even remote parts of most countries.
- *Trustworthiness:* Every day, thousands of customers willingly hand over cash to their local airtime distributor, confident that they will receive airtime in return.
- *Low-cost:* Airtime retailers typically have low or no fixed costs, and, as sole proprietors, do not distinguish between profits and take-home pay.
- *Liquidity:* Airtime resellers already manage airtime and cash liquidity in coordination with their distributors. Moreover, those resellers who engage in other kinds of business are likely to generate significant "cash in the till" from those sales.

However, leveraging this infrastructure for mobile money has turned out to be a formidable challenge. It turns out that many airtime agents (and channel intermediaries, like superdealers) find that the economics of distributing mobile money are less attractive than those of distributing airtime, and so choose to pass on the opportunity. We discuss this dynamic in the second section of this handbook, and describe the other kinds of retail outlets that can serve as mobile money agents instead.

In any case, however, many of the management processes that we describe in this document are different from those which govern airtime distribution. For one thing, agents must maintain two kinds of interrelated inventories, e-value and cash, rather than just one (airtime). This requires more sophisticated liquidity management systems. For another, mobile money is a service that must be offered differently from the way airtime is sold. This requires more intensive training, and oversight, of agents.

For these and other reasons, operators typically need to think about mobile money distribution as a separate challenge from airtime distribution, even though in certain cases they may be able to realise some synergies between the two channels. In practice, nearly every mobile money deployment in the world has embraced some outlets that sell airtime and some that don't as mobile money agents, and we make the assumption that this will be the case for most operators making use of this handbook.

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Building a Network of Mobile Money Agents

Introduction

In this article, we explore the key issues facing operators as they build agent networks to support their mobile money platforms. For easy navigability, we've structured the article as a series of questions, with responses that draw on the experiences of operators around the world. For many questions, it's not yet possible to indicate best practices with certainty, particularly since 'best practice' will likely vary by market on account of features unique to each country. Still, we strive to provide a clear analysis of the merits and drawbacks of various approaches.

We begin by defining the roles that operators assign to agents and how these roles vary across (and sometimes even within) markets; we consider the optimal size of an agent network, both at launch and thereafter; and we discuss what operators should require from agents and on what basis they should select them. We then take a close look at some of the processes that need to be in place to build the network: systems for recruiting agents, processing applications, and training new agents.

What do agents do?

Agents perform three key roles: they register customers, educate them, and facilitate cash-in/cash-out transactions. Agents for M-PESA in Kenya perform all of these functions; in other deployments, these functions are disaggregated and assigned to different classes of agents. These responsibilities can be disaggregated even further – distinguishing agents by the size of the cash-in/cash-out transactions that they are authorised to perform, for example. There are advantages and disadvantages to setting up agent classification systems in which different agents specialise in different things, and operators need to understand these before deciding which model works best for them.

Agent Uniformity: the Safaricom Model

One of the most important characteristics of Safaricom's M-PESA agent network is its homogeneity. That is, while the logo may be painted on each agent's storefront in a slightly different way, every M-PESA agent has the same set of responsibilities and authority and adheres to the same set of guidelines.

This approach works well for three reasons. First, agent uniformity is easy for customers to understand. When a customer sees an M-PESA sign, they correctly assume that they can perform any type of transaction there. Likewise, because every agent displays the exact same M-PESA tariff card with a simple pricing model, customers can easily understand how the service works and what they should be paying for each type of transaction. Second, the consistent customer experience delivered by the uniform M-PESA agent helps foster trust – particularly for customers that are new to formal financial services. And third, integrating the responsibilities of customer registration and cash-in / cash-out makes it easy for customers to start transacting on the platform immediately after signing up.

Agent heterogeneity: when not all agents are the same

Yet many other mobile money providers have decided against agent uniformity, instead assigning different sets of agents different roles or characteristics. For instance, MTN Uganda has two different categories of agents: field registration agents who are tasked simply with signing up new customers, and cash-in/cash-out agents. This represents a departure from the uniform M-PESA model by separating responsibilities into two types of agents.

The agent model chosen by South Africa's Standard Bank Community Banking represents a departure from the M-PESA model too, but in a different way. They have built an agent network composed of different types of agents: small shops, bank branches, bill-payment counters. All of these agents perform cash-in/cash-out, but each category has a different tariff structure.

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	Community retailer	Cell phone	Standard Bank ATM	Standard Bank branch	Other banks ATM	Other retailer POS (MasterCard merchant)	EasyPay retailer
Payment to another Standard Bank mobile banking account	1% with min 50c max R10	1% with min 50c max R10	not applicable	not applicable	not applicable	not applicable	not applicable
Purchase goods from retailer	1% with min 50c max R10	1% with min 50c max R10	not applicable	not applicable	not applicable	R2,25	not applicable
Cash paid into your Standard Bank mobile banking account	1% with min 50c max R10	not applicable	R4,50	R9,00	not applicable	not applicable	R9,00
Cash out	1% with min 50c max R10	not applicable	R4,50	R9,00	R4,50	not applicable	not applicable
Airtime purchase (MTN, Vodacom, Cell C, Telkom)	free	free	free	not applicable	R4,50	not applicable	not applicable
Electricity purchase	free	free	free	not applicable	R4,50	not applicable	not applicable
Balance enquiries	R0,50	R0,50	R2,25	not applicable	R2,25	not applicable	not applicable
Mini-statement	R0,50	R0,50	not applicable	not applicable	not applicable	not applicable	not applicable
Payments to another bank account	R3	R3	not applicable	not applicable	not applicable	not applicable	not applicable
Payment of an EasyPay bill	R3	R3	not applicable	not applicable	not applicable	not applicable	R3,00
Payment to a credit card	R3	R3	not applicable	not applicable	not applicable	not applicable	not applicable
Purchase and/or cashback at other retailers Point-of-Sale	not applicable	not applicable	not applicable	not applicable	not applicable	R4,50	not applicable
Cheque deposits	not applicable	not applicable	free	free	not applicable	not applicable	not applicable

Standard Bank Community Bank schedule of fees – 2009

But why have these deployments broken from M-PESA's proven agent model and decided to allow different agents to perform different functions (in the case of MTN) and charge customers different prices for transacting at different types of agents (in the case of Standard Bank)?

In MTN's case, the decision to separate the registration function from the cash-in / cash-out function enabled them to quickly acquire customers, for two reasons. First, MTN was able to rapidly mobilise a large sales team since it is quicker and easier to onboard a field registration agent than a cash-in / cash-out agent. Moreover, a field registration agent spends 100% of his time promoting mobile money, whereas cash-in / cash-out agents are typically engaged in other lines of business, leaving them with less time to promote the service aggressively. Second, field registration agents are mobile, whereas cash-in / cash-out agents are not. This means that MTN can deploy field registration agents to customers in the places where they congregate, such as malls or festivals. Cash-in / cash-out, on the other hand, have to wait for customers to come to them.

In Standard Bank's case, their strategy was to tap into existing distribution channels – channels like bill-payment outlets that were already in place in the relatively sophisticated South African market – but they found that doing so required paying different commissions to different kinds of outlets. To preserve its own margins, Standard Bank decided to charge customers different tariffs that mirrored the different commissions that they paid different categories of agents.

The decisions made by MTN Uganda and Standard Bank required them to make tough tradeoffs. For Standard Bank, leveraging pre-existing distribution points to rapidly scale their agent network justified the risk that customers would be put off by a tariff structure that varied by agent type. For MTN, the ability to rapidly sign up new customers using customer acquisition agents justified taking two risks. The first is that aggressive field registration agents, in an effort to maximise their commissions, would sign up customers that have no real need for the services offered by MTN MobileMoney – although MTN Uganda's management believe that all its customers are potential users of mobile money, making such an ambitious customer-registration effort worthwhile.

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The second risk is that even customers who wanted to use the service might struggle to find a cash-in / cash-out agent to start transacting after signing up with a field registration agent.

Further refinements

Beyond the deviations from the agent uniformity model already seen by MTN Uganda and Standard Bank Community Banking, a third kind of variation is possible. **We expect that operators will begin to appoint different classes of agents based on the transaction values which they are empowered to perform.** For example, small, informal agents might have low transaction limits, while bank branches, supermarkets, or other formal outlets with deep pools of liquidity would specialise in large-value transactions. This will offer users the ability to make very large and very small value cash-in/ cash-out transactions, transactions which today are either unaffordable or impossible but would make the service more attractive to high and low value customers. But operators will have to balance this opportunity to permit a broader range of transactions – and thereby entice users at the base of the pyramid and at the high end to sign up – with the added complexity of a heterogeneous agent network.

Nevertheless, operators, particularly those who are launching a new mobile money platform, should not forget how complex mobile money can seem to potential users. This is particularly important when the target market is unbanked people with low levels of financial literacy. When this is the case, operators should exercise caution when introducing refinements into their agent network that could confuse the target market.

How big should an agent network be?

Operators and users alike want agent networks to be as large as possible. **However, there are good reasons why growth in agent networks has to be carefully planned to ensure the overall success of the deployment. Our analysis suggests that operators should take a three-phased approach to scaling their agent network:** (1) recruit an adequate number of agents throughout the market to support a commercial launch; (2) redirect resources from agent recruitment to customer acquisition after launch; then, once an equilibrium between the number of agents and the number of customers has been achieved, (3) grow the two in parallel.

Pre-launch

Before launching, operators recruit the number of agents they believe will be sufficient to meet demand from early adopters. This number will be smaller than the number of agents that the operator seeks to have in the long run, but experience shows that growing the agent network too fast, too soon entails significant risk.

To justify sticking with the service, agents need to perform a certain number of transactions per day. That's the only way they can earn a sufficient return on their investment in float. **When operators recruit too many agents before launch, there often won't be enough business to go around, causing agents to defect.** This can happen quickly. One mobile operator recently launched a service and within two months had signed up 3,000 agents but just 60,000 customers. Assuming each customer performed two transactions per month, this would provide each agent with just one transaction per day on which he would likely earn less than a dollar in commissions. This poor return led many agents to reinvest the capital they previously committed to float into something more productive and to forget key processes related to mobile money. **This cycle can jeopardise a deployment: when agents lose interest and stop holding float, customers become frustrated because they can't find a liquid agent and stop generating the very transactions agents need to justify their investment in mobile money.**

Since the number of agents that operators seek to have active at the time of launch is small (relative to their ultimate ambition for the scale of the network), it's important to optimise their geographical distribution. For instance, deployments that focus on money transfer will need to recruit agents in strategically defined 'send' and 'receive' areas. In the case of M-PESA, this meant recruiting not just in Nairobi, but also in rural areas. To map the specific remittance corridors for which each end will require coverage, some operators examine data from existing airtime transfer services, or leverage market knowledge from bank partners that may already offer remittance services.[1]

[1] It is because domestic remittance corridors are inter-regional that pilot tests of mobile money in narrowly circumscribed geographies often fail.

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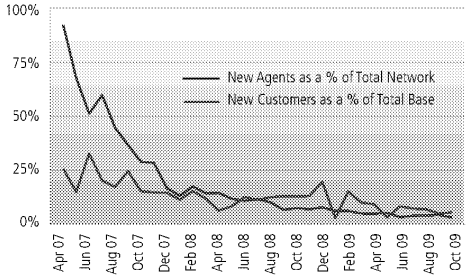
Post-launch

After going to market, operators should change their focus from signing up agents to signing up customers. Having previously signed up a cadre of new agents, operators need to, as quickly as possible, send those agents the business that will keep them committed to mobile money. Over time, the ratio of users to agents will thus begin to increase.

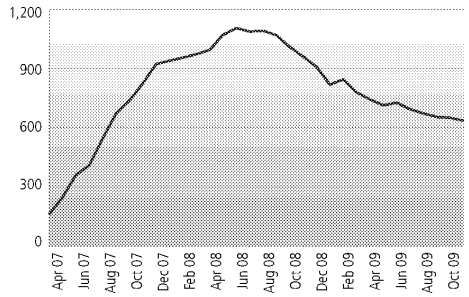
For example, Safaricom launched M-PESA with just a few hundred agents in Kenya (that is, fewer than 5% of the number of M-PESA outlets today). Thereafter, they signed up new customers much more rapidly than new agents: in the first quarter, for example, the number of users quintupled, while the number of outlets barely doubled. Within six months, the number of users per agent had grown from zero to 600.

M-PESA: Growth in Agents and Customers



That ratio continued to increase until it reached 1,000 users per agent in June 2008. It was only then, roughly 15 months after launch, that Safaricom started recruiting new agents more quickly than new customers (again on a percentage basis).

Customers Per Agent



Managing controlled, sustained growth

Because each market is different, it is impossible to generalise about what the ratio between users and agents should be. **Ultimately, operators will know when they've found this equilibrium when users have convenient access to agents that maintain float – because agents, in turn, get enough customers to reward them for doing so.**

Once this equilibrium is achieved, operators should seek to maintain balance by growing their agent network and their customer base roughly in parallel. **Operators can do this by carefully timing their use of mechanisms that will accelerate growth in customer numbers (from increased above-the-line marketing expenditures to temporary trade promotions that encourage signing up new customers) or the agent network (such as special incentives offered to aggregators for signing up new agents).**

What should mobile operators look for in a prospective agent?

Mobile operators accustomed to designing airtime distribution networks, typically with the goal of ubiquity in mind, may ask why it is important to screen agents so methodically. Mobile money agents need to be selected more carefully than airtime retailers because mobile money and airtime are distributed in two fundamentally different ways.

Airtime is sold by retailers as a product. It comes in the form of a physical scratch card, has a clearly marked price, and requires a simple exchange of cash and a product between customer and retailer. Even in markets where electronic top-up is available, customers understand the exchange as an electronic equivalent to buying a scratch card.

Conversely, mobile money agents offer customers a service: loading or unloading monetary value into or out of the customer's account. Moreover, as service providers, agents are also expected to help educate customers about mobile money – an unfamiliar concept to target customers – and, if they themselves are trustworthy, play a pivotal role in the early days of a deployment in building trust. For all these reasons, the bar for mobile money agents should be set higher than for airtime retailers.

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To some extent, operators can control the quality of their mobile money agents by establishing eligibility requirements. Some of these criteria will likely be dictated by regulation, but in most markets operators need to develop selection criteria of their own. These typically include the following:

#1: Ability to maintain sufficient cash and e-money float balances.

In nearly every market, deployments stipulate minimum values of physical cash and e-money float that agents must maintain. These minimum values are designed to ensure that agents will be able to serve the projected number of customers for their catchment area. For instance, Zambia's Celpay requires agents in metro Lusaka to maintain US$780 in float, and rural agents to maintain US$575 at any point in time.[2]

But how can operators assess whether a potential agent has the means to maintain the required amount of float? Pakistan's easypaisa leverages Telenor's data on airtime agent sales to identify retailers that are healthy and liquid businesses prior to approving them as a mobile money agent. Operators who are offering mobile money services in partnership with banks can leverage their partner's expertise in evaluating the financial health of small businesses. And in cases where the retailer is a current client of the bank, operators can make use of the data gathered over the course of the relationship between bank and retailer. For instance, MTN Mobile Money in Ghana works with 9 bank partners, each of whom leverages their knowledge of existing clients to help identify suitable agent candidates.

Float Requirements

Typically, operators require agents to commit to holding a certain amount of cash and e-money. This is almost always in addition to the "cash in the till" that retailers would hold anyway. Operators need to decide what they can realistically expect agents to maintain in float, taking into account agents' access to capital, their alternative investment opportunities, and so on. **It is also worth noting that, in our experience, minimum float requirements are flouted (with the operator's tacit consent) in many markets in the early days of a deployment.** As discussed in the introduction to this section, it is only when agents are sent customers who want to transact that they begin to see value in maintaining float.

#2: Strategic retail locations

As with any retail business, location for mobile money agents is important. In recognition of this, WING, a bank-owned, multi-operator deployment in Cambodia, has focused on creating a dense network of agents along a busy road in Phnom Penh where many prospective customers work in garment factories. WING staff have personally vetted the suitability of each agent location. In the long term (and when sustainable), mobile money deployments often seek to have at least two agents in each locale to promote healthy competition.

Agent Branding and Merchandising

Agents are often required to brand their shops with materials furnished by the mobile money service provider. This usually consists of signs or banners for the outside of the shop which advertise that the establishment is a mobile money agent for an operator and not merely a seller of airtime; and then a poster for the inside of the shop that plays a customer education and protection role.

When deciding how much to require of agents, operators should be realistic about the amount of leverage they bring to the relationship. For example, Safaricom in Kenya prohibits its M-PESA agents from selling airtime for rival mobile networks and insists that M-PESA agents be prominently branded as such. But it was able to do so in part because of its dominant market position (74% market share at the time M-PESA was launched), a position of negotiating strength that few other operators enjoy.

#3: Literate staff

Mobile money agents must be literate since their responsibilities always include performing processes that involve reading and/or writing. In some cases, it will be necessary for agents to be literate in a language other than their native one. For instance, agents for M-Paisa in Afghanistan must be able to read in English or in phonetic Dari and Pashto to conduct transactions on their handsets and record information.

#4: Trusted by the community

Because mobile money is a financial service, the credibility of a new service can be enhanced if agents themselves are already deemed trustworthy by consumers. This can be achieved in several ways. Many operators have established partnerships with large retail chains that offer high brand visibility

[2] For more information, see "Case Study - Zambia" in the *2009 Mobile Money for the Unbanked Annual Report*. http://www.gsmworld.com/documents/mmu_2009_annual_report.pdf

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to serve as agents – chains which frequently also have deep pools of cash liquidity which they can leverage for cash-out. In other cases, operators have used aggregators with local knowledge of the retail landscape in particular areas to source the most trusted and respected agents – even when they're small and informal businesses.

#5: Reach

Signing up multi-outlet agents (supermarket chains, banks, microfinance institutions, etc.) often offers a quicker route to scale than recruiting single-outlet shops one by one. But given that the retail sector is largely informal in most markets conducive to mobile money, independent outlets typically form the backbone of any operator's agent network.

How are agents recruited?

Recruiting agents is one of the most time-consuming and costly parts of launching a new mobile money service, given that the value proposition for agents is not yet obvious to the pool of potential agents. Broadly speaking, it involves three activities: identifying potential agents, educating them about mobile money, and encouraging those who are interested to apply. Since in most markets the pool of potential agents is much larger than the number who will ultimately become agents – at least in the early days of a deployment – operators have to cast a wide net in order to sign up their target number of agents.[3] One key decision operators need to make is whether to do this work in-house or to outsource it. In the early days of its M-Paisa deployment, Roshan tasked its regional sales managers with the responsibility for signing up M-Paisa agents, but found that they did not have sufficient bandwidth to devote to the effort. Alternatively, some operators hire resources within the mobile money team who are responsible for recruiting agents. The major drawback to this approach is that these new recruits will probably not know the retail landscape in sufficient detail throughout the country to identify promising agents efficiently. When operators decide to outsource agent recruitment, they must also decide to whom to outsource, and on what terms.

The experience of Vodacom Tanzania, which has tested multiple recruitment strategies when setting up an agent network for M-PESA – from leveraging airtime distribution channels to engaging a field support agency, and finally to an aggregator model – illustrates the advantages and disadvantages of each approach.

Leveraging Operator Airtime Distribution Channels

When initially planning for M-PESA's launch, Vodacom Tanzania hoped to leverage its existing airtime distribution channel in building an agent network. Specifically, Vodacom Tanzania wanted its six airtime superdealers (that is, the businesses to which Vodacom Tanzania sells airtime and which in turn sell it on to the channel) to spearhead the recruitment of agents, exploiting superdealers' and their dealers' knowledge of the channel to identify potential agents based on their location, volume of airtime sales, and other factors. But when Vodacom Tanzania approached its superdealers and asked them to take on this role in exchange for a share of future commissions, they only agreed to contribute their directly owned outlets to serve as M-PESA agents, but declined to play a more strategic role[4] as the M-PESA commission model was not designed to pass on commissions to further tiers.

Engaging a Field Support Agency

Vodacom Tanzania realised that building an agent network throughout the country without the help of their superdealers would require a lot of legwork. There are few chain stores in Tanzania, so quick wins (getting a large number of agents by signing a single deal) would not be common. And since they would be contracting with them directly, the obligation to conduct due diligence on potential agents was significant. To ease the demands on internal resources, Vodacom hired Afrikings – the company already responsible for field marketing and sales for Vodacom's airtime distribution network – to recruit M-PESA agents. Even with their help, this turned out to be a slow process; out of 100 potential agents that would attend an information session about M-PESA, only ten would show interest, and many of these would ultimately prove unsuitable in the due diligence process – a process which, even

[3] Eventually, operators can scale back oreven eliminate most of their recruiting efforts, once the number of potential agents which self-identify and apply on their own is sufficient to meet the operator's growth targets.

[4] For a more thorough discussion of why this often happens, see our "Incentivising Mobile Money Agents" at http://www.mmublog.org/agent-networks.

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for successful applicants, took 3–4 weeks. In part, the problem was that Afrikings representatives lacked detailed knowledge of the retail landscape in the many towns and villiages they were responsible for, meaning that they were unable to quickly sort through the large number of potential agents to hone in on the most promising candidates. Nevertheless, by April 2008 Vodacom had assembled 100 agents and went to market with M-PESA.

The Aggregator Model

As time went by, it became clear that Vodacom was unable to recruit agents fast enough to keep pace with growth in the customer base. So it decided to add a layer in the distribution channel between Vodacom and its agents that could speed the agent acquisition process. These new players, called aggregators, were to be responsible for recruiting new agents and for managing their float. In return, they would be paid a bonus for each agent recruited and a percentage of commissions earned by that agent going forward. Aggregators were given no regional exclusivity, unlike Vodacom Tanzania's airtime superdealers.

This structure proved to be effective, and it persists at Vodacom Tanzania to this day. There are seven aggregators, and the intention is ultimately to have no more than ten.[5] Vodacom Tanzania has found that these aggregators can sign up agents extremely quickly; one, for example, signed up 50 agents in three weeks.

Defining the Role of Aggregators

Speed is the crucial advantage of the aggregator model. Typically, the driver of such rapid growth in the agent network is an incentive scheme for aggregators that rewards them for each agent they sign up. For obvious reasons, this compensation structure is more effective than one where aggregators are paid a salary or flat fee regardless of the number of agents that they sign up; however, the operator should not commit itself to paying such bonuses indefinitely, since at some point in the growth of the service it will no longer be necessary for aggregators to source applications; agents will apply for themselves.

Theoretically, the responsibility of aggregators could end once an agent is signed up. But it is important to avoid putting into place an incentive structure that rewards aggregators for signing up bad agents – that is, those who are not going to actively serve customers (because they don't maintain float or for some other reason). One solution to this problem is to only pay out the full commission for signing up an agent to the responsible aggregator once that agent has performed some minimum number of transactions and/or signed up a certain number of customers – although aggregators would probably complain about this, given that the actions of agents are, ultimately, outside of the aggregator's control after the recruitment phase.

Vodacom Tanzania decided that its aggregators were positioned well not only to recruit agents, but also assist them in managing cash and electronic-value liquidity. As such, they decided to offer aggregators a percentage of the commissions earned by agents they'd signed up to M-PESA in exchange for helping them manage those agents' float. We discuss this arrangement in more detail in the "Managing Mobile Money Agents" section of this handbook where we refer to entities tasked with managing agents' liquidity as masteragents. The key point for now is to note that, by tasking aggregators with both recruiting and ongoing cash management, Vodacom Tanzania effectively incentivised them to sign up quality agents – that is to say, agents who are liquid and who will stand ready to transact with customers.

It is telling that, today, Safaricom recruits agents in a manner very similar to Vodacom Tanzania, even though it got started by recruiting agents using in-house teams. As customers started flocking to Safaricom's M-PESA in late 2007, those agents started making significant profits. In turn, huge numbers of agent applications started to flood Safaricom, outpacing its ability to review them properly. At the same time, agents began appointing other agents and managing their liquidity (i.e. activity of masteragents).[6]

When deciding which of these recruiting models is best for them, operators need to ask a series of basic questions. What are the internal capabilities – whether in the airtime distribution team, or the mobile money team – that could be leveraged for building an agent network? What is the appetite of airtime superdealers for distributing mobile money? Are

[5] It is interesting to note that one of these aggregators is Afrikings, Vodacom Tanzania's field marketing and sales support agency.
[6] See "Three keys to M-PESA's success: Branding, channel management and pricing" by Ignacio Mas and Amolo Ng'weno.

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there entrepreneurs in the market who can take on the aggregator role? Are operators comfortable giving up some control over the identification and recruitment process? Only after answering these questions can the appropriate agent recruitment strategy be developed. What is clear is that aggregators speed the growth of an agent network and can play a valuable role in its ongoing management.

Is there an application process?

While the application forms are typically simple, prospective agents often struggle to produce the required supporting documentation to complete an application. This should not be surprising. Safaricom requires everything from certificates of incorporation to 6 months worth of bank statements. For some prospective agents, these are not easy documents to source. Operators therefore need to balance a desire to diligently vet prospective agents by requiring extensive documentation with the equally strong need to build a network of sufficient scale. Generally speaking, there should be a clear rationale for each document required, and operators should test whether desirable agents will be able to supply all these documents.

From agent applicants that are not already Safaricom airtime dealers, Safaricom requires the following documents:

- Copies of Memorandum and Articles of Association
- Certified copies of VAT and corporate income tax certificates, where applicable
- A profile of the company and a business plan
- List of outlets
- Certificate of Incorporation or equivalent
- An official shareholding statement or equivalent
- Copies of IDs and passport photos of company director(s)
- Copies of IDs of key staff
- Completed M-PESA agent application form
- Business permits for each of the outlets
- Proof of minimum 6 months trading history in the form of 6 months of company bank statements
- Completed personal declaration forms by company director(s)
- Police certificate of good conduct for directors or persons playing equivalent role, office administrators, and primary assistants.

And just as some agents may struggle to produce the required supporting documents, some operators often find it difficult to process them at a reasonable speed.

Thus, prior to launch, operators should consider how long each application will take to review, reconcile it with the anticipated size of their agent network and scale their back office operations accordingly.

Some operators decide to supplement this back office review by physically visiting each prospective agent to inspect their premises, verify staff capabilities, and consider whether the location is desirable.

What obligations are contractually imposed on agents?

Contracts between operators and agents vary considerably across markets, but common clauses include:

- *Branding:* operators commit to furnishing agents with the marketing and branding materials which they need; agents, in turn, agree to use only materials provided by the operator
- *Commissions:* operators reserve the right to vary and/or suspend any commissions at any time (and when operators use masteragents and pay agents via masteragents, masteragents are obligated to pay out commissions to agents within a certain timeframe)

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- *AML/CFT:* agents commit to carrying out AML/CFT checks, subject to training by the operator or its appointed proxy, and any reporting obligations imposed by the operator and/or regulator
- *Float:* agents commit to maintaining a certain level of float (when operators use aggregators, this responsibility may be assigned to the aggregator instead)
- *Termination:* operators and agents typically reserve the right to terminate their relationship at any time and without cause

If an operator has chosen not to appoint masteragents, then its agents should be contractually prohibited from ceding, delegating, or sub-licensing any of their rights or obligations to any third party.

How are agents trained?

Training agents is a non-trivial undertaking. Agents must not only have a good conceptual grip on mobile money, be able to conduct transactions (including following all the associated business processes, such maintaining a transaction logbook), and fulfill KYC and AML/CFT requirements; they must also be able to explain the service to customers and provide basic support to them. Every operator with a mobile money platform needs to develop a training program that covers these essential elements.

Training Cash In/Out Agents

To deliver this training, operators need to decide whether to train agents in the field, (generally at the agent's retail shop), or at some central location. In Uganda, new handlers – that is, any new front-line employee of a cash-in/cash-out agent for MTN MobileMoney – receive up to six hours of training in the field. This training is a mix of theory and practice and is administered by representatives of Top Image (a field marketing support agency) that are dedicated to mobile money.[7] The training culminates in an exam, and if the handler doesn't pass, the Top Image representative comes back the next day to conduct further training. In practice, however, sometimes new handlers are trained by other employees of the agent.

In contrast, Safaricom requires the owner or manager of each new agent to attend a full-day session in Safaricom House in Nairobi, which also culminates in an exam. This does inconvenience new agents and may discourage some small, "mom and pop" shops in remote areas from applying to be agents, since it would require shutting the shop, and forgoing a day's revenue, to attend the session. However, the advantage for Safaricom is that it is better able to control the content that is presented to agents and can expect the agent's full attention for the day. Safaricom supplements this training with follow up visits (also by Top Image).

Splitting the difference, Orange in Côte d'Ivoire holds half-day training sessions for new Orange Money agents in regional hubs around the country, which are supplemented by in-store visits by staff thereafter.

Training Field Registration Agents

Operators who use a separate class of agents for customer acquisition generally employ a different training mechanism for them. In Uganda, field registration agents receive 2–3 weeks of field training when they start with MTN (although they are typically paid very little, if at all, during this time). This is mostly spent trailing more experienced agents to learn about the features of mobile money, the KYC process, etc. WING in Cambodia, has chosen instead to train its field registration agents in 2–3-day-long sessions before sending them out into the field to start signing up customers. Of course, the content for these sessions differs significantly from that which is presented to cash-in/cash-out agents, too: customer acquisition agents only need to be trained on one transaction type, but may need additional training on sales techniques.

[7] Top Image was used for the first 6 months, but recently MTN moved their functions in-house.

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Incentivising Mobile Money Agents

Introduction

In this section we seek to answer a broad question: how can mobile network operators design a set of incentives that encourage agents to become active and productive participants in mobile money distribution? This is important because agents are at the frontline of every mobile money deployment: if they don't sign up customers, no customers sign up; if they don't hold float, customers can't transact; and if they aren't reliable, the mobile money service won't be seen as reliable. Since incentives are a powerful way to shape agents' behaviour – to encourage them to recruit customers, to hold float, and to build customers' trust – it is important to get those incentives right.

That, however, is difficult. If operators pay agents too little, agents will not support the service (essential because mobile money is intangible, unlike fast moving consumer goods, which act as advertisements for themselves when sitting on the shelf). If operators pay agents too much, they will destroy their business model, which is predicated on the cost advantage of using a network of agents to serve customers compared to, for example, formal bank branches. And if operators pay agents for the wrong things, they will incentivise agent behaviour that undermines, rather than supports, the health of the mobile money service.

We have prepared this document to guide operators as they put agent incentives into place, and to offer ideas to operators who are considering changing agent incentives. We focus on setting commissions, but it should be stressed that, from the agent's perspective, the commissions that he earns are just one of the incentives that he benefits from. The volume and size of transactions that the agent is able to handle – which the operator can influence through its spending on advertising and other kinds of marketing – and the effect that serving as a mobile money agent has on foot traffic and hence the sales of other products in an agent's outlet – are the other parts of the equation that determine how much an agent earns.

What is the process for establishing an agent commission model?

Understanding agents' requirements

In every deployment we know of, agents are paid on a variable (commission) basis. The commissions that operators pay agents must, at a minimum, be generous enough to persuade agents to invest in float, learn and remember relevant processes, and serve mobile money customers. Agents are almost always in some other line of business before signing on to a mobile money platform, so agents must perceive the return from serving as a mobile agent to be at least as good as any other line of business that they might get into.

The first step in setting commissions, therefore, is to analyse the economics of the business of a typical agent. Since many potential mobile money agents sell airtime, and since both airtime and mobile money are offered by the same operator, many operators and agents assume that the return from serving as a mobile money agent should be comparable to that of selling airtime. But that isn't necessarily true. Imagine that a retailer, which already sells airtime, is trying to decide whether or not to invest $250 into becoming a mobile money agent. The best alternative to doing so is probably not simply investing in $250 more worth of airtime inventory, since the constraint on most retailers' airtime sales is not supply but demand. Given the wide availability of airtime in most emerging markets, it's reasonable to assume that the return that retailers get from selling airtime is high enough to justify their investment in a level of inventory that allows them to meet existing demand most of the time. If that's the case, the relevant alternative to serving as a mobile money agent is probably not airtime but something else – and that, for many retailers, is fast-moving consumer goods.

The right starting point, then, is for operators to ensure that serving as a mobile money agent offers a superior return to agents when compared with selling their least profitable or slowest moving inventory. This analysis requires a significant amount of field research – talking to potential agents about their business, understanding how they evaluate opportunities, and so on. But it is only through this process that operators can be sure that the commission structure they offer the channel is sufficiently compelling.

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To perform this analysis, operators will need to estimate the size and volume of transactions that agents will be called on to perform and the ease and frequency with which agents can restock their balances of cash and electronic value – since the faster an agent can restock, the less capital he will have to tie up in float. These are the variables that the operator has significant control over – by introducing aggregators, for example, operators can make it faster and easier to restock their balances – but this, of course, introduces additional costs into the model. Operators also need to estimate parameters like the value of agents' (or their employees') time,[1] their cost of capital, and their alternative investment opportunities, all of which are variables over which operators have no control.

Finally, operators should not overlook the possibility that, by serving as a mobile money agent, retailers can increase foot traffic and thus sales of other goods in their shops. This effect – which will probably be strongest once a critical mass of users has started transacting, but before the market is completely saturated with mobile money agents – provides incremental revenue for agents at no additional cost to the operator.

Building a viable business model

The economics of the agent's business will therefore dictate the floor of the range of commissions that operators must offer. **The ceiling, on the other hand, will be a function of the operator's overall mobile money business model.** That is, commissions must be set such that an operator can achieve their financial goal for the mobile money service.[2] Operators therefore need to carefully model the commissions they plan to offer, making prudent assumptions about usage and scale, before approaching potential agents with a value proposition. (Of course, these assumptions will sometimes be incorrect, and operators may decide that they need to adjust the commissions they offer in response – see later section on "Can incentives be changed?")

How are the economics of airtime reselling different from serving as a mobile money agent?
It is natural for potential agents who currently sell airtime to evaluate the opportunity to serve as a mobile money agent by comparing it to the business of selling airtime. However, there are many reasons why it is not possible to simply compare the margin that retailers earn on airtime with the commissions that are paid out for facilitating cash-in / cash-out transactions. Operators need to be proactive in helping agents to understand these differences, and to put forward a value proposition that is compelling on its own merits.

First, the cash flows are usually different. As soon as an airtime reseller is able to sell airtime to a customer, he has not only recouped his original investment but also earned his profit margin. In contrast, mobile money agents often receive their commission weeks after performing a transaction. This is less attractive from an agent's perspective since he has to wait a long time for his profit but more attractive in the sense that a lump of many aggregated commissions may appear more valuable than an ongoing stream of very small commissions.

Second, the frequency with which agents can restock their cash and electronic value balances is not the same as the frequency with which airtime resellers can restock their inventory of airtime. In general, the less frequently an agent can restock the supply of any of good, the higher the margin he will need to earn in order to make stocking that good worthwhile. In some markets, agents can access cash or electronic value more frequently than they can restock airtime. But even setting aside this possibility, the fact that airtime agents can perform both cash-in and cash-out transactions allows them to make more efficient use of their inventory than is possible with airtime. Imagine an agent who predominantly performs cash-in but also the occasional cash-out. Every cash-out transaction he performs enables him to perform another cash-in of equivalent value on the same original investment in float. (Indeed, an agent who performed a perfect balance of cash in and cash out would

[1] A quick, but useful, way to assess whether operators are giving agents a compelling value proposition is to compare the average daily wage of an shop employee with the commissions from the number of transactions that employee might reasonably be able to facilitate in a day. The value of the commissions needs to exceed the daily wage (to account for the shop owner's investment of capital) in order to justify signing up as an agent. For more information, refer to 'The Economics of Branchless Banking', by Ignacio Mas 2009.

[2] An operator's financial goal for mobile money may or may not be profitability; some operators are content for mobile money to break even or even lose some money because they believe that mobile money services will decrease churn, increasing revenues voice and text revenues to an extent that value is created for the business as a whole.

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never have to restock at all.) In contrast, once airtime is sold, it's sold; agents cannot make money by accepting returns and then re-selling the airtime to someone else.

Third, mobile money agents in net receive areas can exploit the synergy between their existing retail business, which generates "cash in the till", and serving as a mobile money agent, which requires cash inventory to facilitate cash out. The larger this synergy is, the less investment the agent will need to make in cash float. In contrast, retailers do not accumulate airtime in the normal course of their business.

Fourth, the increase in foot traffic, and therefore in sales of other goods that agents enjoy when offering mobile money, is potentially greater than that effect when offering airtime, since in every market there are substantially fewer mobile money agents than airtime resellers – at least in the early days of a deployment.

Fifth, although airtime margins are usually fixed on a percentage basis, commissions on mobile money transactions usually vary depending on the size of the transaction. As such, it is hard to make a direct comparison without knowing the distribution of transaction sizes that an agent will perform.

Before approaching potential agents (or channel intermediaries, like super dealers) who are already involved in airtime distribution about the possibility of playing a role in mobile money, operators need to understand each of these points, and be able to clearly articulate to agents why serving as a mobile money agent makes good business sense for them. Nevertheless, operators should not be surprised if many potential agents find the economics of mobile agency less appealing than that of airtime reselling. In that situation, operators in many markets have found that retailers outside the airtime distribution network are more likely to enthusiastically sign up to serve as agents in the early days – but that as soon as those agents start to prosper, traditional airtime retailers (and distributors) are quick to revise their opinion about the value of serving as a mobile money agent. This process is accelerated in markets where customers can top-up their airtime balances using their e-wallet. When airtime resellers realise that customers have begun to do this, they often decide that capturing the commission on cash-in as a mobile money agent is better than being disintermediated from airtime sales altogether even though operators are typically able to set these commissions lower than corresponding airtime margins for most transaction values.

What are the transactions for which agents are paid?

Usually, agents are paid for every transaction which they facilitate, which, in most deployments, are cash-in, cash-out, and customer registration. **As a general principle, the mobile money agent should make money on every transaction he performs.** This is because agents can pick and choose which transactions to perform, and it would be very frustrating to customers if agents refused to facilitate certain transactions because they were not sufficiently profitable for the agent. The operator, however, shouldn't mind losing money on individual transactions, so long as the overall business model makes sense. This is what enables operators to subsidise certain transactions (most typically cash in, which is free for customers but for which the agent still earns a commission) but then recoup that value in other transactions (most typically money transfer, for which the customer pays and the agent is not compensated).

Customer registration

Agents usually get a flat fee for registering new customers. This is not simply to grow the customer base; it is also to give agents a significant revenue opportunity from the very beginning of a deployment – with the expectation that, as the market matures, commissions from cash-in/cash-out transactions will begin to replace those for customer registration. **This requires a major upfront investment on the part of the mobile network operator.**

In many cases, however, this fee, or a part of it, is paid out only after the customer has performed her first transaction – to eliminate the incentive for agents to sign up users who never intend to use the service and/or to fail to educate customers about how to use the service after signing up. But even that is not foolproof; several deployments have found that some agents induce customers to perform a very small transaction right after registration (say, a cash-in followed immediately by a cash-out) so that they get their commission – after which the customer may never use the service again. If the cost to the customer to register for the service is less than the commission that the agent earns for signing her up, this risk is especially acute, since the agent can simply

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subsidise the customer's registration charge (and perhaps even share a bit more), keeping the balance of the commission for himself. To minimise this risk, Zain in Tanzania has adopted an even more elaborate commission for agents who sign up new customers to Zap: a third of the approximately US$1 commission is paid to the agent after customer verification, but the remainder is paid only if the customer does 5 transactions in a 6 month period after registration.

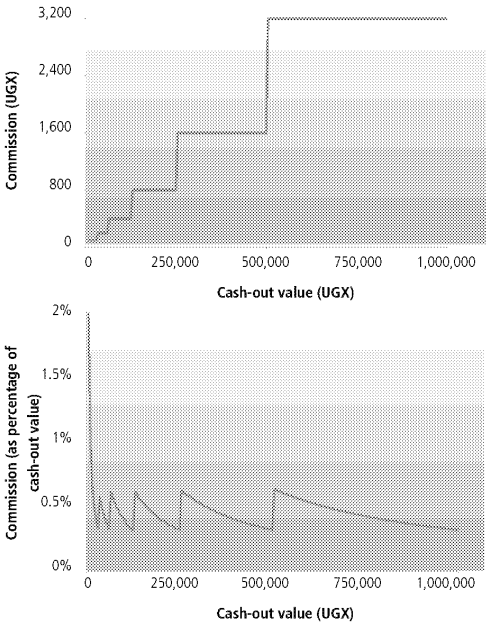
Commissions for customer registration agents
Operators that use customer registration agents need to consider the particular financial requirements that its customer registration agents are likely to have. Experience in Uganda and Cambodia has shown that paying full-time customer registration agents solely on a commission basis is possible, but that **it is important to pay commissions such that successful customer registration agents are able to earn an attractive wage** (given their skills and labour market conditions) in total; otherwise, they will quickly churn – wiping out any investment the operator has made in training that agent.

As discussed above, care should be taken to incentivise customer registration agents to only sign up customers that have a demand for the services offered on the mobile money platform and to educate them about how to use the service after registration – this should include pointing out cash-in/cash-out agents in the vicinity with whom the customer can begin transacting. If operators make a large part of the commission contingent on customer behaviour in the future, however, they need to bear in mind the cash-flow requirements of customer registration agents in the meantime (who, after all, have no revenues from another business that most cash-in/cash-out agents can count on). Some operators have offered new customer registration agents a small stipend that tapers off over time to solve this problem.

Cash in and cash out

In the majority of deployments, agents are paid for facilitating both cash-in and cash-out transactions. Usually, as transaction values increase, commissions increase in absolute terms but decrease as a percentage of the total. This structure ensures that agents are sufficiently compensated for performing even very small-value transactions. For example, these charts illustrate the commission that MTN MobileMoney agents earn in Uganda for performing cash-out transactions (there are approximately 2,000 Ugandan shillings to the US dollar):

Cash-out Commissions, MTN Uganda



These lines are not smooth because MTN Uganda, like many other mobile money service providers, sets commissions in tiers:

Cash-in Value (UGX)		Agent Commission (UGX)
Minimum	Maximum	
5,000	30,000	100
30,001	60,000	200
60,001	125,000	400
125,001	250,000	800
250,001	500,000	1,600
500,001	1,000,000	3,200

The principal advantage of setting commissions in tiers is that it allows operators to offer agents a more generous margin on low-value transactions than larger-value ones. Without doing this, agents would receive extremely paltry commissions for handling small value transactions, which could discourage them from performing them. But this can in turn set up an incentive for agents to encourage customers to "split" a transactions into multiple, small value transactions. MTN Uganda have designed their agent

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commissions for cash-in to make it difficult for agents to do this: agents would have to convince customers to split any given transaction into at least three pieces in order to increase their total commissions, and customers would have good reason to resist this because they would pay much more in tariffs that way.

The most common alternative to paying commissions based on tiers is to pay agents the same percentage of value transacted regardless of the size of the transaction. This eliminates the incentive to split transactions, and can be supplemented with a minimum commission for both cash in and cash out, which ensures that agents are properly compensated for facilitating even small value transactions.[3]

In many deployments, agents earn commissions for cash out that are one and a half to two times higher than for performing cash in. Operators tell us that this is what agents demand. One possible explanation is that agents who primarily perform cash-in transactions are likely to be in dense, urban areas, allowing them to do a higher volume of business and to replenish their stock of e-money easily. Agents who primarily perform cash-out transactions are more likely to be situated in rural or semi-rural areas where they will handle fewer transactions and find it more time-consuming to replenish their stock of cash frequently. Therefore, it will be necessary for them to earn a higher margin on the transactions that they do perform relative to the agents whose primary business is cash in.

Zain Zap cash-in/cash-out commissions

Zain has also adopted the tiered model for its Zap service, but with a few key differences that are closely related and which, taken together, offer a strikingly different value proposition to agents than Safaricom does with M-PESA. First, Zain charges customers for cash in as well as for cash out. Second, Zain allows agents to keep 100% of the tariff they charge the customer for each transaction. Third, although Zain recommends a set of tariffs for cash in and cash out to its agents – and communicates them to customers – they recognise that some agents will modify these, and Zain's ability to control this is limited. As such, agents can charge more or less depending on their supply of e-money and cash and customer demand, and they can negotiate different tariffs with different customers. Finally, customers pay tariffs in cash to the agent.

What are the implications of Zain's approach? First, it's a simplified business model for both the operator and the agent. Zain doesn't make or lose any money on cash in and cash out; instead, it makes money on transfers and other customer-initiated transactions. Similarly, the agent captures all of the value that he creates by performing cash in or cash out, and he gets it in cash right away. It also allows Zain to focus its communications on their low transaction fee, typically US$0.12 per transaction, and position Zap as an affordable payment instrument.

On the other hand, the quality of the customer experience with Zap is potentially variable. By allowing its agents to set their own commissions, Zain permitted what probably happens to some extent even in deployments in which it is officially prohibited: agents increasing commissions when demand for electronic value or cash is especially high. In a theoretical world, this should result in optimal pricing – after all, agents can also offer discounts when demand is low – but in the real world, customers can view this practise as predatory. Part of the appeal of mobile money services that offer established prices is the simplicity and transparency of that arrangement to customers. As such, operators considering the Zap model should carefully consider whether the advantages outweigh the disadvantages.

Other agent commissions

Sometimes, operators choose to pay agents other commissions. Vodacom Tanzania, for example, gives agents a commission every time customers whom they registered buy airtime using M-PESA. This commission was established to reduce resistance to M-PESA by agents and aggregators who worried that their customers might stop buying airtime directly from them once they had signed up for M-PESA. The problem with this approach, from an operator's perspective, is it erodes some of the value that is created by migrating customers from purchasing airtime from agents to doing so on the mobile money platform. In most markets, operators do not pay such a commission, but some elect not to promote the ability to top up using the mobile money platform so as not to antagonise their channel.[4]

[3] One relatively minor disadvantage to this approach is that, assuming the operator charges customers tariffs which are based on tiers, the operator's gross margin will vary substantially by transaction.

[4] Of course, operators who completely bypass their airtime distribution network when setting up a mobile money agent network do not face this channel conflict.

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Does every agent have the same commission structure, or do they vary?

Paying every agent the same commissions is the norm, but there are exceptions. For example, operators can agree to offer more generous commission structures to agents with many outlets (for example, a chain of petrol stations) because signing up such agents allows the operator to quickly scale up its network.

In the "Building Agent Networks" chapter of this guide, we discussed how mobile money providers may someday appoint different categories of agents, allowing certain agents to specialise in especially large or especially small transactions. It is very likely that, if and when this occurs, such agents would need to earn different commissions, based on their differing cost structures.

Can incentives be changed? Why and how would they be?

An important driver of the success or failure of a mobile money deployment in financial terms is the commissions that operators pay agents. If operators set commissions too low, potential agents will find the value proposition insufficiently appealing, and the operator will struggle to sign them up. But if operators set commissions too high, operators may find that they are unable to achieve sustainability for the overall deployment. (This can easily occur if an operator's initial assumptions about other costs, revenues, and volumes turn out to have been overly optimistic.) However, reducing commissions risks alienating the agents whom operators rely on not only to deliver their mobile money service, but to promote it.

One solution to this dilemma is operators sometimes consider building some flexibility into the business model from the time of launch. This entails putting together a compelling set of commissions for agents, but making sure that at least some components of that package are clearly identified as short-term promotions that can be extended or withdrawn at the discretion of the operator. For example, operators may offer agents special bonuses for customer acquisition in the first few months after going to market. Or they may increase cash-in and cash-out commissions for a limited time, to reward agents who keep float on hand even in the early days, in which transaction values are likely to be low. Then, as volumes increase, operators can assess whether commissions should be readjusted.

Even after launch, operators who make liberal use of such time-limited promotions can quickly respond to emerging issues throughout the lifecycle of the deployment. **Many operators have developed sophisticated trade promotion strategies in their airtime distribution business, and mobile money teams can tap into this expertise for ideas about how such promotions can be useful in mobile money as well.**

What are commissions for aggregators and masteragents?

Aggregators (defined in this document as an entity responsible for recruiting agents) are typically paid a flat fee of up to US$100 for signing up agents, while masteragents (who manage agents' ongoing liquidity) earn a proportion of the commissions that agents under their aegis earn. In exactly the same way as with commissions paid to agents for signing up new customers, operators should be careful not to skew the balance of incentives for aggregators / masteragents too far toward agent recruitment, as they are likely to succeed only in growing a very large network of inactive agents. Rather, aggregators / masteragents should reap the bulk of their reward from the ongoing share of commissions earned by their agents – which will encourage them to sign up good agents to begin with. Of course, operators should model the stream of gross receipts (i.e. tariffs less commissions) they expect to realise from an average agent before deciding how much of that value to share with aggregators for signing up the agent.

Some operators dictate how commissions between masteragents and agents are to be split; others allow masteragents and agents to negotiate this. In Kenya, Safaricom have recently decided to insist that masteragents share 80% of commissions earned with the agent, although sometimes in the market that percentage was lower (70%) because the masteragents were investing more time in cash management. In Afghanistan, M-Paisa agents can be left with just

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50% of commissions earned when the aggregator / masteragent has put up the start-up capital required for float. (The reduction in the fraction of commissions which they are entitled to keep is thus in lieu of interest being paid to the aggregator / masteragent for the loan of start-up capital).

How do commissions get paid out?

There are three different mechanisms for paying out commissions, and some variation in how long after a transaction the associated commission is paid:

Timing	Instrument
In arrears (lump sum)	Electronic value
Immediately after transaction	Cash
	Bank transfer

Both Zap and True Money, (a mobile money service offered by Thai mobile operator True Move) pay commissions immediately after transactions have been completed. True pay them in electronic value. In the Zap model, agents are entitled to collect 100% of the tariff they charge the customer, and they take that payment in cash.

In contrast, agents for all of Vodafone's money deployments are paid commissions monthly in arrears. At the end of each month, the operator tallies up the commissions that are owed to all of the agents of each masteragent, then transfers them, in electronic value, to the masteragent; in turn, the masteragent is responsible for disbursing the fraction of the commission due to individual agents.

At MTN Uganda, commissions can be paid in two ways, depending on the agent's preference: immediately, with the value transferred into the agents e-money account; or at the end of the month, with the value transferred into the agent's bank account. Typically, it is larger agents, with more sophisticated reconciliation processes, that prefer the latter.

One advantage of paying commissions in lump sums in arrears is that they may seem more valuable to agents than many small individual commissions. Another is that such commissions can be held back if the operator finds that an agent has earned them fraudulently. But the disadvantage is that agents have to wait a long time to earn a profit from mobile money. Agents seem to vary in their preference along this dimension, both within and across markets, so MTN Uganda's ability to do both allows them to suit the preferences of any potential agent.

The main advantage of paying commissions on the mobile money platform is that it encourages them to roll those commissions into their stock of electronic value.

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Managing a Mobile Money Agent Network

Introduction

In this article, we explore how mobile operators can ensure that the agent networks they have built and incentivised are managed effectively. A well-managed agent network can help operators build brand awareness, educate customers, and meet system-wide liquidity demands, all of which builds confidence among users in a service that is initially unintuitive. A poorly managed one, by contrast, will be characterised by widespread low-quality customer experiences, which in turn erode trust and drive away business.

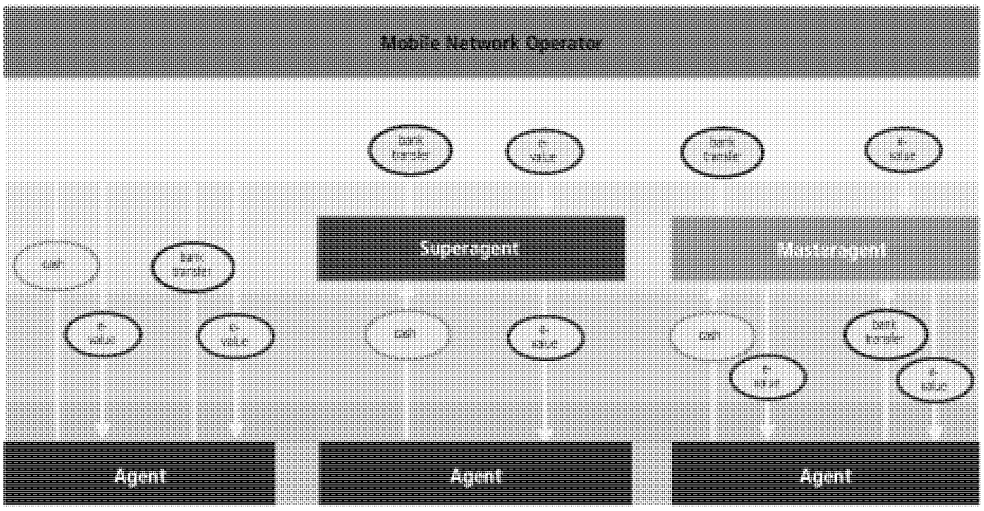
We address two broad questions in this section about agent network management. First, we consider the ways that operators can ensure their agents consistently deliver positive customer experiences, including the various mechanisms that can be used to ensure agent liquidity. Second, we identify the ways that operators have safeguarded their agent networks from being abused.

How do operators ensure agents are liquid?

Most agents will regularly need to restock their inventory of electronic value or cash in order to continue serving their customers. Agents who primarily perform cash in will need to restock their inventory of electronic value; agents who primarily perform cash out will need to restock their inventory of cash.[1]

Operators have developed a host of liquidity management processes, and most operators employ more than one. In part, the options that will be available to operators are shaped by their existing relationships with stakeholders like airtime dealers – as well as the quality and extent of the banking infrastructure in their markets and the willingness of banks to play an enabling role for mobile money. **All of these mechanisms have a cost, whether explicit (bank transfer fees) or implicit (time, capacity at company-owned stores, etc.), and whichever entity assumes these costs will need to be compensated for them – whether it is the operator, the agent, or an intermediary.**

Selling electronic value to the channel: a set of options



[1] The few agents who find that they perform about as much cash-in as cash-out will have to restock much less frequently; the hypothetical agent whose electronic value float requirements were exactly equal to her cash float requirements would find it necessary to restock only when her business is growing.

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Option 1: Selling and buying electronic value directly to and from agents

The simplest arrangement is for mobile operators to sell and buy electronic value directly to and from agents. Many operators have company-owned retail locations in the markets in which they trade, and they can use these outlets as mobile money and cash distribution points to agents (although they would also typically serve as agents to users as well). However, this approach requires agents to physically present themselves at one of the operator's outlets, which, particularly for far-flung agents, can take up a large amount of their time.

If the existing banking infrastructure in the market is sufficiently developed, an operator can leverage it to make selling and buying electronic value to and from remote agents easier. For example, MTN Uganda allows agents to buy electronic value by depositing cash into a bank account at its partner bank. Once the deposit has been confirmed, MTN Uganda transfers the electronic value to the agent. Since making deposits is free, this mechanism does not have any explicit costs, but it still takes up agents' time – again, for rural agents who live far from a branch of MTN Uganda's bank partner. This approach is a good option for operators who have partnered with a bank that can settle cash deposits in real time. It is also relatively straightforward: this approach does not require any modification to the bank's ordinary deposit-taking processes. Note, however, that buying electronic value from agents using this mechanism requires the agent to have a bank account, into which the operator can deposit funds (which the agent can then retrieve as cash).

In Thailand, where the banking infrastructure allows for instantaneous intrabank transfers, a True Money Express agent can buy electronic value by transferring money from her bank account to True's (a transaction that is completed on a mobile handset), after which her account is immediately credited with electronic value. (True enables this functionality by holding bank accounts at roughly a dozen banks in the country.) However, unlike the previous options, this approach has an explicit cost: a bank transfer fee of about 1%, which the agent pays. In addition, it works only for selling electronic value to, rather than buying it from, agents – although since True Money Express agents do not yet facilitate cash out, which would entail accepting and potentially accumulating a large volume of electronic money from customers, there is rarely a need for agents to sell electronic value back to True.[2]

Option 2: Using superagents and masteragents

In most markets, however, it is unrealistic to expect agents to travel to an operator-owned outlet or a branch of the operator's bank partner and impossible for the banking system to facilitate instantaneous transfers and thus purchase of electronic value. **In these cases, operators appoint intermediaries to whom they will sell and from whom they will buy electronic value, who, in turn, will sell and buy electronic value to and from agents.** Like wholesalers in other distribution systems, these entities earn a somewhat lower commission than regular agents do, because they deal in bulk, but nevertheless they must be compensated for their role.

The most obvious candidates for this role are banks, ideally those with a relatively large network of branches, and banks who agree to perform this function are sometimes designated superagents. **For a fee, superagents agree to buy and sell electronic value in exchange for cash.** Safaricom has signed agreements with several banks in Kenya to perform such a role.[3] In this model, the restocking fee can be paid either by the agent or by the operator. While this model still requires agents to physically present themselves at a bank branch as they would in Option 1, it does enable an operator to partner with multiple banks – and leverage multiple networks of branches – to provide agents with more options. It also allows agents to convert cash into electronic value and vice versa instantaneously.

While banks occasionally play this role, more commonly, it is taken on by figures called masteragents, who agree to manage the liquidity of a set of agents. (Masteragents are almost always the same entities as aggregators, but for clarity we distinguish these roles from each other, since in theory their functions could be delivered by different entities.[4]) This means a masteragent buys electronic

[2] For more information, see "True Money and M-PESA: Two Unique Paths to Scale" by Paul Leishman at http://mmublog.org/south-east-asia/new-gsma-case-study-on-thailand's-true-money/.

[3] See "Three keys to M-PESA's success: Branding, channel management and pricing," a forthcoming article by Ignacio Mas and Amolo Ng'weno, for a more detailed discussion of the liquidity processes that Safaricom has put into place.

[4] For more on aggregators, see "Building a Network of Mobile Money Agents", the first section of this handbook, at http://www.mmublog.org/agent-networks/.

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value from the operator and then resells it to agents under its umbrella. If a masteragent supports a group of agents who, net, perform more cash out than cash in, the masteragent will purchase electronic value from agents and sell it to the operator. To minimise the frequency with which masteragents need to trade directly with the operator, operators can insist that masteragents support agents in both urban and rural areas, balancing cash-in and cash-out requirements.

Sometimes, masteragents employ staff who can shuttle cash to and from agents. More generally, they can be expected to take responsibility for ensuring that their agents are liquid and thus ready to transact with customers. It is for this reason that most operators give masteragents tools to monitor the electronic value balances of its agents. That allows masteragents to act pre-emptively when an agent may need to buy more electronic value soon. Of course, it is not possible to electronically monitor cash balances, but operators can encourage close communication between agents and their masteragents to ensure that cash doesn't run out: Vodacom Tanzania has recently issued its masteragents with mobile numbers that are toll-free for its agents so that they can communicate their liquidity needs freely, without worrying about incurring the cost of airtime.

This difference in degree of responsibility between superagents and masteragents is reflected in the way that they are typically paid. Superagents are paid each time they buy or sell electronic value from or to an agent, while masteragents are paid for liquidity management indirectly, by sharing with the agent a cut of the commissions that the agent earns by transacting with customers.[5] By tying the compensation of a masteragent to the success of its agents, operators motivate masteragents to ensure that their agents are liquid. Banks cannot assume this responsibility (and in any case are not usually tasked with managing particular agents, as masteragents are) so it makes more sense to pay them on a per-transaction basis.

Aside from liquidity, what are the other elements of a positive customer experience that operators must control?

In mobile money, operators have to rely on independent service providers to cover the last mile in the distribution chain and to own the face-to-face relationship with the customer. This keeps costs low and allows operators to develop agent networks that are ubiquitous. However, **it does create a risk that the service will be delivered inconsistently or poorly if agents are not well trained and closely monitored**. And as we describe in "Building a Network of Mobile Money Agents," offering mobile money is as unfamiliar to most new agents as using it is to most customers, so there is significant scope for things to go wrong. That makes it essential for operators to put an appropriate channel-management structure in place. **In addition to ensuring that agents are liquid, this structure needs to ensure that agents are prominently and consistently branded and observe relevant business processes – keys to a high-quality customer experience.**

Branding and merchandising

To ensure agents can be easily identified by customers and to build brand awareness for the service, it's important that mobile money agents be clearly branded in the marketplace. As such, operators usually require that its agents adhere to certain branding standards. **It is important that agents are visited regularly to ensure that these standards are being met.**

Branding and Merchandising True Money Express agents

Each True Money Express agent in Thailand receives a starter kit that includes all of the collateral required to start facilitating transactions. An entry-level kit includes mini-posters and stickers that new agents can use to advertise in their area, while advanced kits include a light box that can be installed outside a high-traffic agent's location. Also included in each type of starter kit is a method of making a physical record of each transaction: agents who select entry level kits are provided with logbooks, which build trust by offering customers an important tangible record of their transaction. The kits also include stamps, which can be used to stamp bills that have been paid at the counter (to replicate more closely the experience of paying a bill at the bank, where a stamp is also used) and a manual for agents that includes step-by-step instructions for each transaction type.

[5] Unlike airtime superdealers, mobile money masteragents sell electronic value at the same price at which they buy it from the operator.

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Creating a mobile money brand
As noted in the introduction to this handbook, one of the assets that mobile network operators bring to the mobile money business is a powerful brand. However, operators vary in the extent to which they leverage this brand. **In general, we find that customers are most comfortable with mobile money sub-branding that is related, but clearly differentiated, from the operator's core brand identity.** When the mobile money brand is barely distinguishable from that of the operator, it becomes difficult for users to identify at which agents they are able to perform mobile money transactions (as opposed to purchasing airtime). At the other end of the spectrum, when the mobile money branding departs too radically from that of the operator, then the opportunity to capitalise on the strength of that core brand is missed.

Consistency

So far, we have discussed aspects of the customer experience that are easy to observe: is the shop properly branded, and is the agent liquid? **But it is often more intangible capabilities that distinguish good agents from bad ones**: can the agent's staff explain mobile money clearly to customers? Are they conscientious in completing the logbook at every transaction? Do they adhere to pricing guidelines?

To ensure that these and other such questions are answered affirmatively, operators or their designated proxies need to visit agents on a regular basis, to monitor their adherence to prescribed business processes and provide additional training as needed. Additional training means both offering "refresher" training on the basics of mobile money service provision, particularly to new staff, as well as training agents in new features or services that are launched on the mobile money platform.

Responsible parties

Since regular site visits are needed to ensure that agents comply with business processes and maintain proper branding and merchandising, operators often tap one single entity to deliver both functions. But just which entity is chosen varies between deployments.

Option 1: Existing Airtime Sales and Marketing Staff in the Field

Until recently, Zain's field airtime sales team was responsible for monitoring Zap agents in Tanzania. Zain relied on this approach because budget was unavailable for any other option. But Zain discovered that it was difficult to get their sales team to focus on Zap training and branding given that they were responsible for meeting a number of other targets as well. Moreover, since in many markets sales teams are compensated based on airtime sales in their region, it can be difficult to design an incentive structure that will encourage them to allocate the necessary proportion of their time to monitoring agents.

Even if such a compensation structure could be developed, it is not clear whether the skill set of a good airtime sales representative is the same as that which is required for monitoring and training mobile money agents.

Option 2: New Team of Dedicated Mobile Money Field Staff

MTN Uganda recently created a new in-house team to monitor their mobile money agents. The key difference between this approach and Zain's in Tanzania is that MTN teams are dedicated to the service and therefore do not have conflicting objectives that might cause them to de-prioritise mobile money. This approach addresses the incentive misalignment that comes with using in-house airtime sales teams, and it allows the operator to hire representatives who are conscientious, can explain complicated subjects (such as mobile money) well, and so on – i.e., who are well-suited to monitoring and training agents. The downside, from an operator's perspective, is that this approach requires a major increase in employees or contractors on the payroll.

Option 3: Outsourced Third-Party Agency

Vodacom Tanzania uses Afrikings, a third-party agency, to monitor their network of M-PESA agents. (Vodacom Tanzania also outsources airtime field marketing support to Afrikings, but Afrikings employs two separate sets of employees in the field: one dedicated to airtime, and the other to M-PESA.)

This arrangement provides Vodacom with the flexibility to quickly scale the number of field staff they require up or down, without having to hire a large number of new in-house staff. Vodacom also benefit from Afrikings' specialist skill-set in field marketing. And since the field representatives are dedicated to mobile money, their attention is not divided between M-PESA and airtime.

Option 4: Masteragents

In theory, deployments that manage the liquidity of their agent network through masteragents could

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equally task these entities with monitoring branding and adherence to business processes. For instance, in scenarios where masteragents physically visit their agents on a regular basis to manage their liquidity, they could also take the time to perform monitoring duties. But while it's clear that synergies exist between these two activities, it is unclear whether masteragents will always appreciate the importance of agent monitoring and training and be prepared to engage.

Regardless of which stakeholder is ultimately selected, it's important that mobile operators retain control and oversight of their activities. Operators should insist on evaluation tools that are easily traceable, like checklists that must be completed for every agent visit, and develop management processes that will flag agents with problems so that they can be dealt with quickly. Operators should also quality check the entity responsible for agent oversight by conducting random "mystery shopper" visits to agents, and providing feedback to their representatives about those visits.

How can operators protect against abuse?

It is beyond the scope of this paper to comprehensively document every variety of fraud that has been observed in mobile money deployments. But it is worth noting the three broad types of abuse that can occur with the complicity of, or at the expense of, agents:

- **Money laundering and terrorist financing**
  Customers, agents, or both working together might seek to launder money or finance terrorist activities using a mobile money system.
- **Defrauding customers**
  Unscrupulous agents might attempt to defraud customers, sometimes by altering the fees they charge for providing a service, or more seriously by stealing a customer's money outright by, for example, faking a cash-in transaction.
- **Defrauding or abusing the system**
  Opportunities to abuse a mobile money system often stem from pricing and commission structures designed by operators. For instance, in cases where an agent has the opportunity to maximise their commissions by separating a single customer deposit or withdrawal into multiple smaller ones, they may attempt to do so. Customers, too, can abuse such loopholes: for instance, some customers may attempt to complete a money transfer without paying a fee by having the sender and recipient deposit and withdraw funds from the same account.

To effectively protect against the different types of fraud or abuse that might fall within these broad areas, operators can:

1. **Invest in agent training:** Well-trained agents are the first line of defence against various types of fraud or abuse. For instance, in the Philippines SMART Money and the central bank spend a full day training new agents and additional time supporting them. One outcome is a network of agents who consistently adhere to KYC processes, which virtually eliminates the opportunity for customers to obscure their identity when transacting.
2. **Scrutinise pricing and commission models:** When designing their pricing and commission models, prudent operators spend time considering the various ways that an unscrupulous agent or customer might attempt to 'game' the system and try to minimise opportunities for such abuse.
3. **Educate customers:** Customers can protect themselves from fraud if they abide by a few key rules, such as never disclosing their PIN and always insisting on receipt of an official SMS confirmation when cashing in. Operators should find ways of communicating these messages to users through channels other than agents, since it is agents who might try to exploit users' ignorance to commit fraud. Some operators do this using point-of-sale posters and marketing collateral in registration kits.
4. **Implement technology:** Back-end transaction monitoring can help identify other forms of fraud. In the Philippines, for example, GCASH has implemented a sophisticated fraud monitoring technology solution that has the ability to screen billions of transactions, identify suspicious transaction patterns and flag them for investigation.

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2.2 Bridges to Cash: the Retail End of M-PESA

The Challenge of Maintaining Liquidity for M-PESA Agent Networks

Frederik Eijkman, Jake Kendall, and Ignacio Mas[1]

M-PESA ("M" for mobile and "PESA" for money in Swahili) is a mobile money service promoted by Safaricom, the leading mobile operator in Kenya. The service provides a method of electronic payment accessible through mobile phones. Once customers deposit cash in their M-PESA accounts, they store the value as "e-float" – a form of electronic value issued by Safaricom – until they are ready to use it for transfers, buying airtime, or bill payments.

"De-materialising" cash into e-float offers benefits in terms of safety (reduced risk of theft or loss), convenience (less bulk, easier to send money remotely, lower transport costs, can purchase airtime and pay bills from the phone), and privacy. The core value proposition to customers is that M-PESA allows them to send money quickly and cheaply to distant business associates, friends, or relatives, a common need in Kenya where many families have some members working in urban areas.[2]

By solving this customer need, M-PESA has generated a large and loyal customer base. M-PESA is used by over 40% of Kenyan adults[3] and more than 95% of users report that M-PESA is faster, safer, cheaper, or more convenient than alternative services like those provided by banks, ATMs, the post office, or money transfer services offered through bus companies.[4] A full 84% of users claim that losing the service of M-PESA would have a large, negative effect on their lives.

The ability to quickly and conveniently withdraw cash or deposit cash is critical to achieving the high level of value that M-PESA delivers to its users. To access their accounts, customers exchange cash for e-float at a network of M-PESA retail stores (often referred to as sub-agents or agent points). There are some 16,000 agent points in Kenya, putting one within reach of most Kenyans. In fact many locations have multiple M-PESA agent points within a few hundred meters of each other. Keeping these agent points stocked with cash and e-float so that they can meet customers' needs for deposits and withdrawals is a major challenge, and the subject of this article.

How M-PESA mobile money works

To access the M-PESA service, customers must first register at an authorised M-PESA retail outlet. They are then assigned an individual electronic money account, or e-wallet, that is linked to their phone number and accessible through a SIM card-resident application on the mobile phone.[5] There is three-factor authentication of customers: through their mobile number (i.e. ownership of the SIM card inside the mobile phone), a user-selected personal identification number (PIN), and through their national ID card presented to the store teller at the time of the transaction.

M-PESA wallets are denominated in e-float backed 100% by liquid deposits held by Safaricom in fully regulated commercial banks – initially only the Commercial Bank of Africa (CBA), and now also Standard Chartered Bank (SCB). The interest from these balances accrues to a charitable foundation, and is not distributed to either Safaricom or M-PESA customers. All transactions are authorised and recorded in real time using secure SMS, and are capped at the equivalent of US$500.

Once transactions are confirmed, the account balances of sender and receiver are updated immediately to reflect the transfer, and the transferred funds are immediately available for use by the receiver. Both sender and receiver are sent an automated notification by the M-PESA server via text message confirming the transaction and stating their new account balances.

e-float is exchangeable for cash at designated M-PESA retail outlets. This is performed by pairing the handover of cash with an equal but opposite transfer of e-float between the M-PESA customer and

[1] Jake Kendall and Ignacio Mas are with the Financial Services for the Poor team at the Bill & Melinda Gates Foundation; Frederick Eijkman is co-founder of PEP Intermedius.The authors would like to thank Sheila Miller for being able editor and research assistant to this project and for her contributions to their thinking on key points. We owe the bridging analogy in the title of this paper to Paul Makin of Consult Hyperion. We are thankful for useful comments and suggestions from Crispin Bokea.

[2] The results of a survey of 3000 Kenyan households reported in Suri, Tavneet and William Jack (June 2008), shows that 53% of users report sending or receiving money as their main use of the service, while 44% of users report using it for saving money or buying airtime.

[3] FinAccess National Survey 2009.

[4] Suri, Tavneet and William Jack (June 2008).

[5] The Subscriber Identification Module (SIM) card is a smart card found inside mobile phones that are based on the GSM family of protocols. The SIM card contains encryption keys, secures the user's PIN on entry, and drives the phone's menu. The Short Messaging Service (SMS) is a data messaging channel available on GSM phones.

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the retailer. A deposit or cash in transaction entails a real-time transfer of e-float from the retailer to the customer in exchange for cash given to the retailer, while a withdrawal or cash out transaction requires that the customer transfer e-float to the retailer and receive cash in exchange. All e-float transfers – both cash in/out transactions and person to person (P2P) transfers between clients – are subject to availability of funds in the sender's account.

Liquidity in the M-PESA network

Given their higher frequency of transactions, retail outlets are given special e-wallets (or tills) with higher maximum account balances. This gives them more room for offsetting clients' cash-in transactions (which cause them to pay out e-float) and cash-out transactions (which cause them to accumulate e-float). Still, if the outlet performs too many cash-in transactions it will eventually run out of e-float, and if it performs too many cash out transactions it will run out of cash. In either case, the retailer will need to rebalance its liquidity: convert the excess e-float into cash, or vice versa. For that, they must go to the next rung up the cash distribution hierarchy.

Safaricom only buys and sells e-float from a select range of distributors (*agents*)[6] and banks (*super-agents*) with which it has signed an agency agreement. To buy (sell) e-float these agents must deposit (collect) the appropriate amount of money in (from) Safaricom's account at either of its custodian banks (CBA or SCB). Because of how the M-PESA system is set up and how interbank payments work in Kenya, it can take one or two days for such transactions to settle. Thus, the agent needs to have a sufficient balance of e-float to accommodate the potential liquidity needs of their stores for up to two days. This imposes a high working capital requirement cost on agents.

Agents in turn buy and sell e-float from the retail outlets (*sub-agents*) that depend from them. As with customers, a cash transaction between agent and sub-agent will be matched by an offsetting e-float transaction, with the agent taking the opposite side of whatever the store requires for its liquidity management purposes. The transfer of cash between the retailer and the agent may happen by the retailer visiting the agent's premises, or by the paying party depositing and withdrawing cash at the nearest bank branch where they both hold bank accounts. For the store, each rebalancing is likely to represent a trip, to either its agent head office or, more often, to the nearest bank branch. Additionally, if the transaction is done through a bank, the agent head office may also have to send an employee to the bank to deposit cash into the sub-agent's account, implying an extra cost to them.

Both retail outlets and agents are rewarded for their role in providing liquidity in the M-PESA system by Safaricom. They receive transaction commissions, so their income is directly proportional to the number of transactions they support. The average commission paid by Safaricom per cash in/out transaction is US 17¢ (pre-tax), of which the distributor will typically keep 20-30% and pass on the rest to the retail outlet. In many cases the M-PESA business also brings indirect benefits to retail outlets beyond the commissions earned on M-PESA itself, in the form of increased foot traffic into the store and a reputational 'bump' from the store's association with the powerful Safaricom brand.

The central importance of proper liquidity management for agent success

For poor people who operate in a cash economy, and whose income comes in the form of small lumps of cash, being able to cash in and cash out easily is a precondition for participation in a system such as M-PESA. The M-PESA retail outlets are therefore the bridges between the entrenched cash-based exchange system and the new electronic payments cloud. This network of bridges needs to be sufficiently dense geographically to offer the necessary convenience to all customers, and sufficiently resilient to meet whatever cash or e-float needs customers may have at any time. Proper liquidity management of the retail network goes to the heart of the usefulness and the trustworthiness of the M-PESA proposition. For the retailers, keeping customers supplied with e-float and cash is central to their business. In Box 1, we describe the activities of a typical M-PESA store owner, Gaudencia, in her daily rounds to keep her stores supplied with liquidity.

[6] The term agent can be confusing as it is often used interchangeably for the liquidity managers who contract with stores to manage their liquidity, and for the stores themselves.

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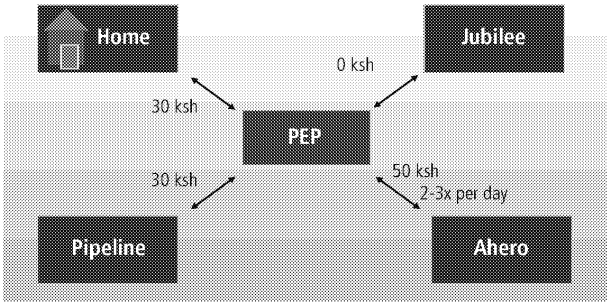
Box 1: Gaudencia – Professional Cash Transporter

Gaudencia is a 45 year old widower and mother of 3 children who owns three M-PESA stores near Kisumu in western Kenya. She is semi-literate (having achieved primary standard 4) speaks no English, and previous to getting into the M-PESA agent business, sold chickens in the Kisumu market.

One of her stores – Jubilee Market – is located in the Kisumu produce market. Her Ahero and Pipeline stores are located outside Kisumu, each at a distance of about 30 minutes by bus. The Jubilee and Ahero stores are staffed by her daughter and son, respectively. Gaudencia is constantly on the move, shuttling back and forth between her stores and the headquarters of PEP (the M-PESA distributor who manages her) to move cash and e-float where it's needed most. Like most agents, she understands that customer service – being able to provide cash or e-float when needed – is key to a business where there is likely to be another M-PESA agent literally in the adjacent shop (see Figure 2 which shows some stores are less than 5 meters apart, this is quite typical in Kenya). The fact that her son and daughter staff two of her three stores makes it easier for her to absent herself. Gaudencia's typical daily rounds are represented by the following diagram where the amounts are Kenyan Shillings and represent the one way bus fare associated with each leg of the trip.



In the morning, Gaudencia first travels from home to pick up cash at PEP (1), then walks from PEP to Jubilee Market and back (2), then back and forth to both Ahero (3) and Pipeline (4). She is usually finished with the full circuit by 2pm at which point she returns to Ahero for a second trip. On Tuesday, which is Ahero's market day, she starts with Ahero in the morning, and makes 3 full trips, in addition to the regular circuit, by the time the day is done. In the course of a day, Gaudencia can spend 300-375Ksh (US$4-$5) on bus fare (this would be a typical daily wage in Kisumu) and reports that the cost of travel in time and money are the most aggravating aspect of her day. On one leg of each visit she will be carrying cash to or from the store, and often the value of cash she carries exceeds 75,000Ksh (US$1,000). Despite the relatively large sums she carries, she has never been robbed and does not report feeling like security is a major risk. For her troubles, Gaudencia sometimes nets over 75,000Ksh (US$1,000) per month in transactional revenue from her 3 stores.

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Agent costs and risks in liquidity management

For stores, managing liquidity is the central aspect of their business. The following are a list of the main obstacles for stores (reported by PEP staff) in keeping enough cash and e-float on hand to satisfy customers:

Employee malfeasance: when rebalancing, store owners must almost always leave large amount of cash in the hands of employees, either by leaving the employee at the shop with the cash till, or by sending the employee to carry cash to or from PEP or the bank branch. Stores report high employee turnover which exacerbates the challenge of trusting employees with cash.

Physical security: carrying and storing cash on their premises exposes owners and their employees to the risk of being robbed. In the PEP network of 106 stores, there were 10 robberies last year.

Working capital: shop owners must invest anywhere from US$2000-$4,000 in e-float and cash. (PEP requires a minimum of US$2000 whereas the Safaricom minimum is closer to US$600). This is significant sum to generate for a Kenyan small business owner.

Travel costs and time: as the story of Gaudencia (Box 1) illustrates, costs of transporting cash can be upwards of US$4-5 dollars per day for a shop owner with multiple shops. Time is also a major factor, with some stores reporting 2 hours or more of round trip travel time.

Our sample of M-PESA retail outlets

This paper explores the liquidity needs of M-PESA outlets. We do so with the benefit of actual transactional data over a six-month period from a sample of 20 retail outlets managed by PEP Intermedius, an M-PESA agent operating in Western Kenya. This section describes the sample; in the next section we derive seven observations from the transactional data from these outlets which capture the essence of the agent business in Western Kenya. In the final section we derive three broad conclusions which follow from our analysis. These are the key factors that should be taken into account to ensure the sustainability of agent networks like M-PESA's.

About PEP Intermedius

PEP Intermedius is a private company owned partially by its two founders (one of whom, Frederik Eijkman, is a co-author of this paper). Its primary business is as a M-PESA agent, and it has a side-business in microcredit. PEP was founded in 2004 to do microfinance. However, having observed that the primary need of the local population was convenient and affordable cash availability, PEP began operating as an agent of M-PESA in 2007 when the service was launched. PEP has its headquarters office in Kisumu on Lake Victoria, and has 16 employees.

In its M-PESA business, PEP manages a total of 106 retail outlets, of which 8 are fully owned by PEP and the remainder are franchised (these are third party stores that conduct their M-PESA business through PEP as their agent).

Originally PEP opened their own stores targeting strategic locations. However they soon found that they could not keep up with the spread of other agent points due to the costs of finding, building, and staffing their own stores. This prompted the move to a franchise approach where they would accommodate store owners with the necessary capital allowing them to start on their own. The franchise model gave PEP an opportunity to expand rapidly and reduce the risks associated with store ownership and cash transit.

Introducing our sample of 20 stores

We started by defining four archetypal types of stores, based on their location and the kinds of clientele they attract:

- *City*: These are stores in the central business district of the provincial capital, Kisumu. The customers are typically white collar employees who work in the city center, as well as business people and out of town visitors who are in Kisumu for business, to make purchases, or to deal with government offices.
- *Urban*: These are stores located in or around two main markets, of which one near the main bus terminal and in Kisumu. There are many M-PESA agents within 100 meters of each other. Typical customers include local shop owners, travelers who are coming and going by bus, and wholesale traders who are in the market to buy or sell vegetables, fruits, and other goods for sales elsewhere.

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- *District*: These are stores in provincial market towns located on the main highways connecting Kisumu with Nairobi and other major towns in the region. These towns are not very populous but their markets get very busy with many traders and visitors coming from nearby rural villages to make purchases and conduct business.
- *Rural*: These are stores in small towns with a population of around 5000. They are often visited by rural customers from surrounding areas that do not have the money to travel to larger towns. These towns typically have only a few permanent structures housing mainly shops selling the most basic commodities and workshops for local artisans (carpenters, etc).

Figure 1 shows the location of the towns with stores in our sample within Western Kenya (marked with the PEP logo). Figure 2 lists the twenty stores in our sample, and offers some descriptive characteristics for each. M-PESA constitutes the main business for all the stores. Most have been offering M-PESA for at least two years. All but two stores have a competitor within 100 meters.

All the ten stores in Kisumu (those in the urban and city categories) rebalance their liquidity by going into the PEP headquarters in downtown Kisumu. The most distant one is 2 kilometers away, but the majority is within 10 to 15 minutes of PEP headquarters. Half the stores outside of Kisumu are in towns with a bank branch and are able to rebalance their liquidity locally. However, four stores are 20-60 kilometers away from the nearest branch. For these distant stores, cash management is especially difficult. Shop owners have to leave the management of the store in the hands of an employee, or send an employee to rebalance. In either case, the manager will be faced with leaving the employee alone with cash representing a large multiple of their monthly salary. Additionally, round trip travel time can be an hour or more at a round trip cost of US$2-3.

For each store in the sample, we collected daily M-PESA transaction data for the period of July 2009 to December 2009. Figure 2 shows some summary trading statistics for each store. The first five numerical columns relate to M-PESA transactions undertaken by clients: the average daily value of transactions, the average daily number of deposits (cash-in) and withdrawals (cash-out), and the average deposit and withdrawal transaction sizes. The last column is the average number of liquidity rebalancing transactions each store conducted daily with PEP as their M-PESA agent.

Figure 1: Locations of of PEP stores in our sample, around Kisumu near Lake Victoria in Western Kenya

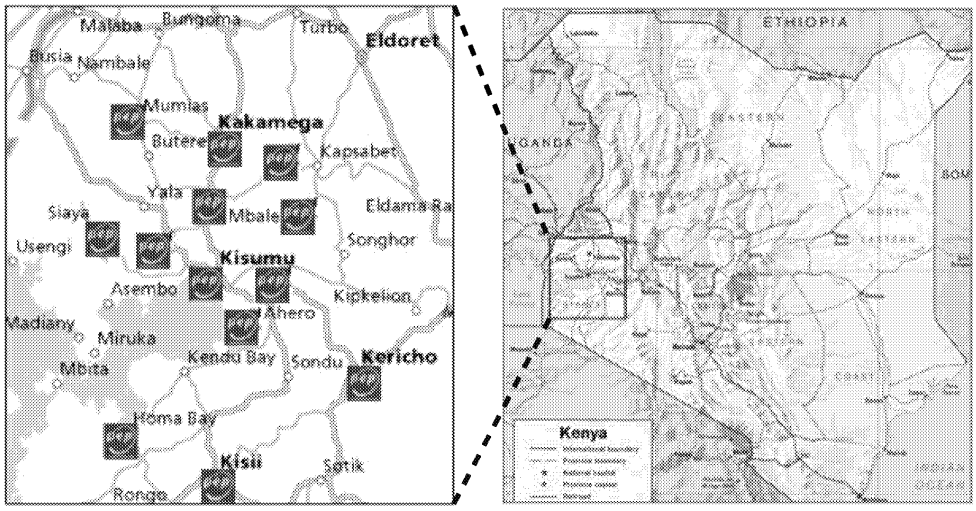

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Figure 2: A snapshot of the 20 stores in the sample

Store	Name of town & population	Type of location & ownership	Distance to nearest M-PESA shop	Distance to bank or PEP HQ	Main/side business of Store	Store Location	Time as agent
Ahero	Ahero 10k pop	District, franchise	5m	60min / 25km	M-PESA	Kiosk	2 yrs
Cash Joint	Kisumu 350k pop	City, franchise	10m	200m to PEP	M-PESA	Kiosk	2.5 yrs
Cyber Centre	Kisumu 350k pop	Urban, franchise	50m	15min to PEP	M-PESA Beauty Prods.	Kiosk	2 yrs
Flamagras	Kisumu 350k pop	City, franchise	40m	400m to PEP	M-PESA Hair saloon	Store	2.5 yrs
Homa Bay	Homa Bay 20k pop	District, owned	6m	5min to Bank	M-PESA	Kiosk	3 yrs
Jubilee	Kisumu 350k pop	Urban, franchise	50m	15min to PEP	M-PESA	Kiosk	2 yrs
Katito	Katito 5k pop	Rural, franchise	100m	60min to PEP	M-PESA Soda's	Store	1 yr
Kibuye	Kisumu 350k pop	Urban, franchise	50m	15min to PEP	M-PESA	Kiosk	2 yrs
Lake Market	Kisumu 350k pop	City, franchise	10m	150m to PEP	M-PESA Beauty prods.	Kiosk	2.5 yrs
Luanda	Luanda 10k pop	District, owned	5m	5min to Bank	M-PESA	Store	2.5 yrs
Noble	Kisumu 350k pop	City, franchise	50m	200m to PEP	M-PESA Photo copying	Store	2.5 yrs
Nyagande	Nyagande 5k pop	Rural, franchise	300m	90min / 30km	M-PESA	Kiosk	1 yr
One Stop	Kisumu 350k pop	Urban, franchise	50m	15min to PEP	M-PESA Photo copying	Kiosk	2 yrs
Paw Akuche	Holo 5k pop	Rural, owned	100m	45min / 20km	M-PESA	Store	2.5 yrs
PEP HQ	Kisumu 350k pop	City, owned		0 to PEP	M-PESA Micro lending	Office	3 yrs
Serem	Serem 10k pop	Rural, franchise	50m	5min to Bank	M-PESA	Store	1 yr
Shop 786	Kisumu 350k pop	Urban, franchise	50m	15min to PEP	M-PESA	Store	2 yrs
Siaya	Siaya 20k pop	District, owned	300m	5 min to Bank	M-PESA	Store	3 yrs
Usenge	Usenge 5k pop	Rural, franchise	100m	2hrs / 60km	M-PESA	Kiosk	1 yr
Vihiga	Mbale 20k pop	District, owned	20m	5min to Bank	M-PESA	Store	3 yrs

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Figure 3: Summary tradings statistics for the 20 stores in our sample

Store Name	Location	Average Daily Volume	Deposits		Withdrawals		PEP Transactions
			Ave. #/day	Ave. Tx. Size	Ave. #/day	Ave. Tx. Size	Ave. #/day
Cash Joint	city	$7,210	90	$54	58	$40	2.9
Flamagras	city	$3,003	37	$52	25	$42	2.7
Lake Market	city	$14,532	126	$78	82	$55	4.6
Noble	city	$2,105	30	$41	21	$41	0.6
PepHQ	city	$3,136	22	$86	16	$77	1.4
Ahero	district	$5,001	29	$36	107	$37	2.7
Homa Bay	district	$4,316	38	$58	33	$64	0.4
Luanda	district	$3,023	4	$13	103	$29	1.8
Siaya	district	$3,148	12	$41	50	$53	1.6
Vihiga	district	$3,311	24	$36	71	$35	1.4
Katito	rural	$2,313	31	$27	88	$17	1.1
Nyagande	rural	$853	6	$18	38	$19	0.5
Paw Akuche	rural	$2,390	11	$22	65	$33	1.7
Serem	rural	$3,250	19	$41	74	$34	1.2
Usenge	rural	$1,314	11	$37	19	$57	0.3
Cyber Centre	urban	$6,594	86	$38	88	$38	2.4
Jubilee Market	urban	$2,239	43	$31	35	$26	1.6
Kibuye	urban	$2,667	42	$28	47	$31	1.1
OneStop	urban	$2,154	25	$44	25	$42	0.6
Chop 786	urban	$3,203	43	$34	53	$33	1.1

*Note: Volumes in $ (75Ksh = $1). These averages were calculated excluding Sundays when most stores are closed.

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Stylised observations from the store trading data

The analysis of daily transaction data for the stores in our sample revealed seven key patterns and insights.

1. Agent liquidity management is costly: stores need to rebalance their liquidity holdings daily

Figure 4: Number of transactions with PEP per store per trading day, by type of store

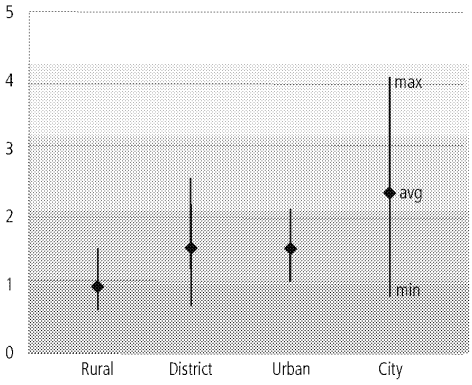
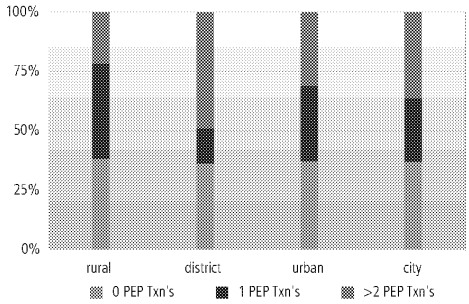


Figure 5: Frequency with which stores transact with PEP per trading day, by type of store



Most stores make at least one daily journey to rebalance the M-PESA agent's holding of cash and float. Figure 4 shows the frequency with which outlets must rebalance their cash holdings by buying or selling e-float from PEP. Stores in rural markets do so on average daily, stores in district and urban markets do so on average 1.5 times per day, and stores in the city centre do so on average 2.5 times a day. Looking at individual stores, there is a lot of variance, especially for city centre stores as one of them had to rebalance as much as four times per day on average.

Figure 5 looks at the store rebalancing frequency in more detail. On average, all types of stores avoid having to rebalance their liquidity on around 40% of days (these include many weekend days when stores are not open or face slower demand)[7]. Of the remaining 60% of days, stores in rural markets are twice more likely to have to rebalance only once in the day, whereas for the other types of store they are more likely to have to rebalance more than once in the day. District stores are the ones which most frequently need to rebalance twice a day or more, owing partly to the larger transaction sizes.

For rural stores, where remittances drive a predictable need for cash every day, store owners or employees often make a trip in the morning to exchange the e-float built up the previous day with cash for the coming day. For rural and district stores at a great distance to PEP or a bank branch, this often implies an hour or two of travel time each way and so they often arrive at 10 or 11 am to get cash at PEP and return to the village. For these distant stores, multiple trips per day are prohibitively time consuming so they do their best to make just one per day. In the city and urban areas, most stores are a 5-10 minute walk from PEP HQ and so can make frequent trips throughout the day. This is fortunate, because the city and urban center stores also face more uncertain cash needs, sometimes needing to sell e-float for cash, and sometimes needing to buy more e-float. In these stores, just a few large transactions, e.g. by merchants paying their suppliers, can tip the balance one way or the other triggering a trip to PEP. Box 2 describes three actual trips to get cash and the costs and difficulties associated with each.

[7] PEP HQ is open and available for transactions 7 days a week.

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Box 2: Three trips to rebalance cash and e-float

The following are three examples of stores' daily cash or e-float buying trips, representing a typical level of cost, risk, and difficulty for the store owners.

Paw Akuche is a PEP-owned store located in a rural village about 40 minutes by bus from Kisumu and PEP headquarters. Round trip bus fare is 200Ksh. Lilian, one of the store's two employees, lives in Kisumu and so can stop by PEP on her way to work (PEP is nice enough to pay her bus fare because this is a PEP-owned store). On Tuesdays (which are market days in the village) and on other heavy transaction days, Lilian must make an additional trip into Kisumu to get more cash, leaving Gladys the store manager to deal with the customers by herself. Store owners often look for creative arrangements to move cash, such as having a store employee get it on the way to work, but these arrangements often depend on the employee staying with the store and require that owners find someone they can trust.

Cyber Center is no more than a 10 minute walk or 2 minute scooter ride to the PEP center (scooter rides cost 10Ksh or 13¢). This allows Cyber Center to rebalance an average of 2.8 times per working day (see Figure 3), one of the more frequent in our sample. The only time when a trip to PEP is inconvenient is when the owner, Betty, is away in which case if they need e-float they can phone in a request to PEP and pay cash at the end of the day (here PEP is essentially loaning them working capital for the day at zero interest). If they need cash, they would be forced to close the store for 15 minutes and surely lose a few customers while they were away.

Luanda is a District store, located an hour or so from Kisumu by bus but only 5 minutes away from a local CBK branch. Despite the convention location, sending or receiving cash through a bank branch is more difficult for an agent and can require one of the PEP HQ staff to make a simultaneous trip to the bank on the other end where there may be lines and other delays of up to 3-4 hours while the cash is moved between the agent's account and PEP's. As most M-PESA agents are open till 7pm or later, a surge of customers late in the day can leave them stranded for cash if the bank branch has already closed. This has happened to Luanda on a few occasions.

2. Rural areas do fewer and smaller transactions; in the city center transactions are much larger

Figure 6: Average number of client transactions per store per trading day

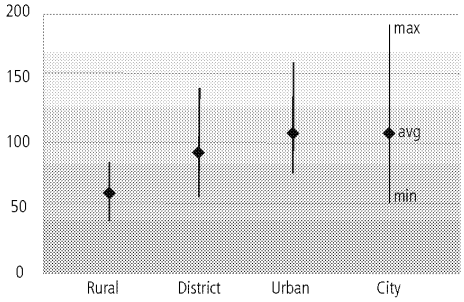

Figure 7: Average client transaction size, in Ksh

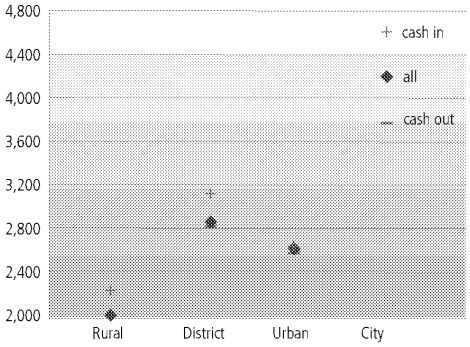

Figure 6 shows the average number of client transactions stores do in a typical day. While a typical rural market store does just over 50 transactions per day, stores in Kisumu (urban and city) do twice as many. District stores located in busy road-side markets transact volumes that are closer to the urban markets. There is also a much wider range of transactions by store in Kisumu which reflects the greater variety of customer needs. In rural areas, most customers are villagers receiving similarly sized remittances from city relatives, whereas in the city center stores, the transactions of contractors, small businesses, merchants, and traders are mixed in with remittance transactions.

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At a commission of roughly 10¢ per transaction accruing after tax to the store, this volume of business translates into daily revenue to the store of US$5 for rural stores doing 50 transactions daily and US$10 for stores doing 100 transactions. At the very upper end of the range, Lake Market store in the city center averaged over US$30 a day on its best month (See Box 3 for more on Lake Market).

Figure 7 shows the average M-PESA transaction size in Kenyan shilling that stores undertake on behalf of their customers. Predictably, stores in rural markets tend to do much smaller transactions, averaging 2000Ksh (US$27). Typical transactions at city centre stores are more than double this amount, reflecting the fact that many merchants and traders use M-PESA to pay suppliers or contractors and receive payment for large volumes of goods. Transaction sizes are larger in district towns than in urban stores largely due to the fact that markets in towns are weekly rather than daily implying that customers are making bulk purchases to satisfy their needs for the week. In urban areas, customers tend to be richer but are usually transacting to satisfy daily shopping needs rather than weekly. Cash in and cash out transactions tend to be of very similar sizes on average, except for city centre stores where cash in transactions are typically 30% larger in size than cash out transactions. One factor driving these larger cash out transactions is the large payments made by merchants to suppliers and workers.

3. Reflecting domestic remittance patterns, rural areas are strongly cash out, whereas urban areas tend to be more cash in

Figure 8: Average daily values of client transactions in Ksh '000

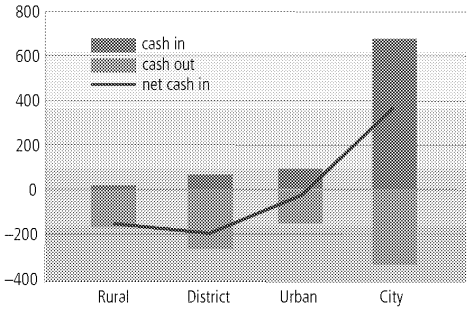

Figure 9: Frequency of days in which stores need to rebalance their liquidity holdings with PEP

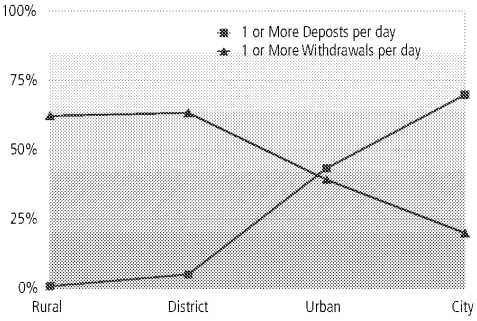

Figure 8 shows the average daily value of client transactions at different types of stores. Stores in rural markets trade on average 172,000Ksh (US$2,300) per day, of which 90% is cash out. District market stores typically trade twice as much, but still have a preponderance of cash out. Stores in urban markets are roughly balanced between cash in and cash out, while stores in Kisumu city centre trade much larger volumes (360,000Ksh or US$13,000) and are predominantly used for cash in. This shows that a fundamental trend in M-PESA usage is to transfer balances from city to rural environments.

Figure 9 looks at the implications of this spatial differentiation between stores in terms of their liquidity rebalancing requirements. Most stores do need to rebalance daily, ranging from 76% of days for city centre stores to 62% for rural stores). Stores in rural markets need to sell e-float from PEP (withdraw cash), while stores in the city centre need to buy e-float from PEP (deposit cash) much more often.

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Figure 10: Average total daily transaction size for urban stores

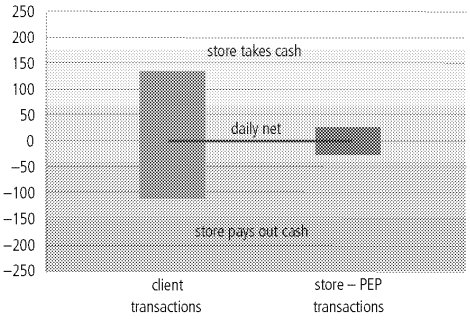

Figure 11: Percentage of days when agent both deposited AND withdrew from PEP on the same day

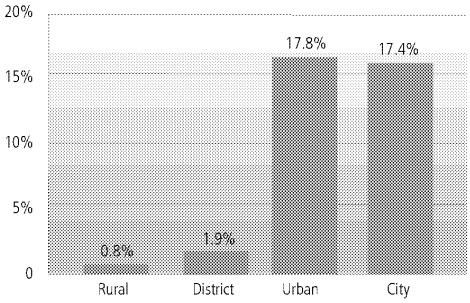

Figure 10 looks more closely at the trading patterns of urban stores. The daily net cash in/out from customers' transactions is essentially zero, and this matches the daily net rebalancing transactions with PEP. However, this balance masks intra-day variations in the types of customer transactions undertaken. Figure 11 shows that for urban and city-centre stores, they needed to rebalance their liquidity at least twice, once buying and once selling e-float to PEP on almost 20% of days. Partly, urban and city stores have the luxury of more frequent rebalancing, given their proximity to PEP, but they are also less able to predict net cash needs given the greater variance in transaction sizes and more even mix of cash in with cash out. By contrast rural and district stores almost always need to fund excess cash withdrawals and thus have a predictable need for cash.

4. Rural and District stores hold more float at the end of the day

Figure 12: End of day float as a percentage of the store's average daily transaction volumes – averaged by store type.

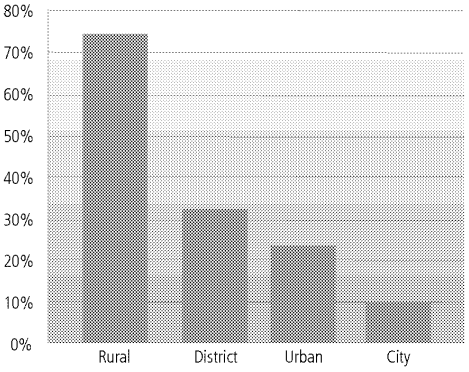

Figure 12 shows the e-float remaining at the end of the day, as a percentage of the stores' average daily transaction volume, which is over 70% for rural stores. The rural stores are essentially cash salesmen who sell cash throughout the day to build up a stock of e-float, which they then trade in again for cash the next morning (see also Figure 8).[9] In contrast, the urban and city area stores are traders, buying and selling e-float and cash in more equal measure and rebalancing more frequently in the middle of the day (implying that the ratio of float to transaction volume should be lower as they turn over their float more often.) Additionally, because some rural and district stores find it more difficult and costly to get cash, they can invest more in working capital as a percent of transaction volume (the combination of cash and e-float) and thus may have more e-float on hand at any given time.

Figure 13 shows that rural and district stores hold more e-float in absolute value at the end of the day as well (though because we don't know how much end of day cash they had, their end of day e-float balance does not necessarily reflect their working capital invested.)

[8] In the city center there are more wage earners sending money home, thus the greater number of cash in transactions. Additionally, many small businesses, traders, and contractors use M-PESA to pay employees, suppliers, and each other which drives larger transactions - both cash in and cash out.

[9] Conversations with PEP staff revealed that district stores would also have had a higher average end-of-day balance relative to transaction volume, nearer to the 70% that rural stores have, except that many of the district stores in our sample are PEP-owned and therefore transfer their e-float balance to PEP at the end of the day so that their merchant account is basically empty when employees go home.

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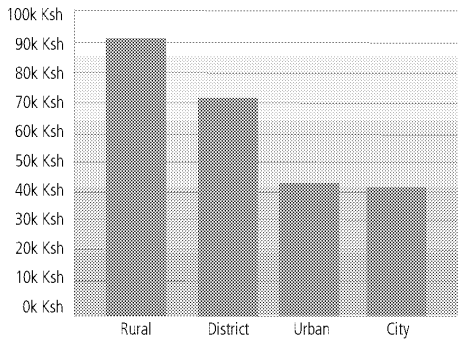
Figure 13: End of day float in absolute terms – averaged by store type



5. Market days drive substantial transaction volumes

Figure 14: Average daily client transaction volume by day of week for rural stores, as percent of weekly average

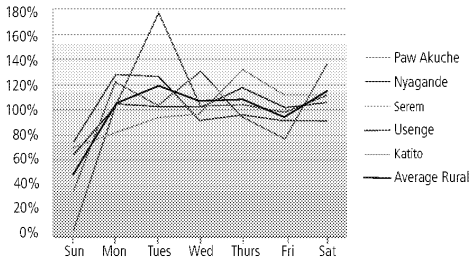
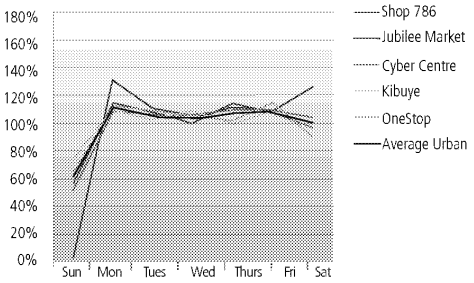


Figure 15: Average daily client transaction volume by day of week for urban stores, as percent of weekly average



Figures 14 and 15 show the deviation in daily client transaction volumes by day of week (relative to the daily average over the entire six month period) for stores in rural and urban markets, respectively. Sunday is a weak trading day, especially in rural towns, and many store owners are not even open. Rural towns typically have weekly markets, and so trading tends to be more concentrated on particular days of the week (Mondays and Tuesdays in Usenge, Tuesdays in Paw Akuche, Thursdays in Nyagande and Katito, Wednesdays and Saturdays in Serem). Urban markets are open daily (except Sundays) and hence trading is much more equally spaced across the week.

6. There are important monthly variations

Figure 16: Intra-month variation in client transactions (percent daily variation in the median store trading volume in KSh by day of month, excluding Sundays and Christmas when most stores are closed)[10]

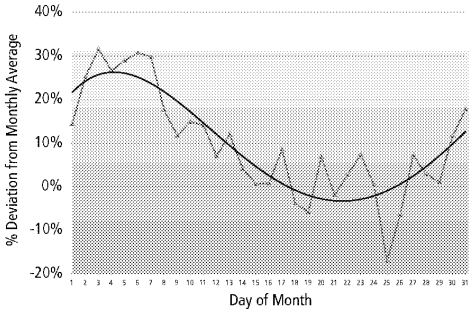
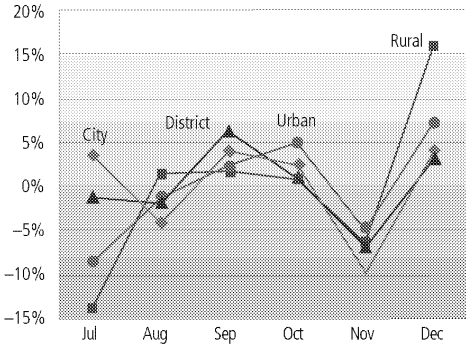


Figure 17: Variation in client transactions by month (monthly trading volume in KSh across all stores, as percent of period-wide average trading volume)



[10] Each "day" on this graph reports the median value of the stores' percent deviation from their monthly averages for that day for the combined 6 months of data.

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Figure 16 shows the deviation in daily client transaction volumes by the day of the month (again, relative to the daily average over the entire six month period). There is a clear peak during the first week of the month, when salaries are typically paid. The variation from peak to trough can be as much as 40 percentage points driving a wide variation in cash needs and store profits over the course of the month.

Figure 17 shows the evolution of the daily trading volume by month over a six month sample period. Monthly oscillations are driven primarily by seasonal variations in the local business cycle which are particularly large for rural stores.[11] Customers appear to undertake more withdrawals in December around the Christmas holiday, more than compensating for a decline in transaction volumes in November. Many Kenyans from other parts of the country travel back to their family homes in and around Kisumu for the holidays. In December they will often transfer cash to relatives or to themselves before they leave so that they can withdraw it when they arrive in Kisumu. Much of the dip in November appears to be related to thrift in advance of the Christmas holidays and the fact that many relatives who would send cash save it to bring in person in December.

7. There is substantial business volatility week-on-week, especially in non-urban environments

Figure 18: Volatility in weekly client transaction volumes (weekly coefficient of variation)

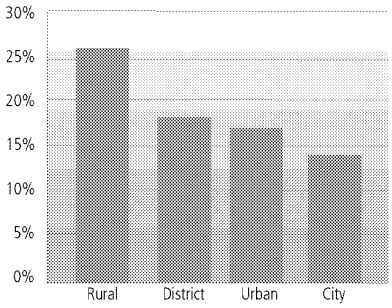

Figure 18 shows the volatility in weekly client transactions volumes.[12] It shows that the business is most volatile in rural and district markets and least in the city centre. In rural and district stores, the number of transactions per week (the best indicator of weekly store revenues) regularly varies by up to about 20% from the average.[13] For store owners, this represents significant variation in their earnings.

8. The importance of customer service and service continuity

Figure 19: Daily transaction volume for Shop 786 (Ksh '000)

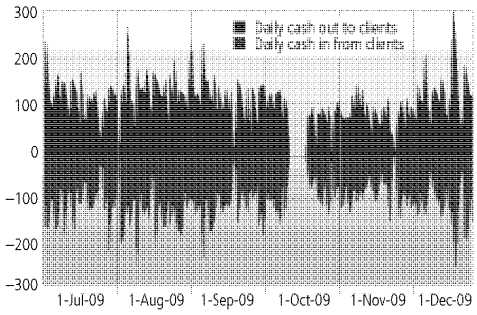

Figure 19 shows daily transaction volumes for a particular urban market shop, Shop 786. In October 2009, the store was suspended by PEP from doing any transactions for one week because of some minor violations in their practices (they were not following proper procedures in checking customer IDs) The trading volumes show that, even after it was allowed to resume business, it took a few weeks for the store to recover the volume of business it had been transacting prior to the suspension. This is probably attributable to the fact that customers penalised Store 786 for not offering reliably continuous service and started going to other stores nearby (including two other PEP stores which are marked in the satellite photo in Figure 20). Conversations with M-PESA clients often confirm that service reliability is one of the most important attributes for an M-PESA outlet.

[11] The large dip in July is related to the fact that government budgets are being reset at that time which slows government spending to a crawl and causes a drop off in business activity across Kenya.

[12] This is based on the weekly number of transactions, and is computed as the standard deviation divided by the average over the six-month sample period. The coefficient of variation has been computed on weekly rather than daily transaction volumes in order to abstract from day-of-week effects which are particularly marked in rural markets as described in Figure 18.

[13] Though the monthly cycle drives some of the variation in the business for all stores, it does not appear to drive the greater variation in rural store transactions vs. the other store types, which appears to be more a fundamental feature of the rural customer base.

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Figure 20: Location of three urban shops around Kisumu central market

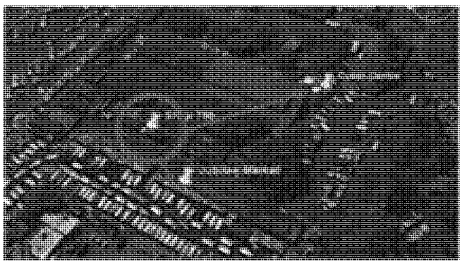


Figure 21 shows daily client transaction volumes for the Lake Market store, which is located in a prime location in the central business district of Kisumu. This can be contrasted against the average client transaction volumes for the other four city-center stores for all the other stores in Kisumu city center (see Figure 22). Lake Market does several multiples the volume of business of the other stores both due to its location but also due to its fastidious attention to customer service and investments in working capital (see Box 3).

Figure 21: Daily transaction volume for Lake Market (Ksh '000)

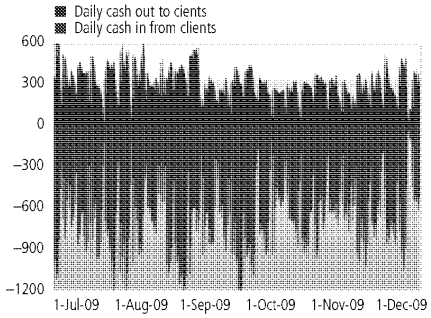
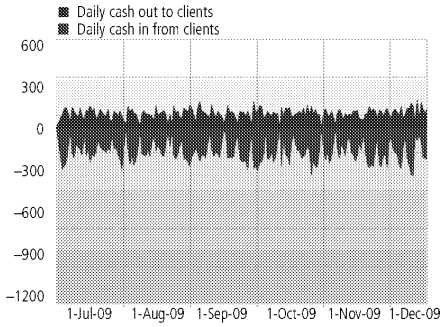
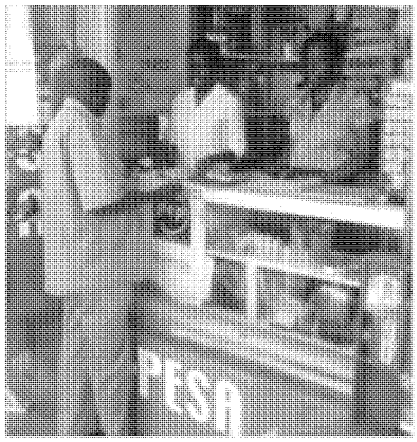


Figure 22: Daily transaction volume for the other four city-centre shops (Ksh '000)



Box 3: Lake Market store

Lake Market Store is located in the heart of the city center and just across from the district offices of the local power company Kenya Power and Light (KPL) which is good for business for a variety of reasons: customers often need to deposit to pay their bills using M-PESA; KPL sometimes pays employees with M-PESA; and KPL contractors often need to deposit to pay their sub-contractors, suppliers, and day laborers.



But in the M-PESA agent business, location isn't everything. Mollie Achieng, the owner of Lake Market reports that they have invested nearly 300,000Ksh (US$4,000) in e-float working capital, twice the amount that PEP requires of its stores (and even still, they visit PEP 5 or more times per day.) Because of this investment, Mollie has a reputation for always being able to meet the cash and float needs of her customers. She has also invested in a phone for customers to use who don't own one (some only have a SIM card). She has even gained her customers' trust to the extent that when the M-PESA system is down for a few hours, or even just when the line in front of her store is long, busy customers will show their ID and drop envelopes of cash with the clerk for processing later when the system is back up. Thus, due to high levels of customer satisfaction and trust, Lake Market is able to continue operating – and continue earning commissions – even when the M-PESA system is down.

Due to the high volume of customers, Lake Market sometimes grosses over 100,000Ksh in a month (US$1300) of which they might take home 65,000Ksh (US$850) after taxes and PEP fees.[14]

[14] Mollie reports that her main business expenses are one employee salary of 6,000Ksh (US$80) and rent of 10,000Ksh (US$130), leaving a substantial profit.

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9. There are some remarkable differences in customer population across agents

Figure 23: Scatter plot of average number of client transactions and average transaction size across all stores

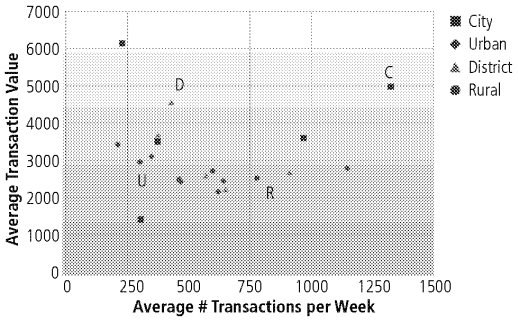

Figure 23 shows a scatter plot between the average number of client transactions per week and the average client transaction size for all the stores in our sample, two basic metrics that characterise the customer base that the stores see. The dispersion of stores shows clearly, with no definitive trends emerging. Urban and city stores tend to have more transactions, while district and city stores tend to have higher transaction sizes. But there is a wide variation in store activity within each of these categories driven by the specific circumstances of individual stores. Each M-PESA agent location has its own unique features and customer population.

Conclusions

From the nine observations listed above, we can draw three high-level conclusions:

- *Stores require quite intense daily liquidity management support.* They must rebalance on at least 60% of days (almost every day that they are open), and often several times per day. This represents a significant cost to stores, as a clerk must leave the store to carry or pick up cash. In the introduction, the section titled "Agent costs and risks in liquidity management" gives greater detail on the main costs to agents of providing liquidity.

- *Rural areas face greater difficulties.* Rural stores face special challenges as they have to deal with a triple whammy: (*i*) their commissions are typically lower because they handle fewer and smaller transactions; (*ii*) their transactions tend to be more lopsided towards cash out reflecting typical transfer patterns from urban to rural areas, so they have fewer opportunities for customer transactions naturally offsetting each other; and (*iii*) they tend to be located much further away from bank branches, which increases their travel and time costs each time they need to rebalance their liquidity. It would be appropriate to compensate these adverse effects with higher per-transaction commissions for rural stores. In the M-PESA context this happens naturally, insofar as withdrawal transactions incur a higher commission than equivalently-sized deposit transactions (total channel commissions of 10Ksh versus 15Ksh, respectively, for transactions of less than 2500Ksh). Since rural stores deal with predominantly cash out transactions, they benefit from this commission asymmetry.

- *There is evidence of market discipline between stores.* Customers face choice in their selection of M-PESA outlets. Figure 2 shows that most stores are within 100 meters of another M-PESA outlet. They seem to exercise this choice deliberately, favoring certain stores offering exceptional service with substantial trading volumes despite their being other stores nearby (see Box 3 on the Lake Market Store). On the other hand, customers seem to punish stores that are not able to offer consistent service levels. The example of Shop 786 (see Figure 20) which appears to have been disciplined by customers for shutting down for 4 days shows the importance of market discipline.

References

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Jack, Billy and Tavneet Suri (2009), "Mobile Money: the Economics of M-PESA." Unpublished paper, October.

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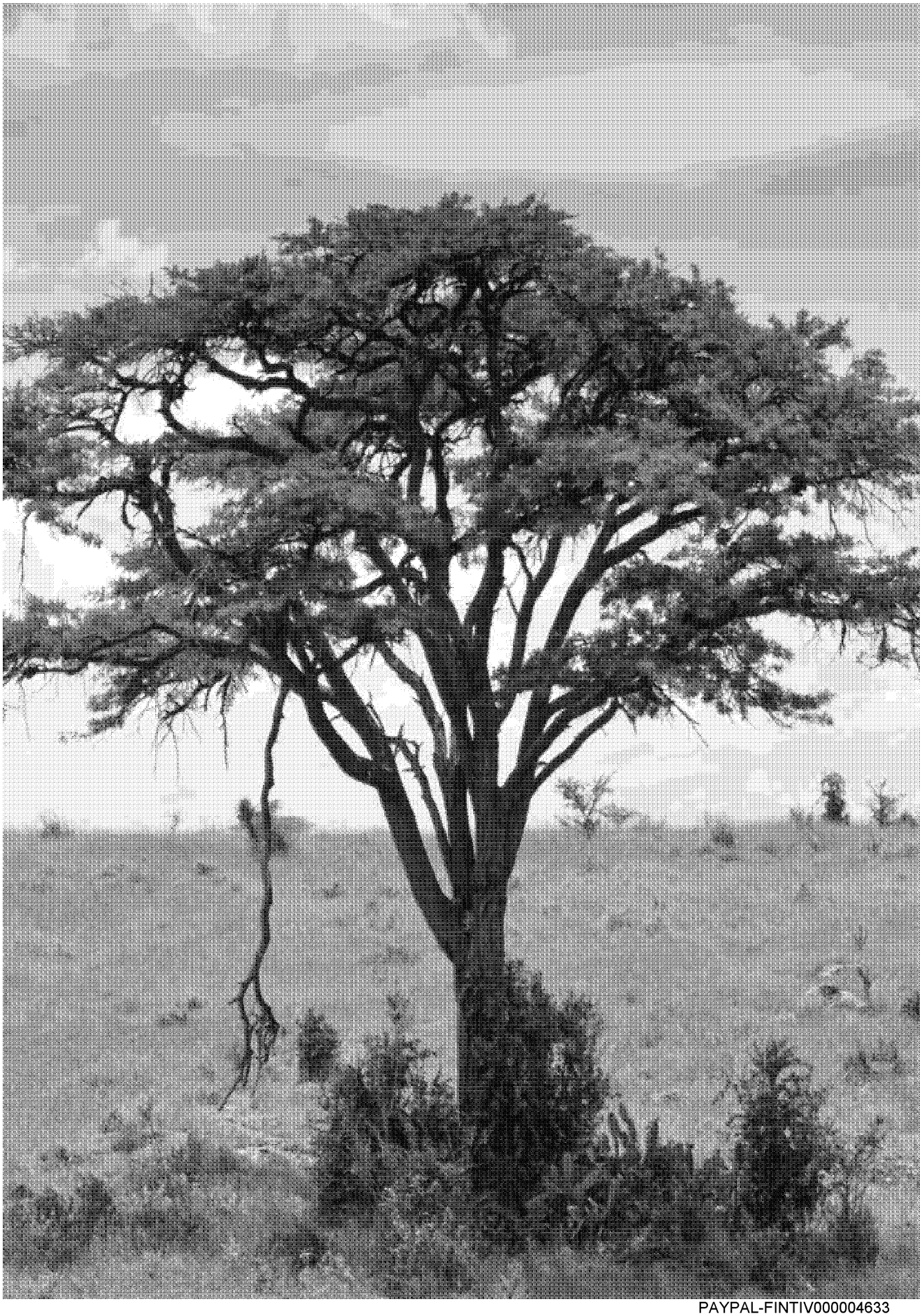

3 Case Studies

3.1 A Closer Look at 'Zap' in East Africa

This year at Mobile World Congress, Zain was presented with the 'Mobile Money for the Unbanked' Award for 'Zap', their mobile money service that was introduced in February 2009. In just one year, Zap has become the most widely available mobile money service in the world, with deployments in Bahrain, Kenya, Tanzania, Sierra Leone, Ghana, Niger, Malawi and Uganda.

But while Zain's desire to make Zap ubiquitous is clear, so far their approach to designing mobile money ecosystems has been less well documented – and perhaps a bit misunderstood. This does not come as a complete surprise: Zain has a vision for Zap that differs from the likes of M-PESA, MTN MobileMoney and their other major competitors in just about every way.

Zain's most dramatic departure from competitors – one that impacts nearly every element of their deployments – is their philosophy that Zap ecosystems should be entirely cash-free. To illustrate how this approach has fared in practice so far, this case study will examine the core elements of Zap deployments in East Africa: organisational design, service design, marketing, and building agent networks and bank partnerships.

The State of Zap in East Africa

Zap deployments across East Africa are at a critical juncture. All have signed up a significant number of customers and laid the groundwork – to varying degrees – for future success, but so far the number of registered customers regularly performing transactions is low. This is a challenge many deployments face, but in Zain's case it has come about for two distinct reasons.

First, their strategy of building cash-free ecosystems requires engagement with a greater number of players than traditional models, which is an inherently longer process. Second, Zain has invested in some areas, like registering customers and building a robust technology solution, but critically, they have underinvested in team resources, marketing, customer education, and management of agent networks – all of which have contributed to the low rate of usage for the service.

Clearly, there is an inconsistency between Zain's approach to service design – which is more ambitious in its aims than other mobile money deployments – and the way they have funded their deployments. However, Zain still has a strong opportunity to capitalise on the Zap team's early successes by investing aggressively in the service in 2010.

Despite all this, Zap still merits study; the team's approach to partnering with banks has led to a uniquely collaborative engagement model with the financial sector; their efforts to leverage SIM registration initiatives in Tanzania and Uganda have been a strategic driver of customer registration; and their distribution settlement mechanism is distinctive within Africa.

Key market data			
	Tanzania	**Uganda**	**Kenya**
Population	42 million	32 million	38 million
Mobile Penetration	45%	39%	56%
Zain Market Share	30%	18%	11%
Main Competitor (Share)	Vodacom (39%)	MTN (43%)	Safaricom (79%)
Zap Launch Date	February 2009	July 2009	February 2009
Zap Registered Users	4,000,000	250,000	1,000,000

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Organisational Design

One decision above all has played a particularly important role in shaping the first chapter of Zap's history: Zain's willingness to provide OPCOs with autonomy to design and invest in local market solutions.

Enabling Zain OPCOs to launch Zap in a suitable way for their market

Whereas many mobile money deployments are strongly influenced by group-level decision making, Zain has provided OPCOs with an enormous amount of autonomy when it comes to Zap. In their own words, Zain has "simply created a 'flexible service in a box' that our OPCOs can deploy at their own pace and in their own way."[1]

Thus, each Zain OPCO has the discretion to first decide whether they'll launch Zap in their market, and if so, on what timeline. As a result, markets like Sierra Leone and Malawi, which are comparatively small markets for Zain (both in terms of population and mobile subscribers), have been among the first to launch Zap on the basis of their eager interest.

Beyond determining when Zap will launch in their market, each OPCO also influences service design. This decentralisation of power accounts for the slight differences in the way Zap has been implemented in each country, as OPCOs customise the service to their unique market conditions. For instance, in Kenya – where M-PESA has conditioned an entire market that cash-in should be free – the Zap team recently eliminated fees for cash-in. Or in Uganda, the team has kept Zap transactions between registered Zain users instead of opening the service up across networks, something that has been implemented in other East African countries. Of course, at a group level Zain still provides oversight where it's necessary, making sure each deployment implements key controls, and striving to inculcate a common service design philosophy that defines the core of each deployment – but their approach still differs from competitors, who typically favour more uniformity across markets.

Challenges securing investment for Zap

But just as OPCOs are the ones who ultimately control what Zap will look like in their market; they also dictate how much financial support the service will be offered. Unfortunately, when Zap launched in Tanzania and Kenya in February 2009, Zain group had not yet seen an M-PESA-like success story of their own to guide – or inspire – investment in the same way that Vodafone had. And further, Zain had not received the same type of external support that other operator groups like Vodafone, who received nearly £1,000,000 from the UK's Department for International Development (DFID), had prior to launch.[2]

Consequently, some OPCOs have invested too little in Zap, and this has manifested in two detrimental factors: dedicated Zap teams that are too small, and insufficient marketing budgets to educate consumers. For instance, in Tanzania the core Zap team at launch – and for the following 8 months – consisted of just two dedicated resources. Likewise in Uganda the team consists of just four dedicated resources. By comparison, GCASH in the Philippines had 15 dedicated staff prior to launch and have since grown to 40 to support their scale. This shortage of staff – and lack of budget to outsource – has hamstrung the Zap team's ability to effectively recruit, train and manage their agent network. Equally, Zap in Tanzania has suffered from an insufficient ongoing marketing budget needed to educate customers.

How Zap's Peers are Staffed

EASYPAISA (Pakistan): The service was launched in 2009 with the support of 31 dedicated staff from Telenor and 40 from Tameer – not counting shared resources from both organisations.

GCASH (Philippines): The service was launched with a dedicated team of 15 in 2004, and has since grown to 40. GXI also rely heavily on outsourced personnel – both at launch and today.

M-PESA (Tanzania): The dedicated M-PESA team is currently 14, including resources from sales, finance and operations. For many months, Vodacom also worked with Afrikings, an outsourced agency, to manage their agent network.

MTN MobileMoney (Uganda): Launched in 2009 with 14 permanent staff, the service is now delivered by a core team of 31 permanent staff and 14 temps.

[1] This flexibility has also made it easier for Zap to integrate with external partners.
[2] M-PESA: Mobile Money for the "Unbanked", Nick Hughes and Susie Lonie, 2009.

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But despite launching with too few staff and a very tight budget, the Zap team has still accumulated some impressive wins. Coupled with recent international recognition for the service, Zain OPCOs are finally starting to provide Zap with the investment it needs to truly achieve scale. For instance, in the last few months, the Zap Tanzania team has grown from 2 to 10, had requests for their first radio campaign since launch approved, and have contracted an experiential marketing agency to employ 80 people that will closely manage its agent network. These promising changes suggest that Zain is finally prepared to capitalise on their powerful, award winning service.

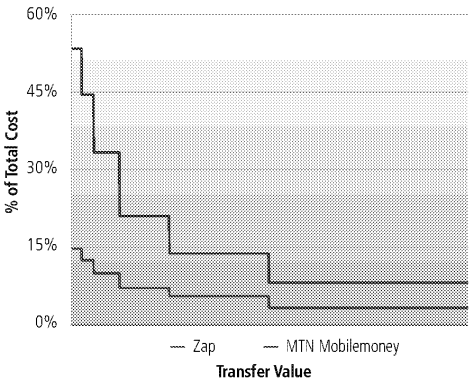
Service Design

Zain's approach to service design is fundamentally different from its competitors. Whereas M-PESA and MTN MobileMoney deployments are typically designed with the belief that 'cash will remain king' for some time, Zain builds its ecosystems with the view that they should be cash-free – as much as possible – from the start. In pursuit of this unique vision, Zap has departed from the well-known M-PESA model in a few significant ways.

Pricing the service to encourage electronic transactions

First, their tariffs are structured to encourage customers to keep money in the system and transact electronically. This marks a key departure from the M-PESA and MTN MobileMoney pricing models which, above all else, are designed to encourage both senders and recipients to register for the service in order to benefit from a lower overall remittance cost (i.e. the total cost of a remittance is lower for two registered users, than for a registered and unregistered user). Across East Africa, the flat fees Zap charge for a money transfer – excluding the costs of cash in and out – are lower than its competitors. For instance, in Uganda, the transaction fee for sending money using Zap is Ugsh250 (USD$0.12), compared to Ugsh800 (USD$0.39) for MTN MobileMoney. Zain's unique pricing model supports a number of elements of their strategy (we'll address how it fits into distribution later), but when it comes to service design their intent is clear: keep the transaction fee low so customers can use money within the electronic – cash-free – ecosystem.

Transaction Fee as a % of Total P2P Transfer Cost: Uganda



Launching with multiple services, so customers don't need to cash-out

Second, whereas M-PESA deployments typically feature money transfer as the primary – and often only – service at the time of launch, Zain choose instead to promote multiple services. Zain reason that P2P transfers alone, which typically end with a recipient converting e-money back to cash, are not enough to deliver on their vision of a cash-free ecosystem. Instead, Zain position Zap as "Much more than Money Transfer" and typically promote some combination of money transfer, airtime top-up, bill payments, and merchant payments. By doing so, Zain provide consumers with options to use their electronic money rather than instantly convert it back into cash.

Focusing on corporate customers as key ecosystem participants

Third, Zain focus disproportionately on serving corporate customers as a means of securing strategic sources and uses of funds. In Tanzania – where a quarter of the small Zap team focuses on B2B and C2B initiatives – this strategy has resulted in partnerships with Coca Cola and OILCOM. Both projects are currently at pilot stage, but it's easy to see how Zain hopes they'll play a strategic role in creating a cash-free ecosystem. For instance, the C2B element of Zain's partnership with OILCOM enables Zap customers to pay for their fuel using e-money, while the B2B element then enables each OILCOM fuelling station to use Zap to pay their suppliers, bank or head office using e-money. Thus, Zain believe corporates like OILCOM occupy a strategic position in the ecosystem – as both a retail recipient and B2B payer of e-money – and will help complete their vision of a cash-free ecosystem by promoting Zap both to consumers and partner businesses.

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Creating the option to link Zap e-wallets to bank accounts

And finally, Zain were the first deployment to enable users to link e-wallets to bank accounts to further facilitate their vision of a cash-free ecosystem. This approach has implications for both agents and end customers. For instance, agents become less reliant on cash as a means of loading their e-wallets as they can instead simply transfer funds when needed from a linked bank account. Additionally, customers can avoid the need to convert e-money into cash when they receive a transfer – they can instead seamlessly deposit it into a bank account.

Without a doubt, building a cash-free ecosystem 'from day-one' is a more complex and expensive task than the one taken on by the likes of Vodafone and MTN. If nothing else, the fact that Zain has taken on this task underscores just how vital it is for their teams to be adequately resourced.

Marketing

Zap's decision to promote multiple services at once has prompted a great deal of industry debate – but a separate issue has equally defined their marketing approach: lack of budget.

Without budget, ability to educate customers is limited

Across East Africa, Zap teams have struggled to secure the budget required to launch marketing campaigns to build sufficient awareness and understanding for the service. And while the Kenyan market is already relatively sophisticated, small marketing budgets have had particularly dire consequences in less mobile-money-literate countries like Tanzania and Uganda. Vodacom, Zain's main competitor in Tanzania, has recognised the need to invest in education and has supported M-PESA with regular radio, TV, billboard, POS merchandising and below-the-line activation campaigns, but Zain has barely invested in marketing Zap since their initial launch.

Linking Zap to SIM registration drives customer adoption

Still, over 4 million Zain subscribers have registered for Zap in Tanzania, making it one of the largest deployments in the world by way of registered customers. So how has the Zap team achieved this scale in the absence of adequate marketing support? A number of marketing strategies have played a role, but one in particular has been most successful: linking Zap to SIM registration activities. In Tanzania, and more recently Kenya, telecoms regulators have implemented requirements for operators to collect personal information about each of their mobile subscribers – and fortunately for Zap, this information mirrors data they'd otherwise collect when registering a new Zap user. Thus, Zain has used SIM registration campaigns as an impetus for Zap registration, and vice versa.

This strategy has been expensive – Zain pay agents and freelancers about Tshs1,500 (USD$1.10) for each customer that they register and few actually use the service immediately – but it has also positioned Zap for potential success. For instance, it will now be possible to target these registered customers with promotions to encourage actual use of their e-wallet. Additionally, their early SIM registration efforts will likely improve Zain's future return on marketing and education investment as more prospective users will be able to follow through on their interest without encountering a registration barrier.

Leveraging partners to promote Zap

Beyond linking Zap with SIM registration activities, Zain has also leveraged their B2B and C2B partnerships to drive adoption. For instance, OILCOM has branded each pump in their fuelling stations with Zap materials and plan to provide discounts to customers who pay using Zap. Additionally, electric and water companies who accept Zap as payment have launched above and below the line marketing campaigns, which have helped build awareness and vital credibility in the eyes of cautious prospective customers.

Distribution

Even with their service design vision of a 'cash-free ecosystem from Day One', Zain recognise that the success of Zap will ultimately hinge on their ability to build, incentivise and manage an effective distribution network. In this sense, they pursue the exact same goals as any other deployment: to create a network that is ubiquitous, low-cost, trusted, and liquid.

With limited resources, distribution challenges arise

Zap's ability to execute on their plans to build an effective distribution network has been constrained by limited resources. In Tanzania for instance, the shortage of staff and budget has created many serious

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challenges. First, to recruit and train agents, the Zap team has had to rely on existing Zain sales staff – and while they were generally enthusiastic about the product, most simply lacked the time and incentive to invest in properly training and supporting new agents. As a result, many agents were poorly trained and quickly became inactive.

Zain also faced challenges around closely managing the agents that they have been able to retain. For instance, while they are able to monitor the e-money balances of each agent, the Zap team has little capacity to actually take action based on what they observe. Thus, instead of a Zap distribution manager or outsourced agency personally visiting agents in need of support, Zain has had to try and solve problems remotely and incentivise agents to adhere to liquidity management guidelines with draws and promotions.

Engaging airtime dealers to offset resource shortages

But even in the absence of resources, Zap teams have innovated to create the most effective distribution networks possible – and in some markets, this has meant working closely with airtime dealers. For instance, in Uganda – and increasingly Kenya – Zap teams have taken the first step of converting each airtime dealer outlet into Zap agents. In Uganda, this strategy has delivered many well branded, liquid agents in strategic positions. In the coming months, some airtime dealers in Uganda and Kenya will play an even more sophisticated role in Zap's distribution strategy by monitoring and managing liquidity for each of their sub-agents. This tactic has been used successfully by other mobile money deployments – even those with adequate resources – to ensure agent networks are well managed. Unfortunately, the option to task airtime dealers with key distribution responsibilities has not been available to the Zap team in every market – like in Tanzania, where dealers have uniformly declined to engage for unrelated reasons.

Zap isn't the first deployment to face resource challenges or engage their airtime dealers when building, designing and managing their agent network – but there are additional elements of their approach that are distinctive within Africa.

Vision to deliver Zap through 'Merchants' – and not just 'Agents'

The first is their belief that the moniker of 'agent' is out of place in Zap's proposed cash-free ecosystem, so they have adopted the term 'merchant' as an alternative. In Zain's view, a conventional 'agent' is a business that has been recruited by a deployment for the exclusive purpose of offering cash-in and cash-out services. A Zap 'merchant', on the other hand, is a retailer or wholesaler that will otherwise be dealing extensively in e-money – accepting it from customers and using it to pay suppliers – and hence will logically offer Zap users cash-in and cash-out services.

It's too early to tell whether Zap distribution networks will ultimately be comprised of 'merchants', or simply conventional 'agents', but some early trials illustrate how they hope this model will work at scale. For instance, Zap Tanzania's partnership with Coke currently enables mini-distribution centres to pay their master distributors using Zap. This partnership could lead to a massive number of merchants being created in its second phase if mini-distribution centres begin encouraging the retailers who pay them to use e-money – because at that point it would also make sense for retailers to accept e-money as payment from their customers to avoid the need to load their e-wallets. Without question, converting businesses into cash-free 'merchants' is much more time consuming, complex and expensive than persuading a business to simply add cash in/out to their service offering and become an 'agent'.

Responding to prospective agent feedback when designing commission settlement

The second, and perhaps most distinctive, feature of the Zap agent network relative to competitors like M-PESA and MTN MobileMoney is their approach to commission settlement, which stems directly from their effort to provide a strong value proposition to agents. Zap agents are paid their commissions in cash by the customer each time they perform a transaction, whereas M-PESA agents are paid electronically in one lump sum in arrears by the mobile operator. The difference between these two models is significant: Zap agents take responsibility for levying a discretionary fee each time a customer cashes in or out, whereas M-PESA agents do not (their customers are instead charged via an automatic electronic deduction when they cash out).[3]

[3] It's also interesting to note how this is at odds with Zain's view of creating a cash-free ecosystem.

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So why did Zain choose this settlement model? Several factors contributed to their decision, but the most significant was their desire to bolster the Zap value proposition to agents. When designing Zap, the team studied their East African markets and found that agents raised three complaints with the way they were paid commissions. First, agents complained about the amount of time it took to be paid – that is, they expressed a desire to be paid in real time rather than at the end of a month. Second, agents complained that when they received an electronic deposit at the end of the month, it was too difficult to understand how much they were really making from the service – or if the payment was even accurate. And third, rural agents whose cost of managing liquidity was higher than those in urban areas expressed a desire to have the option to adjust their fees accordingly.

Thus, Zain decided to remove themselves completely from the process, and have attempted to make commission settlement instantaneous and transparent. This approach has been popular with some agents (it's difficult to say whether they represent a majority), and it has helped the Zap team conserve OPEX since they don't need to employ staff to deal with agent concerns each time they are paid. Of course, this strategy also comes with some challenges. From a customer experience perspective, some argue that 'recommended' fees make it difficult for the customer to understand how much the service really costs, although anecdotally, most urban agents do seem to simply charge the recommended fees. Additionally, some high traffic agents are not always pleased to spend time negotiating with a customer over how much the service should cost – while a queue forms in their store.

Bank Partnerships

Zain's approach to engaging bank partners has resulted in a service that's difficult to classify as either conventionally bank-led or mobile operator-led. And indeed, to classify Zap as either would neglect the fact that Zain and its bank partners equally make significant contributions in delivering the service. Across East Africa, Zain has engaged closely with banks in the delivery of Zap. And not out of altruism: Zain recognise that banks play an important role in delivering key elements of their approach to service design.

How Bank Partners Enable Different Elements of Zap's Approach to Service Design

1. Zap service designed with a belief that the ecosystem should be cash free – as much as possible – from the start...

... so integrate with multiple banks allowing customers and agents to move funds between e-wallet and bank account, reducing reliance on cash.

2. Zap service designed to be used heavily by corporate customers...

...so offer them options to manage liquidity at bank branches from multiple banks, since corporate customers often have outstanding lines of credit and need to route flows through a bank – or they may simply transact too aggressively for a typical agent. In Tanzania, Zap even sources B2B leads from their bank partner.

For instance, given their objective of serving corporate customers, many of whom will transact too frequently and aggressively for a typical Zap agent, Zain has sought out banks to manage liquidity. Additionally, to create a truly cash-free ecosystem Zain believe that a mobile money service cannot ignore the financial flows already taking place in the existing financial sector – hence the ability to link Zap e-wallets to accounts at any partner bank. Banks have even proved valuable in some markets as a source of leads for Zap's B2B team, often identifying prospects and supporting Zap's effort to enrol them in the service.

At scale, Zap will offer significant value to banks

It's clear that banks make an important strategic contribution to the Zap ecosystem – but what incentive do they have to participate in the first place?

Assuming Zap achieves scale, a lot. Zain has designed a multi-bank partner strategy in which any bank can benefit from the system in accordance with their objectives. For instance, in Tanzania any high quality bank interested in increasing their deposits can become a 'sponsor bank' and hold a Zap trust account, while others more concerned with earning transaction revenue can become a 'non-sponsor bank' and earn fees each time a customer or agent moves money from their account to an e-wallet. And finally, banks that have a large network of branches can become a 'correspondent bank', and earn income

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in exchange for offering up their branches as cash in/out locations.

Additionally, Zain has designed Zap to help their bank partners better serve existing customers – and also attract new ones. That is, bank partners who don't have mobile banking services of their own – and even some who do – can offer Zap to existing customers as a value added service. And banks seeking to attract new customers benefit from Zain's commitment to encouraging each Zap agent to open a bank account as a means of managing their own liquidity.

Zain isn't the first mobile operator to offer up float and transaction revenue as benefits to prospective bank partners, but some elements of their approach are uniquely 'bank friendly'. For instance, from the beginning Zain has invited multiple partners to serve as sponsor banks and benefit from holding Zap trust accounts. To date, few other deployments have adopted this approach so willingly: some have done so only after their sole trust account became too large, and Ghanaian deployments have done so to appease regulatory guidelines.

Aside from the potential for massive benefits, banks have also found it simple to integrate with Zap and manage the service – so the costs of partnering are very low. For instance, Citibank, the first Zap Tanzania sponsor bank, has not had to add any headcount to support Zap and were able to complete technical integration in a matter of weeks. This ease of integration and management exemplifies the experience partners have had working with Zap across East Africa, and stems from Zain's effort to create a flexible technology solution that can be modified easily and safely to work with any type of partner.

Conclusion

Zain's Zap is a service with a great deal of potential. By appropriately investing in customer education, distribution and customer activation, Zain has an opportunity to capitalise on some of the early progress made in East Africa in the first year of operation.

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3.2 True Money and M-PESA: Two Unique Paths to Scale

Thailand's True Money is a success story that merits closer attention. Launched in 2005, True Money is now used by 6 million customers, and the system processes over USD$900M in electronic payments and 120M transactions per year. While True have since introduced innovative services like Touch SIM, the world's first RFID-embedded contactless payment solution, it's their approach to scaling an e-wallet and payment service that's of most interest from a financial inclusion perspective.

This review will describe the True Money model and compare their approach to the industry's best known success story, M-PESA. While the latter model is already being widely replicated (and for good reason), this comparison will identify circumstances in which True's approach should likewise be considered by others introducing mobile money.

Why the True Money Story Matters

It's tough to find a deployment that's reached M-PESA-like scale: the most recent figures suggest that the Kenyan system now counts over 8.6 million customers and processes USD$3.5 billion in P2P transfers per year. By comparison, True Money isn't as large, but it's certainly larger than most. And perhaps more importantly, True Money offers a success story that is remarkably different from M-PESA. Whereas M-PESA's path to scaling a *money transfer* offering has been well documented, there are fewer cases of deployments reaching scale with *payments* offerings, as True has. And True didn't just launch a completely different service than M-PESA – they did so in a very different way, first launching an e-wallet, and then a complementary agent network 2 years later.

This review will examine how True Money and M-PESA approached service design, customer experience, marketing, distribution and bank partnerships, and explore the rationale behind True's decisions on their unique path to scale.

Service Offering

Marketed as a way to 'top up, pay, transfer and withdraw', today True Money consists of an e-wallet that can be loaded by cash card[1], bank account, or credit card and a network of 8,000 bill payment agents known as True Money Express (TMX). Customers use the e-wallet and TMX agent network primarily to buy airtime, pay for True Group service, pay bills, and to a much lesser extent, transfer money. This focus represents a significant departure from M-PESA, which has been designed, marketed and most commonly used as a money transfer service.

True's decision to focus on airtime purchase and bill payments was made partly in recognition of the competitive money transfer market in Thailand, which is saturated by low-cost bank and postal offerings, but more so to satisfy needs stemming from True Group, the parent company to which True Move belongs. True Group is a converged communications provider that offers mobile, landline, cable television, internet, WIFI, and online gaming services. In creating their e-wallet, True was partially responding to a critical internal problem: how do we make it easier for customers to buy our various prepaid services? Safaricom, on the other hand, is a pure play mobile network operator. They launched M-PESA to capture an external market opportunity that would deliver benefits to their core mobile metrics. Thus, True and Safaricom *initially* deployed mobile money for considerably different purposes.

Of course, over time both services evolved. By virtue of their scale, M-PESA has become a payment tool for just about anything. Similarly, True Money has evolved from a payment tool for True Group services to one that is used for different types of non-True Group bills, each with a unique business case (discussed later, and analysed in Exhibit 1).

[1] In Thailand the phrase 'cash card' effectively refers to what some other countries refer to as 'scratch cards'

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Customer Experience

To activate a True Money e-wallet, customers register over the air by entering their 13-digit Thai ID number and creating a PIN. True Money is an STK application that has been embedded on all True Move SIM cards since 2005, so a large portion of True Move customers can register quickly and easily. Once activated, an e-wallet can be loaded in three main ways: through a linked bank account or credit card, by an electronic transfer from a TMX agent (similar to an M-PESA agent selling e-money), or from a True Money Cash Card. Cash cards are by far the most popular option: even though the majority of Thais are banked, few people are willing to go through the effort of linking their bank account or credit card to the e-wallet.

The M-PESA customer experience differs from that of True Money in terms of registration process and approach to loading the e-wallet. Whereas True Money users register over the air, Safaricom requires each prospective M-PESA user to visit an agent and present formal ID. With 14,000 M-PESA agents, this is not overly burdensome and is actually helpful in establishing a critical connection between customers and the agent network. That is, once registered, customers can instantly load their e-wallet electronically at an M-PESA agent – because registration and account loading occur at the same location, it's easier to get customers transacting quickly.

Because M-PESA focused on *money transfer*, they've had to tackle a complex customer experience challenge that True, with a greater focus on *payments*, have not. That is, making it convenient for customers to convert e-money back to cash.[2] Given how important this feature is to the M-PESA customer experience, it's difficult to make a fair comparison between the two services in this area.

Marketing

Just as the True Money and M-PESA service offerings are completely different, so too are the ways in which each has been promoted. Unlike M-PESA, True does not use their TMX agents to register new customers, nor have they invested heavily in mass marketing.[3] Instead, they have employed two tactics that were not seen in Kenya: convergence-based cross promotion, and strategic engagement with the airtime dealer network.

Convergence-Based Cross Promotion

True aggressively leverages their position as a converged communications provider to drive adoption of the True Money e-wallet. For instance, True offers a service called True Life Free View (TLFV), which allows True Move (mobile) customers to get free access to True Visions (cable TV) if they pay their bill using the True Money e-wallet. TLFV customers can then also use their True Money e-wallet to order additional pre-paid channels, nearly in real time. This 'convergence-based cross promotion' has played a big role in the success of True Money, delivering more than 1 million e-wallet customers. This strategy is not one that Safaricom could have pursued alone, because as a pure play mobile operator, they have no other media properties to leverage for cross promotion.[4]

[2] Today, e-value can only be converted back to 'money' by sweeping it into a linked bank account, or by closing the account altogether and paying an 8% cash-out fee at a True corporate store.
[3] The decision not to invest in mass marketing was made in light of budget constraints
[4] To compensate, Safaricom work with many bill issuers, including hospitals, schools, airlines, etc.

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Strategic Engagement with Airtime Dealer Network

The top tier of Safaricom and True's airtime distribution networks have played dramatically different roles in Kenya and Thailand respectively when it comes to promoting mobile money. Kenyan airtime 'superdealers' have (accurately) identified the threat that the system poses to their scratch card businesses and have chosen not to contribute, in any way, to the promotion of M-PESA. In Thailand on the other hand, top-tier airtime dealers have been integral in promoting True Money Cash Cards. In fact, it would be difficult for True Money to succeed without their support, given that the cash cards they distribute are the source of the bulk of the value that's loaded into True Money e-wallets. Roughly 80% of airtime dealers and retailers now stock the multi-purpose True Money Cash Card rather than multiple single-purpose prepaid cards as they did in the past. Had True's airtime dealers, sub dealers and retailers not agreed to this transition, True Money Cash Cards simply would not have the broad distribution needed to be effective.

True's ability to persuade their dealers to make this massive change is impressive, but even more so considering that dealers earn a *lower* commission from True Money Cash Cards than from the True Move airtime cards they previously sold. The key to making this successful transition was in first persuading dealers that the comparatively smaller commission offered from each True Money Cash Card would be more than offset by higher volumes. True delivered on the promise of higher volumes by partnering with multiple Thai businesses that sold services on a prepaid basis, and persuading them to accept True Money as a method of payment. For instance, True have positioned the True Money Cash Card as a method of payment for online games, a massive prepaid market in Thailand. By doing so, True provided the dealers, sub dealers and retailers with volume that they previously would not have captured by simply selling prepaid airtime scratch cards.

While there's no question that True has been more effective than Safaricom in leveraging their airtime dealers for the purpose of promotion, it's not yet clear whose strategy will be more effective in reducing airtime commission costs. The True Money Cash Card has reduced True's distribution cost by a small fraction[5] to True's *entire* mobile base. M-PESA, on the other hand, has reduced Safaricom's cost of distributing airtime by 7.5%[6] (nearly the entire amount) – but only for the 19%[7] of customers who now buy electronically.

M-PESA provides more valuable lessons on engaging agents and instilling trust

While True offers valuable lessons in terms of how to *promote* a mobile money service, they offer little in terms of how to persuade customers to *trust* it. Customers *inherently* trust scratch cards, so encouraging them to load their e-wallets using True Money Cash Cards was comparatively simple next to the feat accomplished by M-PESA, who persuaded customers to load electronically. One of the key tactics used by Safaricom to instil trust in M-PESA was ensuring that each agent recorded their transactions in a log book to provide customers with a much needed tangible transaction record. As True attempt to encourage their base to abandon scratch cards in favour of electronic loading, they are using a similar approach: TMX agents either issue receipts for transactions completed on an electronic terminal, or record any transaction completed on a mobile in a log book.

Distribution

True used their existing card distribution network to make the True Money Cash Card widely available, but they never planned to use the cash card model to support *all* the services on their roadmap. And for good reason. Early on they recognised that, for some services, True Money Cash Cards would simply not be a profitable distribution solution. This ultimately led to the creation of the TMX agent network. But why did True come to see cash cards as unprofitable? In short, they examined the cash card business case individually for two prospective services: non-True Group bill payments, and money transfer.

Non-True Group Bill Payments

While cash cards are a profitable way to facilitate payment when True is able to charge *bill issuers* a percentage fee that exceeds their cost of card

[5] Undisclosed, but less than 1%

[6] This figure is illustrative. The actual amount saved equals the percent Safaricom would have paid airtime dealers, less the cost of facilitating cash in and out, plus the cost of physical card production.

[7] Mas and Ng'weno: Forthcoming Paper

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production, distribution, and channel commissions embedded in the True Money Cash Card, the business model breaks down when their only revenue source is a transaction fee *paid by the customer*. In this case, the cost of physically producing, distributing and paying out dealer commissions for True Money Cash Cards exceeds the fees True could reasonably charge, given the level of competition for something like a utility bill payment (see Exhibit 1 for full analysis).

Money Transfer

True also found that cash cards made it essentially impossible to facilitate P2P transfers profitably while still offering a compelling customer value proposition. That is, True would have to charge customers an extremely high fee to cover the high cost of cash card production, distribution, channel commissions embedded in the True Money Cash Card, in addition to a commission for the agent performing cash-out. In total, the cost of simply facilitating cash-in via a True Money Cash Card would have been at least 5 times higher than doing so electronically using the M-PESA model.

Ultimately, True's desire to penetrate the massive third party bill payment market in Thailand prompted them to augment their distribution strategy and create the True Money Express (TMX) agent network in 2007. The TMX network has since grown to over 8,000 agents and has enabled True to grow considerably in the bill payment segment and somewhat in money transfer by addressing the limitations of cash cards.

While they're both massive, the True Money Express and M-PESA agent networks have very little in common. And for good reason – True and Safaricom *require* very different forms of support from their agent network by virtue of their different focuses. In Thailand, TMX agents are required to process bill payments and sell True services. In Kenya, M-PESA agents are required to, above all else, ensure the system is liquid by buying and selling e-money, while also driving growth by registering new customers. Thus, since True Money agents are tasked with providing an entirely different set of services than M-PESA agents, it's not surprising that True's approach to structuring the network, managing liquidity, and selecting agents differs markedly from the one chosen by Safaricom.

Structure the Network

The TMX agent network has just one tier, whereas the M-PESA network has two. That is, each individual TMX agent buys e-money and is paid their commissions directly and in real time from True, whereas M-PESA 'sub-agents' have a direct relationship with (and are paid at a later date by) 'master agents', who in turn have relationships with Safaricom.[8] While the obvious drawback of this multi-tier agent network structure is that commissions must be split between two parties, Safaricom designed this model to address factors that True don't face given their service offering focus. The first is a need to create a strong network of rural agents with good liquidity to support the urban-rural domestic money transfer flows. To address this challenge, Safaricom target the master agent tier and have implemented rules to ensure each master agent has a balance of urban and rural sub-agents. This rule helped Safaricom create a strong rural presence and ensure each master agent is able to balance their e-money liquidity needs between urban and rural sub-agents. The second unique factor Safaricom faced is the lack of banking infrastructure in Kenya. Whereas almost all TMX agents had individual bank accounts prior to joining the system, many valuable prospective M-PESA sub-agents did not. With a two-tier agent network, sub-agents are able to buy and sell e-money at the bank branch of their master agent, regardless of whether they are banked.

Manage Agent Liquidity

TMX agents manage their e-money liquidity directly with their corporate banking provider, whereas M-PESA sub-agents manage e-money liquidity using both non-bank options (i.e. buying and selling e-money at the retail store of their master agent) and bank options (i.e. buying and selling e-money at the bank of their master agent, or from a superagent). While True's liquidity management challenge is comparatively simple given that they only need to solve for e-money liquidity, their approach is still innovative. When a TMX agent needs to top up their e-money balance, they use a True Money application on their mobile to transfer the required value of money from their business bank account to their TMX e-wallet. Balances are updated immediately and, with True accounts at most big banks in Thailand, agents are only required to pay an intrabank money transfer fee which is typically less than one percent.

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Agent Selection Criteria

Because TMX agents do not yet provide cash-out services, True does not need to screen applicants for their cash positions. Instead, they simply select prospective agents that are banked (to enable the liquidity management solution) and on the merits of location – the more traffic a prospective agent gets, the more likely they are to see a high volume of bill payments and mobile airtime top-up. This task is dramatically simpler than the one Safaricom faces, who above all else must select and retain only those agents with good cash liquidity – or face an erosion of trust in the system.

Bank Partnerships

Banks make the same two core contributions in the models of M-PESA and True Money: they mirror the value of outstanding e-money issued by a mobile operator in a pooled account, and they contribute to the management of liquidity.[9] But while banks play similar roles for both deployments, the approaches taken by Safaricom and True to engaging bank partners has been slightly different.

Rather than choosing one single bank partner, True chose to work with most commercial banks in Thailand as a means of supporting their e-money liquidity management solution.[10] In effect, their multi-bank partner strategy enables any prospective TMX agent to quickly buy e-money using an application on their handset, regardless of which bank they happen to have an account with.

True's multi-bank partner strategy has drawn mixed reactions from banks themselves. On one hand, banks do earn revenue from processing an intra bank money transfer service each time a TMX agent reloads their e-wallet (i.e. when money is sent from the account held by a TMX agent to the account held by True at the same bank). However, some banks contend that once a TMX agent has loaded their wallet, the subsequent services they can provide may cannibalise bank offerings and offset any revenue they stand to earn. For example, in a hypothetical scenario where the TMX agent loads Bt1,000 onto an e-wallet, they pay the bank a fee of Bt10 for the money transfer and can facilitate 5 bill payments of Bt200 each for customers before they need to reload their e-wallet and pay the bank another fee. Had those TMX customers paid their bills instead through the bank's bill payment service, the bank would have earned revenue from each individual bill payment.

Because the value of e-money in circulation is reflected cumulatively in many banks, True has not made any *one* bank a big winner by way of increased float balances.[11] Safaricom, on the other hand, initially chose to mirror the amount of M-PESA e-money in circulation at a pooled account at one bank, the Commercial Bank of Africa (CBA), providing this partner with a windfall of deposits. In effect, this approach has provided Safaricom's one bank partner with a very strong value proposition by way of opportunity to monetise float. However, as the M-PESA account came to account for such a significant portion of CBA's assets, Safaricom and hence M-PESA customers became exposed to CBA default risk. Thus, recently Safaricom moved to maintain some balances at Standard Chartered Bank.[12] Even with a couple select bank partners, the principle of providing value through increased deposits should still apply.

And beyond providing a windfall of incremental deposits to CBA and Standard Chartered, Safaricom recently moved to engage other commercial banks to help in the process of liquidity management. In principle, this move is similar to True's approach of leveraging existing bank infrastructure to help address liquidity challenges. But Safaricom's approach has been somewhat different.

Safaricom's efforts began in early 2009 with the creation of the 'superagent' function. Superagents are banks that have partnered with Safaricom and enable sub-agents to buy and sell e-money at any of their branches. These superagents play an important liquidity management role by providing sub-agents with more options to conveniently access a bank branch. That is, a sub-agent can choose to manage their liquidity at *any* branch of *any* of Safaricom's 6 superagents, rather than a branch of the one bank that their particular master agent may be affiliated with. This bank partnership model has helped Safaricom grow their agent network.

[10] Number of bank partners not disclosed, but it is in excess of a dozen.

[11] This is the case specifically for TMX. In theory, True could mirror the value of all e-money issued through True Money Cash Cards in one particular bank.

[12] Mas and Ng'weno, Forthcoming Paper

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Conclusion

True's success vividly illustrates how market conditions, customer needs, and operator assets shape the nature of the mobile money opportunity in every market. Most importantly, their success story is a great example of an operator *responding* to market conditions. But what makes Kenya so different from Thailand? Above all else, infrastructure. Thailand has sophisticated banking infrastructure (i.e. branches, ATMs), whereas Kenya, by comparison, does not. Thailand has a far-reaching ID system, whereas Kenya, by comparison, does not. These two differences alone beget differences in service offerings, with money transfer ripe for Kenya, but less interesting in Thailand, as well as differences in distribution strategy and initial customer segment focus.

Each success story is impressive in its own right. That two very different offerings can succeed so well suggests that both merit study – and that all operators should work to define a strategy that is responsive to the context in which they operate.

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Exhibit 1

Bill Type	Example	Revenue Model	Distribution Solution & Rational
True Group	True Visions (TV)	Internal Transfer	True Money Cash Card and e-wallet
Prepaid bill	Online Games	Percentage of voucher value (i.e. 15% of a Bt200 gaming credit) paid by the bill issuer. The actual percentage varies with the top-up volume committed and delivered by the bill issuer.	True Money Cash Card and e-wallet Why it makes sense for bill issuer: Small bill issuers lack the market power to distribute their own proprietary card, and it is more economical for them to use True Money as a source of funds than to create their own (i.e. convenience stores would charge a higher % fee than True for stocking their card). Why it makes sense for True: Because the % fee True earns from these bill issuers exceeds the cost of producing and distributing a cash card, the True Money Cash Card can be profitably used as a payment tool.
Postpaid bill	Utility Company	Transaction fee paid by the customer or in some cases, the bill provider.	TMX Agent Network Why it makes sense for bill issuer: Provides their customers with an additional payment point, for no (or minimal) additional cost to the bill issuer. Why it makes sense for True: Because the potential customer revenue from processing a utility bill payment is typically less than the cost of producing and distributing a cash card, True cannot use the True Money Cash Card. Instead, they process these payments with the TMX agent network electronically, which eliminates the cost of physical card production, distribution and high commissions.

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3.3 Mobile Money in the Philippines – the Market, the Models and Regulation

Part 1: Objectives and Executive Summary

The objectives of this case study are to:

1. Provide regulators with an understanding of the steps taken by the Bangko Sentral ng Pilipinas that have enabled the success of GCASH and SMART Money
2. Provide mobile operators deploying mobile money offerings with a comprehensive view of two well-designed models that have achieved scale in the Philippines, and drive understanding of the contributions and incentives of each ecosystem participant
3. Identify factors that have played a role in limiting growth

Executive Summary

Three factors have contributed to the success of mobile money in the Philippines:

1. Characteristics of the Philippines market

Not only the extent, but also the way in which Filipinos have adopted mobile have been key enablers of mobile money success. The country is the texting capital of the world and Filipino mobile users are highly SMS literate, which made the proposition of conducting financial transactions on a handset somewhat more intuitive. Access to finance is low, but latent demand for financial services clearly existed, which was evident from a thriving quasi-financial sector and sizeable domestic and international remittance flows. Finally, the card acceptance market and fee structure enabled both models to incentivise participants in their ecosystems.

2. Actions taken by the Bangko Sentral ng Pilipinas (BSP)

The BSP has enabled mobile money success through their progressive regulations. Enabling mobile operators to offer e-money, empowering non-banks to perform cash in/out and providing legal certainty to formalise rules have all contributed to success in the market.

3. Actions taken by SMART and Globe

SMART and Globe's ability to design strong offerings and subsequently build and align the interests of supporting ecosystems have been the final and critical enabler of success.

While the factors described above have enabled the Philippines to become one of the most successful mobile money markets in the world, other factors have constrained growth to some extent. Understanding the way that the following areas served as constraints (but if addressed can be considered as enablers of future growth) is relevant not just in the context of the Philippines, but in any market seeking to understand the way that design of regulatory frameworks, ecosystems and service offerings can impact success. The three areas include:

1. Authority and incentives for agents to perform customer registration
2. Rules impacting ability to scale the number of non-bank cash in/out agents
3. Brand identification and relevance to base of pyramid customers

Market Context

The Philippines is among the most advanced mobile money markets in the world. In 2001, SMART Communications launched SMART Money in partnership with Banco de Oro (BDO). The service, which uses SIM Tool-Kit, enables customers to buy airtime, send and receive money domestically and internationally via mobile, and pay for goods using a card. In 2004 Globe Telecom launched GCASH, an SMS-based offering, which offers a similar suite of functionality entirely using the mobile phone.

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Part 2: Market Characteristics of the Philippines

Before examining the actions taken by the Bangko Sentral ng Pilipinas and Globe / SMART that have led to mobile money success in the Philippines, a brief overview of market-specific enabling factors is provided below.

Mobile

Widespread reliable mobile coverage

Mobile money success could not have occurred without the rapid adoption of mobile in the Philippines. Since 2000, penetration has risen from just 3% to 68% today. This warm reception enabled SMART and Globe to develop widespread reliable network coverage across the country. Not surprisingly, there is a strong correlation between confidence in the mobile network and likelihood of adopting mobile money, with 75% of Filipino mobile money users describing their mobile network as 'very reliable' versus 61% of non-users.

SMS Literacy

A key challenge mobile operators face in deploying mobile money is persuading customers to conduct financial business on a mobile phone. In the Philippines, the nature of mobile use eased this challenge. The Philippines is known as the 'texting capital of the world' and Filipino mobile customers are highly SMS literate. A 2009 CGAP-GSMA study confirmed that the early adopters of mobile money in the Philippines are particularly heavy SMS users, sending 57% more messages per day than non-mobile money users.

Financial Services

Low Access to Finance and Evidence of Latent Demand

Today, just 26%[1] of Filipinos have access to formal financial services but clear evidence of the need and demand for them existed prior to the launch of GCASH and SMART Money: there are many large domestic remittance providers that have served the Philippines[2] in addition to a ubiquitous quasi-financial services sector. For instance, it is common for someone experiencing a temporary cash shortage to pawn their jewellery or other valuables at one of the 6,296 pawnshops in the Philippines. While the ubiquity of pawnshops delivers questionable financial inclusion benefits[3] , the prevalence of cash-laden outlets that are recognised in Filipino minds as a place where one conducts financial business has actually benefited mobile money deployments. Both SMART – and more extensively Globe – were able to leverage the pawnshops and money changers that were already being frequented by Filipinos to create a cash in/out network. Likewise, the operators of these pawn shops were receptive to new offerings that would help them cover fixed costs for little incremental investment – particularly because some had already gone through the process of acquiring the necessary license to become a Remittance Agent, so this administrative work would not need to be done again[4].

Prevalence of International Remittances

The size of the overseas worker community and market for international remittances has also contributed to the success of mobile money in the Philippines. 8 million[5] Filipino overseas workers (OFWs) remit approximately US$18 billion to family members in the Philippines each year using non-mobile money transfer offerings. In 2004, SMART launched a service under SMART Money called SMART Padala (to send). The service enables OFWs to remit directly to SMART Money account holders. By 2006, this service had a monthly average of 1.5 million users remitting US$15million dollars. SMART has also partnered with NCB (the biggest commercial bank in Saudi Arabia) to enable OFWs in the Middle East to remit to the Philippines directly. The culture of Filipinos seeking overseas employment as a means of supporting their family members at home provided an important financial flow for mobile money providers to target and volume from which cash in/out agents could profit.

Retail Landscape

Network of Merchants Accepting Debit/Credit Payments

Filipino merchants' acceptance of debit/credit cards as payment, along with the associated fee structure, created a fertile market[6] for mobile money – or at least the models that would subsequently be introduced. However, the way that this characteristic has benefitted SMART Money compared to GCASH has been very different.

[1] Source: World Bank: Financial Access for All

[2] Filipinos have traditionally had more choice for domestic remittances than Kenyans, which may have impacted the relative rates of adoption.

[3] Pawn shops charge high interest rates and there is a risk that the pawner may not recover the good.

[4] Pawn shops already had a need to be highly liquid to enable them to purchase goods from customers (i.e. if someone wanted to pawn an expensive watch, the Pawn Shop owner needs to be prepared with a lot of cash, or they risk losing the interest on the transaction.

[5] http://www.cfo.gov.ph/JZM%20speech%204th%20GFNC%20hawaii.pdf

[6] Term reference: Mas & Heyer Seeking Fertile Grounds for Mobile Money

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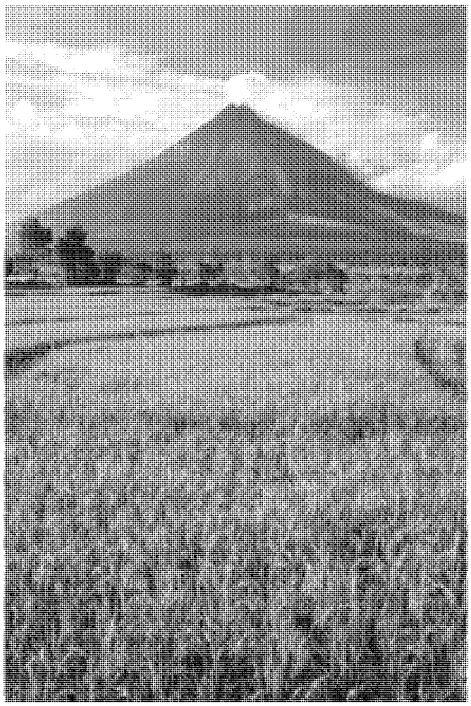
By including a card in their offering, SMART was able to instantly offer their customers access to a large retail payment network without needing to wait for an entire ecosystem to develop. Additionally, SMART was able to generate revenue on the basis of the bank interchange fee structure that governs the card payment networks. Each time a SMART Money card is used at a merchant 'acquired' by a bank other than BDO, that merchant's acquiring bank must pay a fee to BDO/SMART ranging from 0% to 3% of the transaction value.[7] SMART also has a mobile payment facility, but the card model is most widely used.

In an entirely different way, the existing network of merchants accepting debit/credit cards also benefitted Globe. In some cases they were able to persuade retailers to accept GCASH as payment as a means of saving the 0-3% merchant discount fee that would otherwise be paid on customer purchases via cards. Additionally, since there are many retail outlets in the Philippines that do not have card acceptance infrastructure (i.e. 600,000 sari sari stores that predominantly serve the base of the pyramid), GCASH was able to offer an inexpensive and convenient cashless retail payment option that benefits those at the base of the pyramid – particularly in the provincial areas of the country.



Geography

Two thirds of the Filipino population live in a handful of urbanised areas. Combined with a population that is relatively mobile[8], this has resulted in the development of a few key domestic remittance corridors. Similar to the dual-corridor phenomenon observed in Kenya[9], it is typical for a breadwinner to live and work in Manila (or some urban centre), but send money back on a regular basis to family in another province. In the Philippines, money does flow in both directions between urban and rural areas.

[7] Source of fee range: SMART Money. The extent to which this is shared between partners is not disclosed. In markets where domestic interchange fees are paid from the acquiring bank to the issuing bank when a customer uses a card issued by one bank at a merchant acquired by another bank there is an important implication on banking partner selection. It is in the mobile operator's benefit to work with a bank that has the smallest base of acquiring merchants to maximise potential to earn interchange revenue.

[8] The phenomenon of overseas workers is well documented, but even within the country there is a great deal of mobility – often tied to employment.

[9] Morawczynski, Olga (2008). Surviving in the Dual System: How M Pesa is Fostering Urban to Rural Remittances in a Kenyan Slum.

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Part 3: Actions Taken By SMART, Globe and Bangko Sentral ng Pilipinas

There is no doubt that the market characteristics described above made the Philippines a fertile market for mobile money. But success would not have materialised in the absence of key decisions made by Globe, SMART and the Bangko Sentral ng Pilipinas. Three elements in particular have had the biggest impact – and the thinking behind them can be applied to regulators and mobile operators developing markets for mobile money beyond the Philippines:

1. Creation of regulations conducive to mobile money
2. Effective service design
3. Alignment of interests within an ecosystem

For readers who are not familiar with the SMART Money and GCASH services, a description is provided in Appendix A.

Regulation Conducive to Mobile Money

For years, the Bangko Sentral ng Pilipinas has been working with the mobile industry to create an environment that would facilitate the success of electronic money, and mobile money in general. It is important to consider that much of their work has taken place in the context of the Philippines being placed on the FATF list of non-compliant countries and territories in 2001. Major efforts were taken by the financial services regulator to become FATF compliant (and the country was subsequently removed from the watch list in 2005). On one hand, this has resulted in regulations conducive to mobile money since the BSP does have a strong financial inclusion mindset. On the other hand, being placed on the FATF watch list has led to strict rules being imposed which, relative to some other markets, provide a challenging operating context, though of course, one in which there is also very strong consumer protection.

With this context in mind, the BSP's efforts to enable mobile money success can be captured in one phrase that encompasses five key elements:

The Bangko Sentral ng Pilipinas (BSP) has contributed to the success of mobile money by 1. enabling non-banks to offer financial services, and in particular to 2. do so at scale through licensed remittance agents in a way that is 3. convenient and 4. commercially viable as a going concern over the long term in 5. a competitive manner.

1. Enabling Non-Banks to Offer Financial Services

GCASH and SMART Money would not exist in the absence of the BSP's willingness to enable mobile operators to experiment with new models of delivering financial services. This willingness stems from the importance of financial inclusion in the BSP's mandate and their approach to conceptualising mobile money as simply 'another channel' – one that is delineated from deposit taking (that would require prudential regulation). Three broad approaches to regulation[10] have been observed in different markets:

1. Ex Ante: wherein markets are regulated in advance

2. Short leash: wherein some ability to try new models is provided but strict (and often prohibitive) limits are applied on what can be done

3. Test and learn: wherein operators are provided with a letter of no objection for their proposed model for a pilot operation. The risks and benefits have been thoroughly discussed with the regulator and the regulator has concluded that the risks of the pilot operation have been sufficiently mitigated. Following a test period in which learnings are incorporated, regulations are passed after it becomes clear which way the market is developing

The Bangko Sentral ng Pilipinas have used the 'test and learn' approach to regulating mobile money in the Philippines and this was an important first step in making the industry a success, because this approach promotes innovation and a clear understanding of risks.

2. Remittance Agents Can Perform Cash In/Out

Equally key to the success of SMART Money and GCASH has been the BSP's approval for non-bank agents to perform cash in/out. This rule enables mobile money providers to scale their agent distribution network by leveraging the ubiquity of pawn shops, rural banks, money changers and airtime resellers[11] whose rural reach is significantly greater

[10] Michael Tarazi, CGAP at the 2009 GSMA Mobile Money Leadership Forum

[11] Given the current process and cost for attaining a Remittance agent license, it is not yet economically practical to accredit airtime resellers as cash in/out agents. As such few of them currently perform cash in/out, aside (presumably) from some informal agents whose money laundering / terrorist financing risk is mitigated by their wallet limits. A more economically effective accreditation process (which would require regulatory approval) would be remote AMLA administration

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than that of a commercial bank. In accordance with BSP Circular 471, which was issued in January 2005, non-bank agents must first attain a Remittance Agent license to perform cash in/out. However, the rules governing the process by which agents attain this license have posed somewhat of a barrier to scaling the agent network. Prospective agents must first submit an application form in which incorporation papers, business license and other key documents are included, and then attend a seminar on anti-money laundering which is typically held in an urban area at pre-set times during business hours.[12]

3. KYC Must Only Be Performed Once; Customer Only Needs to Present One Valid ID

The rules created by BSP to govern valid identification documents and the requirements to present ID during a business relationship have been key enablers for Globe and SMART. In accordance with BSP Circular 608, customers wishing to use mobile money services must present valid ID only once, or at the commencement of a business relationship. Further, customers are only required to present one ID document from a list of 20 types approved by the BSP. The SMART Money and GCASH models operate differently with consideration for this rule: with SMART Money, KYC is done prior to personalisation of the account; with GCASH, personalisation is done each time a transaction is made as the customer presents their ID.

Rules governing valid ID and KYC requirements in the Philippines have evolved to the benefit of mobile money providers. The most recent circular, issued in May 2008, represented important progress towards enabling financial inclusion: rules now dictate that one (instead of two) ID cards are required, and that company-issued identification documents are valid IDs.

While ID requirement rules have generally been progressive, one identification element (that stems from the Philippines efforts to become FATF compliant) has constrained growth somewhat. BSP rules mandate that cash-in and cash-out can only be made with the filling out of KYC forms and presenting a valid ID even when mobile wallet limits have been set. This rule is in place to prevent money laundering or terrorist financing activities, but it does make the Philippines' network more constricted than other markets (i.e. in Kenya, M-PESA users can send money to an unregistered user on any network, whereas this cannot be done in the Philippines).

4. Mobile Operators Provided with Legal Certainty via Formalised Rules

In March 2009, the BSP issued Circular 649 which provides guidelines governing the issuance of e-money and the operations of e-money issuers in the Philippines. This Circular played another important role in further facilitating the success of mobile money in the Philippines since it provided SMART and Globe with a framework within which they know they will be regulated.

5. Competitive Business Models Allowed to be Tested

The BSP has allowed very different business models to be tested in the Philippines: SMART follows a bank led model with BDO as the issuing bank whilst Globe follows a REMCO model through the creation of GXI. Enabling both of these models to be trialled created a competitive environment which has benefited the market overall.

Effective Service Design

Beyond the BSP's efforts to create enabling regulation in the context of a fertile market, success can be attributed to SMART and Globe's utilisation of good service design principals in creating and promoting their offerings. The five important areas include:

1. Conceptualising mobile money as a non-typical value-added service

Globe and SMART do not conceptualise mobile money as a value-added service in the traditional sense. Though not obvious, this has been an important enabler of success. Traditional value-added services are launched with an initial flurry of marketing support, gain some traction in the market, and are replaced the following quarter by a newer and more exciting proposition for the customer. As it must be, mobile money has been treated differently in the Philippines. Sustained marketing support has been provided and dedicated staff have been allocated to support the initiative.

[12] Recent changes have enabled mobile operators to take responsibility for their agent networks and improve the ability to scale.

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2. Embedding the Mobile Money Application on SIM Cards

The GCASH and SMART Money applications are embedded on each new SIM distributed by the mobile operator's respective brands. This eliminates the need to conduct a SIM swap, which often poses a barrier to adoption. It also enables SMART and Globe to run SMS marketing initiatives wherein the customer can instantly experiment with the service. This is particularly important for GCASH since their model enables customers to register on their handset from any location.

3. Positioning Mobile Money as an Aspirational Service

GCASH and SMART Money are both positioned as aspirational services. GCASH is aspirational – particularly for those at the base of the pyramid – who have never had access to formal financial services. Through partnerships with rural banks, GCASH can offer customers formal financial services that were previously unattainable – like salary and loan disbursement, deposit taking, micro-SME merchant and bills payment.

With no national ID system in the Philippines, a SMART Money card truly becomes a part of the customer's identity. Several months ago, SMART introduced non-personalised cards to the market. These cards were designed to offer customers an ability to transact immediately after registration rather than waiting for a card to be mailed to their home (i.e. if a customer was sent a remittance, they could withdraw the value instantly). However, although it addressed the requirements to transact immediately and increase usage levels, the adoption of these non-personalised cards has been slow, with customers strongly preferring to receive a card bearing their own name even if they had to wait for a few more days to consummate the transactions.

4. Accommodating Different Types of User Segments and Needs

Important accommodations have been made to ensure GCASH and SMART Money are relevant for customers with unique usage needs. One example of this is the range of encashment options offered to customers with high and low technology savvy. For the 'technologically challenged' customer, SMART offers SMART Padala. The service is available at SMART Wireless Centres and enables customers to hand cash to an agent to be sent to the mobile of a registered SMART Money user. For customers with high technology savvy, SMART enables customers to load e-value onto their accounts using an auto-reloader machine that is fast and eliminates the need for contact with a person. For GCASH, customers also have access to its 3,000 cash-in and cash-out locations nationwide. GCASH subscribers could simply go to any of these GCASH outlets and get assisted service for crediting another person's GCASH wallet over the counter. GCASH also has a dedicated 24x7 hotline (2882) for assistance anytime and anywhere.

5. Driving Awareness, Understanding, and Trial through Marketing Activities

SMART and Globe's marketing strategies exemplify the adoption framework detailed in the 2009 Mobile Money for the Unbanked Annual Report. The framework recommends above-the-line marketing and promotion for the initial stage of a mobile money launch to drive awareness, followed by below-the-line marketing and promotion to drive detailed understanding of what the service can be used for and to encourage trial. When Globe launched GCASH in 2004, they made extensive use of billboards, point of sale and radio. They still use above-the-line marketing channels, operating a regular spot on a popular daytime television programme, but have increasingly turned to below-the line marketing activities. These include targeted SMS campaigns to promote the use of GCASH as a tool for airtime purchase, and roaming staff that educate prospects on the uses of GCASH. The marketing for GCASH has often emphasised the benefits of a 'full-service electronic wallet', though increasingly marketing is more feature-oriented.

To simultaneously drive awareness and understanding of SMART Money, SMART designed a series of spots featuring an animated user. Each 1-minute spot would showcase the way that SMART Money 'came to the rescue' of a customer with a specific need – from airtime purchase to money transfer. The animated character would then proceed through each step involved in completing the transaction. This campaign effectively showcased the specific applications of SMART Money and educated users on the steps involved in completing a transaction.

Alignment of Interests within the Ecosystem

Beyond designing a good service to address a fertile market that was provided with enabling regulation,

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SMART and Globe took one final critical step to enable their success: they assembled and properly aligned the interests of multiple external partners that comprise their ecosystems.

An ecosystem is defined as a network of organisations and individuals that must be in place for mobile money services to proliferate and achieve scale.[13] While the composition of SMART and Globe's ecosystems differ immensely, both are aligned on two key elements: the definition and outcome of good ecosystem design. An effective ecosystem is one in which each participant has a clear financial incentive to participate in and actively promote the service. [14]

The desired outcome of this engaged network of participants is a ubiquitous ecosystem that makes registration, and the sourcing of funds and use of funds convenient and inexpensive.

A detailed description of the SMART Money and GCASH ecosystems is provided in Appendix B. SMART and Globe use very different approaches to attaining the ubiquity and alignment that are the keys to an effective ecosystem. Their approaches are summarised in Figure A:

Activity	GCASH	SMART Money
Registration	Anywhere via handset	SMART Money Centre[15]
Cash In (Descending Priority)	Globe Business Centre, Pawnshop agents, Rural Bank partners, Non-bank remittance agents, Bancnet, ATMs, Mobile banking	ATM , BDO Bank branch, SMART Money Centre, Non-bank agents, Mobile banking
Cash Out (Descending Priority	Globe Business Centre, Pawnshop agents, Rural Bank partners, Non-bank remittance agents, ATM's (linked to mobile banking)	ATM , BDO bank branch , SMART Money Centre, Non-bank agents
Use	Money transfer, Airtime purchase, Retail via mobile, Utilities, Salary disbursement, Donations, Payment to Schools, Internet Purchases, Loan Payments	Money transfer, Airtime purchase, Retail via card, Utilities, International remittance, ATM withdrawals, Salary disbursement, Donations, Internet Purchases (with mobile lock/unlock capability), Loan Payments/Disbursements, Reloading from MBS accounts Trade settlement

[13] Developing Mobile Money Ecosystems
[14] Mas, Ignacio. 2009 The Economics of Branchless Banking.
[15] Registration at the Smart Money Centre is done for personalisation of accounts. From a mobile, any Smart subscriber can activate an account and do immediate transactions within certain limitations. The objective of the limitation is to bring the subscriber to the wireless centre to get their account personalised by presenting credentials for KYC.

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Part 4: Enablers of Future Growth

Analysis of the current SMART Money and GCASH models reveals three key areas that, if addressed, could enable future mobile money growth. A change to each of the areas listed below would be complex given that existing rules are closely linked to the efforts regulators went through to become FATF compliant in 2005. However, it is important to list these areas as opportunities for change so that mobile operators and regulators in other countries can understand their impact on the success of mobile money.

1. Authority and Incentives for Agents to Perform Customer Registration

In Kenya, M-PESA has been able to scale quickly in part because Safaricom was able to authorise their (now) 11,000 cash in/out agents to register new customers and provide meaningful incentives (the equivalent commission of providing cash in/out for an average sized transaction) to do so. Growth in the Philippines could occur if such a motivated and accessible participant was tasked with registering new customers (and driving active use). Several barriers exist to transitioning to this Kenyan-like model, namely that:

a. Existing agents are not currently permitted to perform account openings
b. Agents currently earn very high commissions (over 10%) on airtime sales, so prioritising this activity for airtime agents would be a challenge. It is worth noting that another side to this argument exists – that mobile money is looked at by agents simply as an additional offering to sell and that it should not be compared directly to airtime.

Nonetheless, incentivising agents to register new customers could make mobile money more competitive at the 'point of sale'. Many Remittance Agents offer several choices for money transfer, and typically one competitive option will enable the customer to send or receive money without any form of registration. Currently, Remittance Agents have no incentive to encourage customers to register for mobile money, and can instead promote the option which is easiest and fastest for them as well as the customer.

2. Rules Impacting Ability to Scale The Number of Non-Bank Cash In/Out Agents

For a Filipino business to become a mobile money cash in/out agent, they must first attain a remittance license, which involves submission of business paperwork and attending a 1-day AMLA training seminar, typically in an urban area. While these rules do ensure that agents appreciate the importance of preventing money laundering or terrorist financing, they do impede the ability to scale the non-bank agent network somewhat. In any market, mobile money providers should work with regulators to seek innovative (but equally effective) methods of administering AMLA training if such training is deemed to be necessary. Examples of innovative solutions could include remote AMLA administration, tiers of agent authority and wallet limits. Globe has been working closely with the Bangko Sentral ng Pilipinas and the Anti Money Laundering Council and has recently received approval for their own staff to administer AMLA training remotely (i.e. Globe staff can visit a prospective agent at their business premises). This will enable Globe to scale their agent network rapidly and cost effectively, while eliminating the need for prospective agents to sacrifice a day of income (in some cases) to get accredited.

3. Brand Identification and Relevance to Base of Pyramid Markets

GCASH and SMART Money have already been widely adopted at the base of the pyramid. Sustained and increased growth in this segment will come from ensuring that offerings are aspirational, but also relevant and attainable. Customers must feel that the mobile money offering is designed for 'people

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like them'[16] – particularly those at the base of the pyramid – which comes from emphasising the fact that features address needs that transcend income bands. Growth in this market will also come from the ability to amplify the visibility and ecosystem size in base of pyramid communities, something that would be faster and easier with flexibility around agent licensing rules. Growth will also come from offering sophisticated financial services – like savings and access to credit – that the market has indicated a demand for.

[16] The 2009 CGAP GSMA survey confirmed that 27% of unbanked survey respondents believe mobile money is a service for people like them.

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Appendix A: Overview of Market Players

GCASH

Globe Telecom launched GCASH in 2004. The service provides Globe and TM subscribers with a cashless and cardless method of facilitating money remittance, donations, loan settlement, disbursement of salaries or commissions, and payment of bills, products and services, via text message. Customers access GCASH through an SMS syntax, or a menu from a SIM Tool Kit integrated in the SIM, or by a menu that can retrieved via an over the air facility that pushes the menu to the subscribers SIM.

Registration

Customers can register for the service anywhere and at any time using a handset with an active Globe or TM SIM. A sequence of screens prompts customers to enter the personal information required to conduct KYC (i.e. name, year of birth, address) and upon completion they receive notification that they are registered for GCASH.

Cash In/Out

Whereas SMART partnered with Banco De Oro to create a cash in/out network, Globe has not partnered with a commercial bank and instead relies largely on non-bank agents[17] for this function. Pawnshops, department store outlets, and Globe Telecom stores are used to perform cash-in/out in both urban and rural areas. Globe has also partnered with many rural banks[18], which play a key role in facilitating cash-in/cash-out.

Use

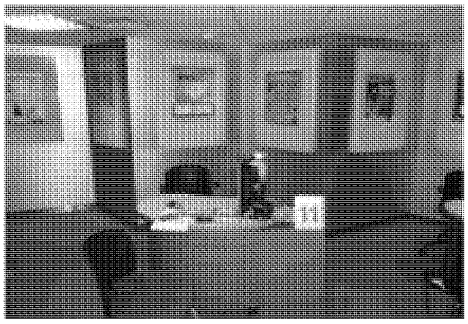
Customers can access GCASH through either a SIM browsing menu or SMS. To date, customers have strongly preferred the SMS option. Any type of transaction is initiated (whether it's a money transfer, tuition payment, or retail purchase) by first entering the recipient's phone number and then the required information in an SMS message. For a money transfer, the transaction log information that would be entered in the SMS message is simply the amount followed by the user's m-PIN. For a tuition payment, the syntax would also include the student's name and ID number. After each transaction, customers receive confirmation details[19] as well as a reminder to delete their SMS history since sent messages may contain their m-PIN.

SMART Money

SMART Communications launched SMART Money in 2001. The service includes a reloadable payment card linked to a SMART mobile phone and enables customers to use their mobile to send and receive money domestically and internationally, buy airtime, receive salaries, repay MFI loans, and pay bills. Customers can also pay for goods at merchants using a SMART Money card.

Registration

The process of activation (menu based or by texting MONEY to 343) is the first step for registration.



There are immediate transactions (i.e. airtime reload, money transfer) that can be done as a result of this initial process whereby a 16 digit SMART Money account is made available to the customer. To get their personalised account and/or a card, customers visit one of 95 SMART Wireless Centres to fill out an

[17] In this context, a non bank agent refers to non commercial banks. Rural banks do factor in significantly in Globe's distribution strategy.
[18] Through USAID supported project
[19] The confirmation SMS informs the user of the name of the person they just sent money to. This provides peace of mind to consumers, who often fear sending money to the wrong number.

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application form that captures their name, age, gender, marital status, residential address and employment/education information. Applicants do not need to have a bank account to register, but do have the option of linking their account if they are with one of 14 banks that have a partnership with SMART. This makes the process of loading cash onto an account simpler and more convenient for the customer.

When a customer registers, they have the option to instantly receive a generic SMART Money MasterCard, or to wait for a personalised card to be mailed to them. Customers who receive a personalised card are not required to subsequently show ID when transacting because KYC has already been performed. Customers who receive a personalised card can then link it to their mobile in a few steps using their mobile phone.

Cash-In/Out

Loading cash into a SMART Money account or converting e-value into physical cash is done differently by urban and rural customers. In urban areas, Banco De Oro (BDO) branches, Shoemart stores, ATMs and SMART Wireless Centres serve as the primary cash-in/out network. In rural areas where these types of locations are less accessible, SMART relies on MFIs, pawn shops and money changers to perform cash-in/out.

Use

Customers access SMART Money through a SIM browsing menu on their handset. All transactions are initiated using the menu, but confirmation messages that result from any action taken on the menu are delivered and displayed to users in SMS format. For money transfer, both the sender and a receiver must be registered with SMART Money (and thus, must be customers of SMART or Talk n Text). The maximum amount of money that a customer can send per day is P50,000 (USD$1,020), and the maximum amount that can be withdrawn is P30,000 (USD$612).

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Appendix B: Composition of SMART and GCASH Ecosystems

Overview

SMART and Globe both conceptualise and build their ecosystems with consideration for three key areas:

1. Source of funds
   i.e. Family member who sends a remittance; Corporation who distributes salaries
2. Recipient of funds
   i.e. Family member who receives remittance
3. Uses of funds
   i.e. Merchant who accepts mobile money; corporations who accept mobile money for bill payment; airtime purchase; money transfer

In many cases, unique ecosystems are built in specific geographic areas, so that across the Philippines multiple different ecosystems could exist, each with a slightly different composition.

Key differences between the SMART Money and GCASH ecosystems include:

1. Role of banks
SMART's banking partner and e-money issuer, BDO, is highly visible, contributing heavily to their cash-in/out network, issuing cards, and providing acquiring POS terminals for merchants. Globe has created its own ledger system facilitating information within its customers and also runs its proprietary settlement system that connects to all commercial banks in the Philippines. GCASH has remained an open platform that is able to enter into bi-lateral agreements with many banks for specific transactions or target customers.

2. Approach to customer registration
SMART relies on wireless centres to perform customer registration. GCASH users can register from anywhere on their handset.

3. Approach to cash in/out
SMART's 'first line of defence' for cash-in/out is commercial bank branches and ATMs. While GCASH also provides cash-in access through ATMs, their model relies more so on the 3,000 cash-in/out points[20].

4. Approach to developing retail payment network for customers
For the most part, SMART leverages retailers who already accept cards for their retail network. GCASH has acquired retailers, and thus a transaction does not include issuing or acquiring banks – just a customer and a merchant.

[20] Includes Globe business centres, pawnshops, rural banks, and non bank remittance agents

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SMART Money Ecosystem

Key Participants:

Banco De Oro (BDO)

Contribution:

a. Network of BDO Accredited Merchants: Banco De Oro has the largest network of accepting merchants in the Philippines.[1] This means that when a SMART Money customer uses their card on a BDO POS device, no bank interchange fee is required to be paid by SMART Money or BDO on the transaction.

b. Card Issuance: BDO is the issuer of the SMART Money MasterCard. When this card is used at merchants who have been accredited by a bank other than BDO, interchange revenue is earned.

c. Cash-in/out: BDO's 675 bank branches are the front line for cash-in/out in urban areas of the Philippines. Additionally, they provide SMART users with access to 1,299 ATMs via the Plus, Expressnet, Megalink, and BancNet networks. SMART's relationship with BDO also enables all BDO customers to link their bank accounts to SMART Money to simplify and expedite the cash-in process.

d. Promotion: BDO promotes the SMART Money MasterCard in their bank branches. BDO also issues non-SMART Money branded MasterCards, so it is vital that branch staff are educated on what types of customers should be pitched the SMART Money card.

Incentives: BDO has a share on the financial revenues when SMART Money cards are used at merchants who have been accredited by a bank other than BDO. Their strategic and "ahead of its time" partnership with SMART also precludes another bank from issuing the card, which would result in the requirement to pay interchange fees whenever it is used on their large network of accredited merchants.

MasterCard

Contribution:

a. Interbank Account Settlement: Provides interbank account settlement when SMART Money cards are used at a merchant who has not been acquired by BDO.
b. Access to Mastercard enabled ATMs and POS: Enables SMART Money card users to transact outside of the Philippines on ATMs and POS enabled by Mastercard

Incentive: Interchange revenue.

SMART Wireless Centres

Contribution:

a. Customer Registration: SMART Wireless Centres (SWC) are the sole location where customers can register for SMART Money.
b. Cash-in/out: Customers can cash in at an SWC for no charge, and can withdraw funds for a 1% fee.
c. Service and Support: Staff at SWC can help customers troubleshoot problems and serve as a contact point for issues that cannot be resolved over the help line.

Incentive: SMART corporate directive.

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Mobile Banking Bank Partners and International Bank Partners

Contribution:

a. Cash-in: SMART has developed relationships with 14 additional commercial/ universal banks in the Philippines to enable banked customers to link their bank accounts to SMART Money to simplify and expedite the cash-in process.
b. Mobile Customer Acquisition: Customers of SMART's commercial banking partners that wish to conduct mobile banking can only do so using a SMART or Talk n Text SIM, thus this exclusive relationship helps SMART acquire new mobile customers.
c. International Remittance: SMART has development relationships with multiple international banks like NCB, AUB, BDO International, PNB Global, etc. directly and/or through its local commercial bank partnerships that enabled Filipinos in countries with high concentration of OFWs to remit via text.

Incentives: SMART enables banks to offer mobile banking functionality as a value-added service to their customers. This also enables banks to market to SMART subscribers who are not yet bank clients.

ATM Networks (Expressnet, MegaLink, BancNet)

Contribution:

a. Cash-out: Customers can withdraw funds from their SMART Money account using ATMs.

Incentive: Fees from customer use.

International Remittance Partners

Contribution:

a. Cash-in/out: Enables international senders and receivers to perform cash in/out

Incentive: Commissions from transactions.

Non-Bank, Non-Financial Institution Agents

Contribution:

a. Cash-in/out: In rural areas where BDO has poor branch coverage, SMART relies on non-bank agents (i.e. pawn shops, money changers) to perform cash-in/out.

Incentive: Non-bank agents earn a commission when customers transact. The SMART Money ecosystem also includes retailers, MFIs, rural banks, and Bill Payment partners who deliver variable contributions to the ecosystem depending on their geographic locations and target user base.

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GCASH Ecosystem

Key Participants:

Non-Bank, Non-Financial Institution Agents

Contribution:

a. KYC: Since customers register for GCASH via their handset and KYC has yet to be administered by a person (though the information has already been captured), licensed cash-in/out agents such as pawnshops, rural banks and non-bank agents, which are responsible for validating the identity of customers each time a transaction is made. Commercial bank branches are not used for cash-in and cash-out in the current GCASH model.
b. Cash-in/out: Commercial bank branches are not used in the GCASH model. Instead, non-bank agents like pawn shops and retailers are relied on to perform cash-in/out.

Incentive: Agents earn a commission when customers cash-in or out (P10 or 1% of the transaction value, whichever is higher).

Rural Banks[21]

Contribution

a. Customer Acquisition: Rural banks who could not previously offer money transfer as a service to their clients add GCASH to their suite of services and in turn recruit new bank customers that can also have access to their own mobile phone banking services through GCASH
b. Cash-in/out: 60 rural banks with 800 branches provide cash-in/out

Incentive: Offers rural banks ability to provide deposits, withdrawals, payments and payroll services to clients in areas where ATMs are not prevalent or no commercial banks exist via 'text-a-deposit', 'text-a-withdrawal' and 'text a salary' services.

Globe Centres

Contribution

a. Cash-in/out: Customers can cash in at a Globe Centre for no charge, and can withdraw funds for a 1% fee.
b. Service and Support: Staff assist customers and serve as a contact point for issues that cannot be resolved over the help line.

Incentive: Globe corporate directive.

[21] Globe has worked closely with Microenterprise Access to Banking Services (MABS) and USAID to execute their strategy working with Rural Banks.

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Salary Disbursement

Contribution:

a. Customer Acquisition: Each organisation that disburses salaries via GCASH drives adoption
b. Volume for Agents: In many cases provides large financial flows for agents from which they can earn regular commissions.
c. Catalyst for Retail Acceptance of GCASH as Payment: When an employee converts their GCASH salary payment into cash at a merchant, it catalyses merchants to begin accepting GCASH for retail payments.

Incentive: Using GCASH, employers can pay customers electronically, saving administrative time and risk involved in previous payment methods. Rural banks offer the service to employers to solidify relationships with customers and create opportunities to earn revenue from other services.

Retailers

Contribution:

Use of GCASH: Small merchants, as well as large retail chains, including Mercury Drug and SM Department stores, accept GCASH as payment and offer customers an additional use for their e-money. Payment is made via the mobile at these retailers (large retailers have integrated GCASH into POS devices).

Incentive: Offer cashless payment option to customers, while avoiding the 0-3% merchant discount fee.

Bill Payment Partners

Contribution:

a. Uses for GCASH: Offers customers an additional use for GCASH
b. Volume for Agents: Customers who pay their bills using GCASH must load money onto their account at an agent. Agents earn a commission for providing the cash-in service.

Incentives: Makes it easier and cheaper for customers to pay for bills and use services by reducing travel time, reduces need for payment accepting infrastructure, reduced incidence of late payments.

ATM Networks (BancNet)

Contribution:

Cash in: Customers can transfer funds from their bank account into GCASH account

Incentive: Fees from customer use.

International Remittance Partners

Contribution:

Cash-in/out: Enables international senders and receivers to perform cash-in/out

Incentive: Commissions from transactions. Remittances at the speed of text

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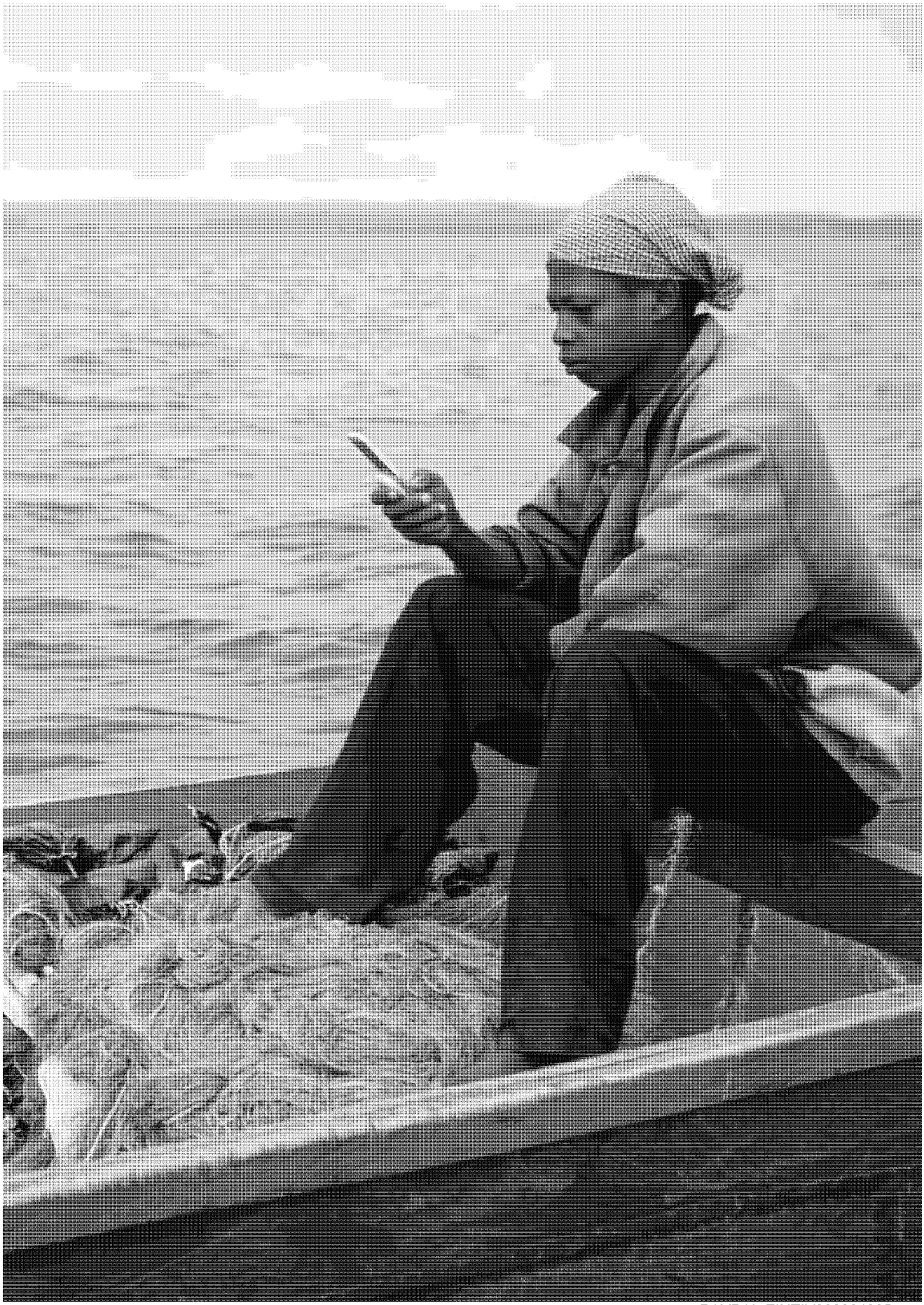

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