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Banking By Mobile Phone – Transferring Funds via Text Messages in the Developing World

By Aoife Keenanⁱ

I. BACKGROUND

“Mobile payments” refers to a method by which subscribers can transfer money in real time via text message.ⁱⁱ It has become the “new” way of banking in the developing world over the past ten years. In poor, rural areas of the developing world, there is limited access to banking services. Lack of infrastructure and funding, geographical constraints,ⁱⁱⁱ illiteracy, a lack of basic requirements such as relevant paperwork, the danger of travelling to deposit money (considering highway robbery occurs frequently), a lack of security and collateral for loans and mistrust of banks and their bureaucracy have left a massive proportion of the world’s population unbanked. Their unbanked status has created a niche for mobile payments.

Mobile payments allow unbanked people to avail themselves of banking services at their doorsteps without necessarily requiring access to any bank account. This method permits the direct transfer of money from one mobile telephone number to another. Withdrawals and deposits are made in a variety of locations, including corner shops and pharmacies that sell prepaid mobile phone credits.^{iv} It is possible to make transfers over large distances, saving customers time and money, as well as negating the risks of travelling with money. Groups who previously travelled to pay off micro-finance loans can now do so via mobile payments, eliminating time, cost and danger.

II. REGIONAL EXAMPLES

Mobile payments have been used in a variety of different countries, including but not limited to Kenya,^v South Africa, Philippines, India and Nigeria. See Table I *infra*. The widespread use of the mobile payments method indicates its success. The success, however, varies in each place depending on a number of varying factors such as: (1) alternative means of banking and making payments; (2) regulations; (3) the number of mobile phone users; (4) type of financial institutions in place; and (5) implementation plan. However, on the whole, it appears the model is successful in developing countries. The method has not been as successful in developed nations, such as the United States, where there are other options and banks are easily accessible. In Japan, however, mobile payments are used.

In Kenya, M-PESA originated as a person-to-person funds transfer service but has diversified into other areas, such as salary and bill payments. M-PESA also enjoyed a 4,627 percent increase in monthly transactions over two years, which led to growth in the value of monthly transactions in Kenya by 3,671 percent. It has also created job opportunities in the form of agents across the country.^{vi} MTN mobile money in Uganda has over 1 million customers and 1,500 agents and has transferred over \$245 million.^{vii} These statistics show that although mobile payment models have encountered many obstacles, they have been successful in many developing countries.

TABLE I
Companies Providing Mobile Payment Services

Mobile and Card-Based Technologies for Remittance Transfers and Payments

Company	Description	How It Works
<i>Company: Celpay</i>	<i>SIM-based mobile phone payment system Countries: Zambia, Democratic Republic of Congo</i>	<i>'A Celpay SIM card provides the Celpay menu. Funds are deposited in a Celpay account, using the cell phone to transfer from a bank account or, if the user is unbanked, depositing cash at a partner bank. Purchases can be made via SMS by entering the amount to be paid into the phone and authenticating the transaction with a PIN. The service provider instantly transfers the money to the merchant's Celpay-enabled account. Merchants pay a commission of 3.4 percent of the total transaction amount.'</i> (UK DFID & USAID, at 2.)
<i>Company: G-Cash</i>	<i>Mobile phone-based money transfer service provided by Globe Telecom (GTel) Countries: Philippines, in partnership with Bahrain, Hong Kong, Italy, Singapore, Taiwan, and U.K.</i>	<i>'GTel mobile phone subscribers register via text message. Funds can then be deposited and cashed at G-Cash affiliates and GTel offices throughout the network. Funds transfers (from sender to recipient and from G-Cash account to payout in cash) are communicated via text message. A 1 percent processing fee is charged both to deposit and to receive funds (i.e., 2 percent total for a remittance transfer).'</i> (UK DFID & USAID, at 2.)
<i>Company: SMART Money</i>	<i>Description: Mobile phone-based SMS money transfer service and linked debit card. Smart Padala is a branch of SMART Money. Countries: Philippines</i>	<i>'SMART Money is provided by SMART, a mobile phone company in the Philippines, in partnership with MasterCard. The service enables users to transfer money from a bank account to a SMART Money account. Subscribers can then use a SMART Money card like a debit card to pay for goods and services at a network of retail stores and restaurants, or to make withdrawals from ATMs. The service also allows</i>



		<i>users to transfer cash from one SMART Money card to another via SMS. For remittances, workers outside the Philippines can deposit funds at any of the phone company's remittance partners in 17 countries. A 1 percent processing fee is charged.' (UK DFID & USAID, at 2.)</i>
<i>Company: SVA</i>	<i>Countries: Currently pilot testing in Ecuador, El Salvador, and Mexico; planned expansion to Asia, Caribbean, East Africa, and South/Central America; signed alliance agreement with Banco Solidario to link payout locations in Bolivia, Ecuador, and Peru</i>	<i>'Funds from SVA (closed system) cards can be transferred in real time to bank-issued debit (open system) cards, which can be used for ATM withdrawals, signature based purchases, and card-not-present transactions. Also allows for direct deposit of payroll checks and for bill payment without a bank account.'</i> (Mendoza & Vick, at 556.)
<i>Company: NTT-DoCoMo i-Mode FeliCa</i>	<i>Description: Cell phones with embedded multi-application smart chips Countries: Japan</i>	<i>'Phones are loaded with cash deposits at terminals. The phones can be used as pre-paid electronic cash, credit cards, travel tickets, access control cards, authorizations to access corporate networks, or entry cards such as for club memberships or loyalty programs. Selected information—the remaining electronic cash balance, for example, or transaction records—can be displayed offline on the cell phone. Transactions are completed at POS terminals that deduct the amount of a purchase or read other information from the embedded chip.'</i> (UK DFID & USAID, at 2.)
<i>Company: WIZZIT</i>	<i>Wizzit is a mobile banking provider. It provides a bank account that is accessible via mobile phone and card.</i>	<i>'Customers use their mobile phones to make person-to-person payments, transfer money, purchase prepaid electricity, and buy airtime for a prepaid mobile phone subscription...</i>



	<i>Countries: South Africa</i>	<i>Partner banks equip small shops, such as lottery outlets, post offices, supermarkets, petrol stations, and other retail outlets, with a point-of-sale (POS) device, such as a card reader or PC connected to a mobile phone. At these outlets, customers can open or access a variety of accounts, including savings, credit, insurance, money transfers, government benefits, and bill payments.’ (Mendoza & Vick, at 556.)</i>
<i>Company: E-ZWICH</i>	<i>Description: E-zwich is a mobile banking provider Countries: Ghana</i>	<i>‘The mobile-banking platform combines payments, banking and real-time, two-way data transmission for on-the-move, ubiquitous access to financial information and services. This concept of providing financial access to the poor through mobile-banking services is similar to the e-zwich services introduced by the Ghana Inter-bank Payment Systems (GIPS). E-zwich is an electronic platform that enables loading and spending of e-cash, and also allows the settlement of inter-bank claims in addition to online transactions. The mobile-banking platform aims at bridging the gap between the banked and the unbanked consumers in Ghana.’ (Hinson, at 328.)</i>

Sources: UK DFID & USAID, at 2; Hinson, at 328; Mendoza & Vick, at 556.

III. LEGAL FRAMEWORK

In legal terms, mobile payments have been enabled by companies’ internal rules; inter-company private contractual agreements;^{viii} company/ consumer contracts; guidelines of NGOs; and domestic, financial, advertising and internet and computer technology^{ix} regulations. In the corporate world, there is evidence of a reluctant and conservative approach to the development of mobile payments. Directors have a duty to spend money wisely for shareholders, which may be seen as counter-acting any investment in mobile payment services due to the high level of perceived risks. Fortunately, challenge funds^x can be used to launch mobile payments projects.^{xi} Partnerships



between mobile phone network operators, micro-finance institutions (“MFIs”) and banks enable mobile payment services, by combining the expertise of each institution to create a valuable service.

Company/ consumer contracts create barriers for network providers attempting to set up mobile payments services in countries with weak legal systems. Where there are weak legal systems, enforcing contracts can be difficult and risky. Small loans without collateral or guarantees are also at high risk. This can deter institutions from investing in micro-finance or mobile payments ventures. Network providers have overcome these barriers by attempting to create new and innovative contract terms. These contract terms include group loans whereby individual loans are given to each person in a group with the liability falling on other group members if one member defaults. Peer pressure and social standing encourage members to keep up with repayments. This method has proven successful. Furthermore, some MFIs collect money from service users in public, making transactions more transparent and again encouraging customers to make repayments through fear of embarrassment in front of peers. Mobile payment services and MFIs can run without a banking license.^{xiii}

In order to enable the provision of mobile payments, a complex structure can be put in place in which a project is run locally but owned, hosted and developed by another company. Therefore, the operation might take the form of a trust in which a local institution works on behalf of a bigger company, such as Orange and Vodafone, that initiates the provision of services. The bigger company, such as Orange, might set up a trust and pool the various assets of the local institutions into a single trust account. The trust does not make money from the interest on consumer savings. However, the trust does make it possible to hold all of the collective funds in a single account to guarantee the transactions.

In countries where mobile payment services do not pose a great threat to the business of established banks,^{xiii} many of the financial regulations of the banking industry do not have much of an impact on mobile payments except that customer security and financial reporting requirements are imposed on the mobile payments system as well as ordinary transactions.^{xiv} In countries where mobile payments are perceived to pose a risk to banks, contracts can be drafted to enable partnerships between banks and network providers to minimize the risks to the participating banks.^{xv} Table II, *infra*, describes some of the different national regulatory systems that support or limit mobile payment services.

TABLE II
National Regulations Affecting Mobile Payments

COUNTRY	REGULATION
<i>Kenya</i>	In order to enable mobile payments, Kenya issued a new regulation in 2010. This regulation allows banks to partner with retail outlets and enables retail outlets to promote products and handle transactions on behalf of banks. M-PESA used retail outlets as a channel to reach unbanked customers since customers of M-PESA deal with small retail outlets throughout the country. These agents might not have been legally entitled to enter into such transactions if the 2010 financial regulation had not been passed.
<i>India</i>	The Central Bank in India blocked moves by several network



	providers, such as Vodafone, who wished to set up mobile payment services in India. It was adamant that banks must be directly involved. This stems from perceived issues, such as: financial fraud, account misuse and complexity of use of mobile payment systems. ^{xvi} India is taking a protectionist approach and has not created a regulation to enable nonbank mobile payment services. The Central Bank of India has set a standard whereby only a licensed bank with a presence in India can launch a mobile payments service.
<i>South Africa</i>	In South Africa, mobile banking services are not entitled to carry out monetary transactions unless they are partnered with a bank, as set out in the Position Paper on Electronic Money. ^{xvii}
<i>Nigeria</i>	Service providers in Nigeria have no constitutional right to carry out monetary transactions, or facilitate mobile payments, without being partnered with a bank. As in South Africa and India, banks are at the centre of the evolving mobile payments industry. The Bank of Nigeria is responsible for maintaining high standards of banking and financial stability under the country's Banks and other Financial Institutions Act 1991. Therefore, they are reluctant to allow mobile payment services to operate without a bank in case banking standards are not maintained.
<i>Philippines</i>	The Philippines' Central Bank issued a resolution in 2004 approving mobile payments services. Although circulars have been passed to limit fraud and increase the responsibility of financial institutions running the payments services, ultimately, regulation in the Philippines has enabled mobile payments. (It may also be worth acknowledging that, G-Cash, one of the main mobile payment operators in the Philippines, is regulated by the Philippines Securities and Exchange Commission by virtue of their listing on the Philippines National Stock Exchange.)

IV. UTILITY FOR MFIs

In the appropriate legal environment, MFIs might enter into an agreement to provide financing for a partner that issues credits through mobile payments. The existing system of mobile payments has diversified into a variety of services such as (i) allowing Party A to payback Party B for services rendered by repaying a loan owed by Party B to a third Party C, (ii) keeping funds safe overnight, (iii) paying salaries, (iv) paying bills, (v) providing low cost international remittances, (vi) checking account balances and (vii) making deposits and withdrawals. A cursory literature search does not suggest any major impediments, aside from perceived risk and management of logistics.^{xviii}

Any MFI attempting to set up a mobile payments venture should ensure that its partner honor any relevant national regulations, internal company guidelines, and contractual agreements. It would also be advisable to partner with a local network provider in order to gain expertise in this area^{xix} and to ensure the process runs effectively. It is highlighted in the literature on micro-finance that



inter-company partnerships and agreements can have either detrimental or beneficial results in the mobile payments sector. Therefore, it would be wise to assess potential advantages and disadvantages of contractual agreements in this sector.

M-PESA in Kenya is an example of a beneficial result. In Kenya, there was no need to partner with local banks that might have had conflicting ideals. M-PESA consisted of a partnership between Vodafone and Safaricom. Both entities were linked and they worked together to achieve similar goals. This contributed to M-PESA's success.

Due to national regulations, in India, it is necessary to partner with banks. Conflicting ideals between banks and mobile service companies can cause major problems due to different end-goals and processes for achieving the goals. In the case of Vodafone, these requirements had the detrimental effect of preventing Vodafone from setting up a mobile payments service in India, ultimately limiting access to consumers and profits.

V. CONCLUSION

Mobile payments are playing a monumental role in developing countries by providing services to both the unbanked as well as to end consumers of micro-finance. The service is making MFIs more accessible. Therefore, a mobile payments partnership might be useful for any MFI with benefits for end users, saving them time and money when paying off their loans.

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ⁱNational University of Ireland Maynooth, LLM (expected 2013); Law Clerk, RJ Gaudet & Associates LLC; aoife@rjgaudet.com

ⁱⁱThe origins of mobile payments have been linked to Smart Communications, a mobile network provider in the Philippines, who launched a mobile payments service in 2001.

ⁱⁱⁱFaulu Kenya is a MFI. Service users meet in large groups weekly, where they transfer money to an individual, who then travels to deposit the money in the nearest bank, with a body guard of group members. This is costly, time consuming, dangerous and keeps people away from work or their businesses.

^{iv}“The proposition started to firm up around the design and test of a platform that would allow a customer to receive and re-pay a small loan using his or her handset. We wanted to allow the customer to make payments as conveniently and simply as they do when they buy an airtime top-up”. Medhi et al *supra*.

^vM-PESA was launched by Safaricom and Vodafone (Kenya’s largest mobile service provider) in March, 2007. It offers urban-to-rural remittances.

^{vi}Kimenyi & Ndungu.

^{vii}Ndiwalana, et al, at 2.

^{viii}Mobile network are new, entrepreneurial companies experiencing rapid growth and high profits through low-value transactions. Banks are mature with established rules and are cautious when doing business. They deal in higher cost transactions, although there are less of them. Therefore there is a conflict of ideologies between both entities. The only way to overcome this according to Vodafone/ Safaricom was to build a new model.

^{ix}“Banks are increasingly using technology networks to overcome geographical barriers and enhance clients’ access to services. Examples of leveraging ICT networks include recent innovations by Globe Telecom and Smart Communications, the two largest mobile telecommunications companies in the Philippines. Globe Telecom offers a service that allows customers to send and receive money via a mobile phone. The service is called G-Cash and



facilitates money remittance and many other transactions with just a text message or SMS. Through this innovation, the cost for money transfer decreases substantially and access to transfer services for remittances is extended to geographically remote areas.” Mendoza & Vick, *supra*, at 554.

^xThis means investing funds in new areas of business that are higher risk.

^{xi}“In 2000, the U.K. government’s DFID established the Financial Deepening Challenge Fund (FDCF), making available £15m for joint investments with the private sector on projects that help improve access to financial services. Twenty eight projects have been funded in South Asia and Africa. Hughes & Lonie, *supra*, at 67.

^{xii}This is the reason that mobile payments services must partner with banks in certain jurisdictions, as they are not authorised to carry out financial transactions without a banking license.

^{xiii}During the creation of M-PESA, the company had to communicate with the central bank of Kenya regarding financial regulation; however the small risk made the venture of little interest to them.

^{xiv}Other requirements may include product demonstrations, requests for documentation, compilation of information, answering regulatory questions, participating in meetings for clarification, submitting formal legal opinions, and so forth.

^{xv}A network provider is a form of organisation that provides the public/ consumers with either a telecommunications or internet service. Examples include Vodafone, safaricom and Orange.

^{xvi}Sharma & Singh.

^{xvii}S. Afr. Reserve Bank, position paper on electronic money (2009)

^{xviii}Mobile payments are designed to bring business efficiencies to MFIs, allowing them to move to provide loans to very remote locations, that the service has not yet reached.

^{xix}When M-PESA was setting up, Vodafone felt it was necessary that its staff understand the systems and capabilities of Safaricom, the local network, in order to create a successful commercial service. As they would be administering the ground activity, it was vital to have their commitment. They were targeting the unbanked, therefore it was vital to operate in the absence of a bank account, this meant, there would be a need to hold whatever real money was in the system in a bank account somewhere on the customers behalf. Hughes & Lonie, *supra*, at 79.

