

Mobile banking, mobile money and telecommunication regulations

LIRNEasia and UP-NCPAG

Table of contents

Introduction	2
E-money, M-money and the Mobile Financial Services.....	5
Mobile Banking Models	8
M-payments and telecommunication policies	9
1. Market entry	9
2. Anti-competitive practices	10
3. Access to scarce resources	11
4. Tariff regulation.....	12
5. Interconnection.....	14
6. Universal Access	18
7. Quality of service	19
Conclusions	22
References.....	25



This work was carried out with the aid of a grant from the International Development Research Centre, Canada and the Department for International Development, UK.

Mobile banking, mobile money and telecommunication regulations

LIRNEasia and UP-NCPAG

Introduction

Providing mobile money through mobile phones is a value-added service offered through telecommunication companies. Its issuance involves both telecommunication and bank regulations. But for complaints about this service, the first avenue for redress is often the telecommunication company, if not the telecommunication regulator.

Similar issues have been raised in the past with respect to commercial text spam, and promotional games using mobile phones. In previous cases in the Philippines, complaints have often been raised to the telecommunication regulator, although upon further scrutiny, it was later seen as the concern of the Philippine Department of Trade and Industry. Resolving potential problems like these, especially in the context of using mobile money for m-commerce or for remitting money (Alampay & Bala 2009) is important for confidence to grow in its use and usage to expand.

Past investigations on branchless banking have acknowledged the important role that mobile phones play in some models (Ivatury & Mas 2008, Lyman, et. al 2008). They are consistent with the promise seen in electronic money bringing improved efficiencies and reducing transaction costs (Basle 1998). This includes its potential for expanding financial services to the unbanked poor (Ahmad 2006, Soriano et. al. 2008, Bangens & Soderberg 2008). However, these technologies also have risks. The challenge is striking the right balance where regulation does not hinder useful innovation and experimentation and permit branchless banking to

expand and thrive, in other words introduce 'proportionate' regulatory policies (Lyman, et.al 2008).

Telecommunication companies and financial institutions also have interests in making this experiment prosper. Issuing e-money, for one, can be seen as a strategy for telecommunication companies to keep churn rates low and retain customer loyalty (Wishart 2006, Bangens & Soderberg 2008). It can provide them with new potential customers, added sources of revenues (e.g. transaction fees, share of foreign exchange spread, service sign-up fees, etc), and help increase their average revenue per user (ARPU). For financial institutions, mobile banking and mobile money can help increase banking penetration, develop customer loyalty, reduce operational costs, meet government service obligations, etc. (GSMA, 2008a, Wishart 2006).

Overall, it is the rapid diffusion of the mobile phone network and its diffusion to a diverse set of clients, including the bottom of the pyramid (Zainudeen 2008) that excites people about its potential, especially for undertaking financial transactions with respect to remittances (Bangens & Soderberg 2008). But, with respect to reaching the unbanked, the success of e-banking is connected to telecommunication policies that address infrastructure, available services and applications (Ahmad 2006).

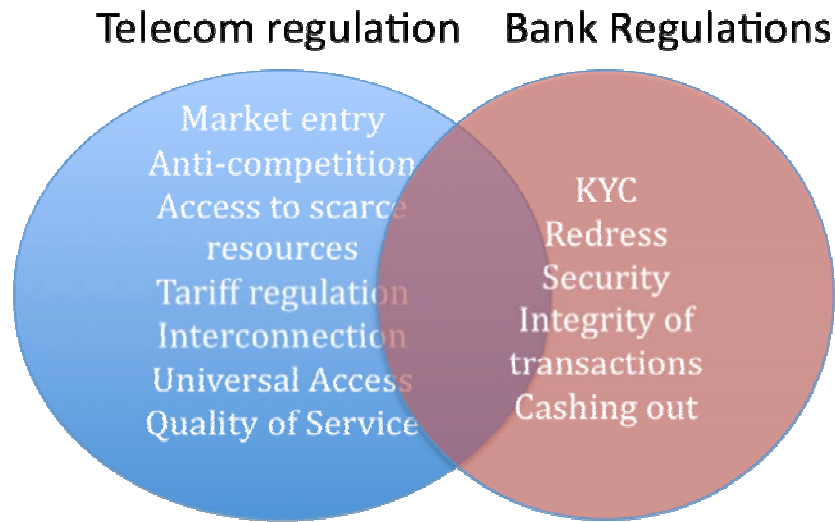
It is from this premise that this paper investigates the interface between telecommunication and banking regulations and policies to provide safeguards without hindering the industry. However, much of what has been written regarding the regulatory issues with respect to e-money and m-money has been from the side of banking regulations. Banking regulations are based on the need for addressing problems of information asymmetry and controlling, for good or ill, the creation of money outside the government monopoly. It is about regulating risk to the system and risk to the economy. Moreover, bank regulators define their object of regulation for m-money not on whether the relevant entities call themselves

banks but on the terms and conditions of how the money that they take from customers are treated and whether or not they extend credit to customers. Among the issues that have been commonly discussed with respect to mobile money pertain to authentication, such as knowing your customer (KYC), authorization and integrity of the transaction, monitoring the amounts kept by individuals and the amounts they send (anti-money laundering), security and redress mechanisms, among others.

On these issues, this paper will look at how they involve telecommunications regulation. Telecommunication regulation is based on the control of market power, whereby the conditions for competitive provision of services are created under highly imperfect market conditions. According to Bangens & Soderberg, “telecommunications regulators seem to generally take the position that mobile operators are licensed to transfer information over mobile networks including financial information” (2008: 21), with the risks being small, and with no new or unusual telecommunications issues (Wishart 2006). Given this, the aspect of telecommunications regulations is underexplored, especially considering that from the perspective of consumers, they present the ‘face’ of the service. As such, what telecommunication issues should be considered in light of the m-money service?

To do so, this paper will focus on seven regulatory environments that LIRNEasia has been looking at with respect to the telecommunications regulatory environment, namely: market entry; access to scarce resources; interconnection; tariff regulation; anti-competitive practices; universal service obligations; and quality of service. This paper will discuss the implications of issuing m-money on these policy areas. It will then discuss how they may overlap with issues that are also concerns of banking regulators (see Figure 1).

Figure 1: Telecommunication and bank regulation



A brief literature review on e-money, m-money and mobile financial services is first discussed in the following section.

E-money, M-money and the Mobile Financial Services

Mobile financial services cover a “broad range of financial activities that consumers engage in or access using their mobile phones” (Boyd and Jacob, 2007:6). They can be classified into three separate categories: mobile banking (m-banking), mobile money transfer (m-money transfer), and mobile payments (m-payments) (GSMA, 2008a)

M-banking

M-banking is subsumed under the larger category of electronic banking. Electronic banking (e-banking) refers to “the provision of retail and small value

banking products and services through electronic channels. These include deposit taking, lending, account management, the provision of financial advice, electronic bill payment and the provision of other electronic payment products and services such as electronic money” (Basel 1998:3). As a form of e-banking, m-banking is defined as:

“...financial services delivered via mobile networks and performed on a mobile phone. These services may or may not be defined as banking services by the regulator, depending on the legislation of the country in question, as well as on which services are offered.”
(Bångens and Söderberg 2008: 7)

Porteous (2006) further explains that mobile banking can either be additive or transformational. For the former type, m-banking is considered an additional channel for existing clients to access banking services; in the transformational category, however, it targets clients who do not have bank accounts, aiming to include them into the formal banking system. (Bångens and Söderberg 2008)

M-money, on the other hand, is a form of electronic money. Electronic money refers to “stored value or prepaid payment mechanisms for executing payments via point of sale terminals, direct transfers between two devices, or over the computer networks, such as the Internet. Stored value products include hardware or card-based mechanisms (electronic purses or wallets), and software or network based cash (also called digital cash)” (Basel, 1998:3-4). M- money then refers to “services that connect consumers financially through mobile phones. Mobile money allows for any mobile phone subscriber – whether banked or unbanked – to deposit value into their mobile account, send value via a simple handset to another mobile subscriber, and allow the recipient to turn that value back into cash easily and cheaply” (GSMA, 2009:7). In this way, m-money can be used for both transfers and payments.

In fact, m-money is generally used in m-payments and m-money transfers rather than for m-banking. As such, m-money does not earn interest compared to bank deposits as provided in banking regulations such as in the Philippines. The Bangko Sentral ng Pilipinas provides in Sec 4.C of Circular 649 that:

“E-money may only be redeemed at face value. It shall not earn interest nor rewards and other similar incentives convertible to cash, nor be purchased at a discount. E-money is not considered a deposit hence it is not insured with the Philippine Deposit Insurance Corporation.” (BSP, 2009:2)

This ensures that all e-cash (of which m-money is one) dispensed and circulating corresponds to actual funds in the system. This helps the central banks track movements in money supply¹ (Mapa, 2009). With this, m-money cannot be used for savings and cannot be lent by m-money service providers (Sec 5.C and D of Circular 649) (BSP 2009). However, whether these funds should not earn interest has been questioned by some, especially when the funds that are pooled to back-up the issued e-money can be deposited in a prudentially regulated institution or invested in “lower-risk” securities (Tarazi, 2009).

Thus far, the use of m-money has primarily been transactional, such as payment of bills (including payment conversion of m-money to electronic loads), transfer of funds. In microfinance, for instance, the system has largely been utilized to transfer and pay loans. In fact MPESA’s experience’s has been similar to this.² In the Philippines it was piloted in micro-financing institutions (MFIs) to provide ease and security in collecting and disbursement of loans (Soriano & Barbin 2007). This paper looks at the aspect of m-payments and m-money transfers .

¹ E-mail correspondence with Nicholas T. Mapa, Economic Learning and Financial Center, Bangko Sentral ng Pilipinas 10 August 2009

² see Pickens (2008) <http://technology.cgap.org/2008/05/28/can-m-pesa-work-for-microfinance-clients/>; Morawcsynski (2009) <http://technology.cgap.org/2009/07/14/what-you-dont-know-about-m-pesa/>

Mobile Banking Models

Lyman et.al. (2006) makes two distinctions of branchless banking: (1) bank-led and (2) non-bank commercial actors. This was further expanded by Goswami & Raghavendran (2009) by breaking down mobile banking variants into 5 models based on how they partner up with telecommunication providers: (1) carriers going solo, (2) banks going solo, (3) exclusive bank and telco partnership, (4) bank-telecom open partnership, and (5) open federation model.

These variations indicate that there is much innovation occurring with respect to delivering m-banking/m-money services. Although innovation is important, at some point, standardization would be needed to support interoperability that would enhance services among customers (GSMA, 2008a). In fact, of the five models mentioned, the open federation model³ is considered by Goswami & Raghavendran (2009) as the most flexible and dynamic since it allows for a partnership between all banks and telecom companies while sharing a common platform for m- banking. The platform then expands the coverage of mobile banking and gives the unbanked a freedom to choose with whom to maintain an account.

The other implication of the variety of existing models is that it creates different regulatory arrangements depending on the nature of partnerships between telecommunication carriers and financial institutions. In the case of SMART Money in the Philippines, for instance, the banking regulations are complied with by its banking partner, whereas the telecommunications aspect is addressed by the telecommunications provider. A regulatory distinction however occurs once there is e-money issuance by a telecommunication company or non-bank entity through the

³ This model is already in existence in New Zealand wherein a “common interchange gateway” links two telecom service providers with six banks to extend coverage area and reduce costs. The model not only reduced costs but increased the percentage of people using mobile banking services. More than 5 percent of New Zealand uses mobile banking; this 5 percent includes more than 40% of the total customers in a financial institution. (Simpson 2007, in Goswami and Raghavendran 2009)

telecommunications operator (Lyman, et al. 2006), as was the case with Globe Telecom's G-Cash. In both cases, they had to work with financial regulators on banking regulations it was not previously concerned with.

M-payments and telecommunication policies

This section will discuss how current models of m-banking and m-money services could have an impact on telecommunication regulatory policies with respect to: market entry, anti-competitive practices, access to scarce resources, tariff regulation, interconnection, universal access and quality of service.

1. Market entry

As far as market entry is concerned, the capacity to deliver m-money can be seen more of a value added service (VAS) for telecommunication providers and as such, does not preclude a telecommunication provider from delivering just telecommunications services.

The interest of telcos for this is to reduce churn, since there are more direct alternatives for increasing revenues per user. Currently, the income generated by m-money is much less than from top-ups. Agents of Globe GCash in the Philippines, for instance, earn 1% commission from offering the service, a relatively small amount compared to their 10% commission from airtime sales (CGAP, 2009).

On the other hand, to be able to deliver m-money services (whether payment or remittance services), it is important to have access to telecommunications services. In most cases, it involves partnering with telecom providers. These partnerships could be exclusive, while in others they are open to any willing carrier. For instance, in the Philippines, SMART Money is a product by a bank (BDO) and is exclusively used for SMART affiliated mobile phone lines. G-Cash, on the other hand,

is a product that is provided for Globe Handyphone users (see Soriano & Barbin). Some m-money models, on the other hand, like WIZZIT in South Africa, operate across all networks and not tied to a specific telecommunications provider (Bangens & Soderberg 2008). Goswami and Raghavendran (2009) gives an example of banks going independently in providing m-banking services, but they do so indirectly through internet services available in newer mobile-internet enabled phones.

Mobile network operators typically do not require special licenses when they serve as access and transmission networks for banks to provide m-banking services (KPMG 2007:29). However, as they become more involved in third party payments processing and cross-border remittances activities, they may be required to apply for licenses under domestic legislation and regulators. Telecommunications providers and financial regulators have to decide where the lines for licensing are drawn.

An option for telecommunications companies is to set-up financial subsidiaries, as what Vodafone, and Globe have done. SMART has a GSMA Mobile Money Transfer program and teamed up with Vodafone (in partnership with the Ahill United Bank of Bahrain) to provide remittance services (for Filipino workers in the Middle East). This implies the partnership would require not only inter-telco but also inter-bank arrangements. These partnerships among various institutions then become a crucial factor in when considering the option of starting m-money services.

2. Anti-competitive practices

The provision of m-money has been acknowledged as a strategy by some telecommunication companies for bringing churn rates down (Wishart 2006, Bangens & Soderberg 2008). The idea being that, if a service such as m-money, is

deemed very important by a subscriber, this would discourage them from moving to other providers, especially if number portability is not in place (Wishart 2006).

Considering the current low uptake of the service, the early stages of its development (Ivatury & Mas 2008), the relatively-low usage rates even among its users, and the trend towards increasing multiple-SIM use (CKS, 2009), this does not appear to be a serious issue at the moment. At present, cross-country remittances is already facilitated by exclusive 'partnerships' with other telecommunication companies that could allow m-wallet transfers across countries. These arrangements and exclusive partnerships, however, may be something worth monitoring should uptake and usage increase, especially in places where these services are tied exclusively to particular telecommunication providers. Likewise, regulators may want to look at investigate whether by removing exclusivity of service between m-money and a telco, or between telcos would actually help increase transfers within countries by allowing a larger network of mobile users to exchange with each other.

3. Access to scarce resources

Mobile networks in many low income countries are still enjoying explosive growth in subscribers and are focused on basic network rollout. However, requirements for m-money and m-banking, such as the type of handset it would need to become operational can still affect the speed of its adoption even if there are basic infrastructure already in place.

In particular, access to scarce resources would become an issue if m-money services require particular bandwidths to be functional. At present majority of m-wallets are SMS-based but the shift to 3G networks and beyond may be driven by bandwidth, higher download speed and upload speeds which could impact on access to resources. Risk considerations also have to be considered as m-payments progress from the simple SMS to more sophisticated processes (KPMG 2007).

If e-money/banking services, for instance, would require 3-G services, this could become a barrier from the perspective of universal access to this type of service. Goswami and Raghavendran (2009), for one, gave the example of banks going solo (without a direct telecom provider) using Internet enabled mobile phone browsers to access a bank's online portal. Banks use this model to offer balance inquiries, bill payments and interbank transfers. This can be seen more of an additive model of m-banking, as it serves primarily the existing banked customers.

As such, even though some forms of e-money services, might be menu-driven, generally they have been designed to be 'technology agnostic'. If the idea is to be 'transformative' and reach the unbanked, who are themselves more likely to be using more basic handsets, then, the way in which m-money services are delivered should be with this type of users in mind. WIZZIT, for example, was developed to operate even in older phones (Bangens & Soderberg 2008), and similarly, mobile business development consultants also take this design and market consideration in mind. In the case of the Philippines, it was based largely on SMS traffic, and a second SMS channel was easily added for the service and had enough capacity to handle the extra load (Wishart 2006).

4. Tariff regulation

Tariff regulation would be crucial if the adoption of the technology, especially among the unbanked is to be encouraged. One consideration is the cost effectiveness of these models for sending remittances. Tariff regulation would be crucial if the adoption of the technology, especially among the unbanked is to be encouraged. One consideration is the cost effectiveness of these models for sending remittances. The cost of m-money transactions should be low enough to compete with alternative services. As a substitute service, it competes with pre-existing parallel services, such as bank/wire transfers, credit card mechanisms, etc. In line with this, the

World Bank estimates that by reducing the cost of remittance charges by 2-5%, the flow of formal remittance could increase by 50-70% (GSM Association 2008).

The danger of a monopoly provider of a service is that its charges might be unreasonably set. This, however, assumes that there are no alternatives for sending payments or remittances, which is not the case relating to e-money. For instance, the cost of sending remittances from US to the Philippines for a US\$200 transaction as of the first quarter of 2009 was about US\$14, or 7% of the value sent (see Table 1). The total cost decreases as the value sent decreases, with the average cost of sending \$500 from the US costing about US\$19 on average, or 3.8% of the transaction amount. . The cheapest mode for sending US\$200 is via RCBC Remittance, which is about 4.73% of the cost, while for \$500, the cheapest is via PNB, which amounts to 2.4% of the cost. (World Bank 2009).⁴ The transaction time also varies from less than an hour for Money Transfer Organizations (MTO) like Moneygram and Western Union, to three-five days for others.

Table 1: Remittance Cost USA to Philippines

Type	Fee (USD)	Exchange rate margin ⁵ (%)	Total Cost %	Total Cost ⁶ (USD)
MTO Average	11.09	1.23	6.77	13.54
Bank Ave	9.67	1.43	6.27	12.54
Bank/MTO ave	14.75	1.07	8.44	16.88
Average (all)	11.45	1.23	6.95	13.90

Source: World Bank 2009

<http://remittanceprices.worldbank.org/RemittanceCosts/?from=197&to=153>

⁴ see World Bank figures

<http://remittanceprices.worldbank.org/RemittanceCosts/?from=197&to=153> .

⁵ the exchange rate cost is the cost resulting from the percentage difference between the current interbank exchange rate and the actual exchange rate applied to the remittance transfer.

⁶ The Total Cost includes the fee charged to the sender plus the exchange rate margin.

Costs, as in the case of GCASH and SMART Money, are also transaction related, with each customer initiated SMS, at least in the Philippine models, amounting to the standard SMS fee. For SMART the SMS charges may vary between Php 1.00 to Php2.50, depending on the service, with a transaction charge of 1% of the transaction value for remittances. For Globe the cost is Php1.00. But aside from this, they also charge a 1% transaction fee on the transaction value or a minimum of P10 per transaction (Wishart 2006). For peer-to-peer transfers and commercial payments, the cost is primarily equivalent to an SMS-charge.

5. Interconnection

The concept of interconnection from a telecommunications perspective “allows a carrier to use facilities and/or services provided by another carrier to permit its customers to: (a) Communicate with customers of the other carrier, terminate calls using the other carrier’s call completion services, originate, transport or terminate calls using leased portions of the other carrier’s network; (b) Access services that are available only from the other carrier, *e.g.*: numbering and directory service databases, emergency call handling (E911) services” (Clarke, 2000:3).

Hence, interconnection is essential to realizing efficiencies in telecommunications by allowing valuable network externalities to be captured, and allowing providers to avoid the deployment of duplicative or inefficiently-sized networks, and helps to promote the development of a more competitive telecommunications industry. Furthermore, interconnection can aid in rapid and ubiquitous market entry– even in rural areas where the market may not support multiple facilities-based carriers. Interconnection allows new carriers to enter the market on an efficient staged basis” (Clarke, 2000: 4)

If one then extends this concept to accessing m-Money service by making this available to all mobile users regardless of telecommunication provider, then one can see some clear interconnection issues, especially if the objective is to rapidly increase access to m-money and m-banking services especially to the unbanked. If there is one m-money service platform, for instance, an interconnected network would technically make this service available to all mobile users. On this the European Commission says that “Interconnection covers the physical and logical linking of networks, and is an essential element in any multi-network environment. It allows the users on one network to communicate with users on other networks, or to access services provided on other networks.” (European Commission, n.d.)

Further, in places where there are multiple m-money ‘currencies’, such as in the Philippines with SMART Money and G-Cash, the question goes beyond mere interconnection, but also interoperability. The EC makes the distinction by saying: “Interconnection of networks does not guarantee interoperability of services provided over those networks. Interoperability of services requires the use of common standards and protocols, or else the use of a conversion function that can map between different systems.” (European Commission, n.d.).

Allowing interoperability between companies, for instance, would essentially allow subscribers from a different provider to exchange mobile currencies (e.g. 1 Gcash peso for 1 SMART Money peso, much like passing e-loads from one network to the other).

The telco’s role in the m-payment system is essentially to deliver the m-money from the payer’s mobile phone to the payee; depending on the type of m-payment, the telco may also deliver the purchased service (in the case of mobile phone ringtones and wallpapers, and other applications). Interconnection happens when an entity separate from the telco sells the mobile applications, as the separate entity requires network connection to send the application to the payer.

Interconnection is also present in cash-in/out as partner banks or other agents are allowed access to a person's m-money account. For m-money transfers, interconnection among m-wallets helps facilitate the internetwork fund transfer. This is evident in international m-money transfers; Globe has partnerships with telcos such as Maxis mobile in Malaysia that allow m-money stored in the Maxis mobile account to be transferred to the GCash wallet of the recipient in the Philippines. In the midst of possible digital value smurfing⁷, along with the lack of sound regulations on ownership of prepaid SIM cards (which correspond to one m-money account), issues for telecom interconnection then overlap with security issues especially with internetwork cross-border money transfers.

Currently, this may not be an issue in the Philippines due to the limited amount and transactions for e-money (including m-money) but should be considered in the event that m-money transactions start to increase. In such case, regulations may go beyond the mere reporting of suspicious m-money movement.

There are a number of levels by which one has to look at the issue of interconnection. The first level has to do with how the telecommunication infrastructure interconnects with the banking infrastructure. From an m-banking perspective, this involves interoperability of different systems. It should be noted that the delivery of these services require compliance with bank standards. As the telecommunication infrastructure meets up with banking infrastructure, compliance with banking protocols become important. These protocols are set, not by telecommunication regulators, but by vendors providing the services to banks. In this way, industry standards are set by the market itself.

According to Porteous & Wishart:

⁷ A term coined by ADB, for more on digital value smurfing see <http://www.finextra.com/fullstory.asp?id=18213>

“...interoperability of different payment systems is primarily a question of market structure and regulation. It arises initially only in markets where there is an existing payment infrastructure with which new providers can inter-operate (and later on, once new infrastructure becomes the standard). Without inter-operability, the fixed costs of deploying financial infrastructure may be much harder to recover, since usage per item of proprietary infrastructure will fall. Clearly, one solution may be to give regulators the power to require interoperability; however, it may be sufficient to encourage the identification of appropriate standard upfront. This could take place via support to regulators or industry bodies, where these exist. (Porteous & Wishart 2006:6)

Another interoperability question pertains to the ability of different providers to exchange m-currencies, much like how they exchange text messages. In the Philippines, for instance, two m-currencies: GCash and SMART Money, are provided by different carriers, and are not, at present, exchangeable. There are however, intermediary providers coming up, which provide a service for its exchange, much like a money changer. In other countries, some systems are developed independent of the provider, and openly marketed for use among the different telecommunication providers. Viewed from the larger context of mobile money transfers in general, the GSM association further contends that while production innovation at this stage proliferate, “global interoperability can offer significant value to customers and ensure the GSM ecosystem delivers value and scale into this service” (GSM Association 2008: 10). Global inter-operability may mean m-wallets in one country can send e-money to another m-wallet in another country. This could be made easier in cases where telecommunications companies operate in multiple countries, and assumes that needed banking regulations are complied with in both the sending and recipient country.

6. Universal Access

The concept of what universal access means has been undergoing a review considering how ICTs today deliver other services beyond voice (Xavier, 1997, Alampay 2006) and some suggest that the concept include the content or types of services that telecom providers should be able to deliver to individual residents, such as education, health care and other information services (Hudson 1997), which in this case could be m-money as a universal service.

Basic to this is the physical access to the infrastructure, coupled with the service being carried by providers. In Kenya, for instance, a constraint to mobile banking is the limited number of enlisted mobile phone services that reach a limited number of subscribers as of the moment. The availability of additional services, dependent on telecom companies, also becomes constraints to accessibility. The absence of network coverage or the existence of weak network coverage translates to weak mobile banking implementation. With this condition, only 39% of the population has cellular phones, 75% of whom are from urban areas. This requires policies for directing telecom investment towards the rural areas, if mobile banking is to succeed (Njenga 2009). Also, the issue of making these services 'technology agnostic' becomes important. One has to design services that can be used by the most basic of technologies⁸ that also require the more basic infrastructure.

Furthermore, for e-money services to reach the unbanked, one has to consider the capabilities of the unbanked to make use of these services given the technology and infrastructure available to them.

Likewise, it requires access to other social infrastructure forms whereby money can be exchanged for m-money and back. Hence, even though access to

⁸ This assumes that these are the type of mobile phones used at the bottom of the pyramid, including those found in rural communities.

mobile services may be spread wider than those with access to banks, there are other limitations that may hinder some from using the service.

For instance, one of the reasons cited that has encouraged greater access to cell phones is prepaid card options. This simplified the process of getting a telephone line. In the Philippines, there is no registration required for getting a prepaid account. However, banking regulations would require identification of individuals (which in some poorer regions might be problematic, especially in terms of providing the needed identification). In large part, this requirement is actually a banking regulation to control money laundering. Hence, even as it has been easy to get a phone, registering for other services may actually discourage access to the actual services itself.

The other question is whether such a service can be opened to subscribers of other telecommunication providers to encourage greater access to banking services. In compliance with KYC regulations, GCash and SMART Money systems in the Philippines are closed systems, only their respective subscribers can avail the service (Forbes, 2006). However, as m-money platforms are being developed, interoperability must be taken into consideration, such that internetwork m-money transfers are made possible. Issues arise for cases where there are exclusive partnerships between bank or non-bank financial entity and a telecom operator.

7. Quality of service

The issue of quality of service is where there is greatest overlap between banking and telecommunication policy concerns. This has to do with the question: where should I go if something goes wrong with the transaction? For instance, if a customer has sent a large sum of money, can they get it back if it is lost in transit? What if the other person says that he did not get it? What if a service can not get to a certain place to which money has to be sent?

As far as redress is concerned, an important consideration are the mechanisms for addressing complaints. Issues here include authentication of users, verification and tracking of transactions.

Authentication and enrollment

In some countries like the Philippines, the identification of individual users has been difficult to implement given its society's concerns about privacy. Similarly in Kenya, Njenga (2009) notes that quality service should consider that first time customers are mostly poor with low educational attainment, hence guidelines on proper documentation, privacy protection, and redress mechanisms must also consider that kind of situation.

Answers to these issues may vary depending on the m-banking model being applied. For instance, Wishart explains how in the non-bank model by Globe, fraud management and money-laundering prevention as well as individual user activity remains the responsibility of the telecommunications company (see Wishart 2006:19), whereas the same might be the responsibility of banks in bank-led models, with individual user activities possibly tracked by its telco partners.

Verification and Tracking

Given the various calculations/cost combinations that may be involved in the tariffs of sending m-money, one concern, from the customer side, may be the transparency of these fees, especially when there are no intermediary people with which to clarify and verify the fees that are charged. This would be especially true for the unbanked, who are most likely users of prepaid accounts, and have to be more conscious of their balances.

Tracking these transactions and keeping its records would be crucial, especially from the customer's security and redress concerns. Generally, most queries a telecommunication provider receives pertain to billing issues. For m-

money and m-banking transactions, this may involve not only records of how much was deducted for transmitting the transaction. However, conversion rates used if it involves cross-country transactions would most likely remain a concern of the banking regulator. Companies may want to track billing queries for this particular services as a Quality of Service standard, in order to determine whether subscribers are becoming more aware of all the costs related to the service, whether it is transmission costs or conversion costs.

Tracking transactions are also important from the perspective of controlling money laundering. In the Philippines, both GCash and SMART Money models are compliant to the Anti-Money Laundering requirements of the country, such as requiring IDs for cashing-in and cashing-out to validate the identity of the subscriber. This allows them to track the amounts kept in the mobile wallets, regardless if they keep multiple accounts in different SIMs. One regulatory gap, however, allowing SMS-registration. SMS-based registration does not require verification of the identity of the mobile account's owner until a cash-in/out transaction is made using the account. While this can encourage easier enrollment and faster adoption, it can allow dummy accounts to be created that facilitate movement of m-money that may go around other AML provisions. It would then be possible for a person who owns multiple prepaid SIM cards each with an m-money account, to accept m-money which may then bypass AML law's limit on amount stored in mobile accounts/m-wallets, for as long as he/she does not cash in/out using those accounts.

One indirect way of addressing this problem has been to require companies to use "pattern recognition systems that are a necessary and complementary part of both anti-fraud and AML to monitor account/subscriber activity" and are required to report any suspicious activity. They are also subject to AML compliance examinations by regulators (Forbes, 2006). In terms of security of transactions, some companies have moved to a bank-centric model, with encrypted security systems and needed interfaces with bank's own IT systems (KPMG, 2007)

Lately, the issue of disappearing cellular phone credits also caught the attention of policymakers in the Philippines, asking for a review of the telecom policies to protect consumers. This issue may have an adverse effect on the perception of people on mobile banking and the telecom companies providing it. National Telecommunications Commission Commissioner Ruel Canobas said that an existing NTC Memorandum Circular No. 13-06-2000 was actively countered by telecom companies including Globe and Smart through a court injunction (Villafania 2009):

“The government rules cover sanctions against erring telecommunications companies, as well as rules that would require people to show identification whenever they’re buying prepaid SIM cards, mandatory billing statements for consumers, prepaid usage and interconnection.”
(Villafania 2009)

Redress mechanisms would also eventually touch on verification of mobile phone numbers, both from the sender and receiver side, as well as transactions made. Also crucial to this would also be securing the pipes in which the financial or transactional information is sent, as well as the records that need to be maintained. All this is crucial in order to gain the trust and confidence customer to initially try out the system and eventually become a regular user of mobile money.

Conclusions

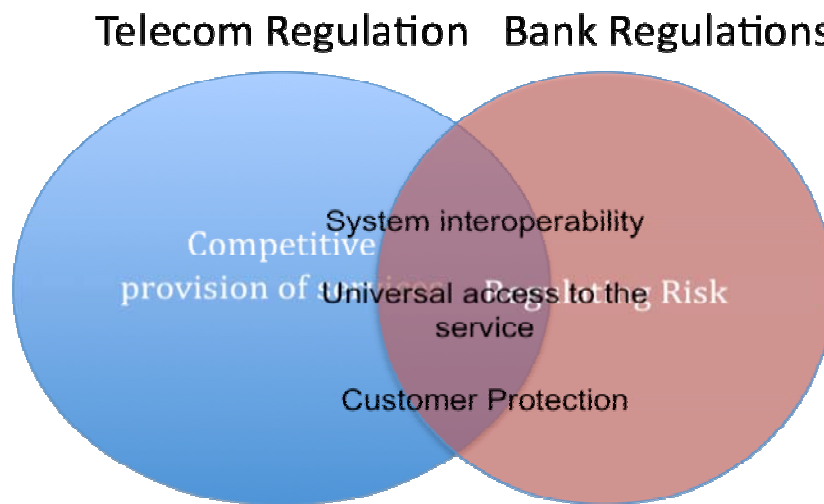
When looking at the overlapping issues that concern both telecommunication regulation and banking regulation, much boils down to: system interoperability, universal access to the service and customer protection (See Figure 2). These are important in order to maintain the stability of the system, expand the service to

more people, reach a larger segment that remain unbanked, and protect consumers by being able to resolve problems quickly and thereby gain their confidence.

The development of m-payments using m-money will be shaped by two contrasting issues: interoperability of competing technologies and the reliability and security of transactions.

From a telecommunications perspective, there's the initial assumption that all telcos are also interconnected, whereby services such as m-money can be made available with any provider. This is important, if there is only one m-currency in circulation. Interoperability, would also be important, if there is more than one system available in a country (e.g. the Philippines), because without interoperability, the market will remain fragmented and network economies of scale will be impossible to achieve (KPMG 2007:40).

Fig. 2: Intersection between telecommunication & banking regulatory issues



Interoperability would entail having compatible systems between the mode of transmitting information from mobiles to banks, and compatible systems across countries if it is to expand on a global scale. Given the newness of the service, different models and forms of mobile money transfers are currently being

implemented. Interoperability, both at the local and global scale would offer significant value to customers, especially for developing countries with large populations working overseas (GSM Association 2008). Standard may have to be agreed upon to allow for exchanges between networks, within and across countries. It would also entail keeping compatible transactional records of customers using both the bank and the mobile service. Anti Money Laundering and Know-Your-Customer regulations have to be re-evaluated especially in the midst of more open system models of m-payments (Forbes, 2006).

Universal access to the service, on the other hand, would have to deal with new requirements for enrolling in the service. The essential information requirements would primarily deal with the identity of individuals making the transactions (Know your customer). This, however, has to be balanced with realities on the ground, especially in developing countries, where proper documentation of identities may be problematic.

As far as customer protection is concerned, this would involve looking at the various processes and protocols that allow the exchange of this information through the various layers of telecommunications and banking infrastructure and the assurance that these transactions are made secure and documented in case of redress. Without the assurance of reliable and adequate security, users will not turn to m-payments on a larger scale (KPMG 2007:40). Other payment systems in the past had encountered issues of security and interoperability and were then outsourced instead to third party providers (e.g. Paypal).

In models where there are telecom and banks working together, the regulatory overlaps are easier to address, as often the financial partner covers the banking regulations, and the telecommunication company simply addresses the telco regulations. It is in cases when the bank deals with multiple telcos, or the telco independently offers financial services where compliance to regulations becomes more challenging.

References

- Alampay, E. A. (2006) 'Beyond access to ICTs: Measuring capabilities in the information society' *International Journal of Education and Development using ICT*, Vol. 2, No. 3, pp. 4-22.
<<http://ijedict.dec.uwi.edu/viewarticle.php?id=196>>
- Alampay, E. and G. Bala (2009) Mobile 2.0: Mobile Money for the BOP in the Philippines. Paper presented at the International conference on Mobile Communication and Social Policy on 10 October 2009, Rutgers University, New Brunswick, New Jersey, USA.
- Ahmad, A. (2006) Policies and Regulations for Expanding e-Banking to the Poor, May 2006.
- Bångens, Dr. L. and B. Söderberg (2008) "Mobile Banking –Financial Services for the Unbanked?" The Swedish Program for ICT in Developing Regions, SPIDER
- Bångens, Dr. L. and B. Söderberg (2008) "Mobile Banking –Financial Services for the Unbanked?" The Swedish Program for ICT in Developing Regions, SPIDER
- Bangko Sentral ng Pilipinas [BSP](2009) Circular 649 Series of 2009. 4 April 2009
- Boyd, C. and K. Jacob (2007) Mobile Financial Services and the Underbanked: Opportunities and Challenges for Mbanking and Mpayouts. The Center for Financial Services Innovation, an Affiliate of Shorebank Corporation
- CKS Consulting Pvt. Ltd. [CKS] (2009). Teleuse@BOP3: A Qualitative Study. Colombo: LIRNEasia
- Clarke, R. (2000) Determining the Costs of Interconnection. ITU Seminar on Telecom Tariffs for the CIS Communities [Presentation] May 22-24 May 2000
- Consultative Group to Assist the Poor [CGAP] (2009) Banking agents – the key to successful mobile banking services: M-Pesa and GCash Profiles (Part II) 18 February 2009
<<http://www.cgap.org/p/site/c/template.rc/1.26.5205/>>
- European Commission--Information Society (n.d.) Interconnection and Interoperability
<http://ec.europa.eu/information_society/policy/ecomms/todays_framework/interconnection_interoperability/index_en.htm>
- Firpo, J. E-Money – Mobile Money – Mobile Banking – What's the Difference? Private Sector Development Blog. 21 January 2009
<<http://psdblog.worldbank.org/psdblog/2009/01/emoney-mobile-money-mobile-banking-whats-the-difference.html>>
- Forbes, J. (2006) Remittance-Based Money Laundering: Paradigm Shift? Asian Development Bank Public Lectures on Criminal Policy Public Lectures on Criminal Policy 27 January 2006 [Powerpoint Slides]
- Goswami D. and R. Raghavendran (2009) "Mobile-banking: can elephants and hippos tango?" Deloitte Development LLC Accessed 25 June 2009
<http://www.deloitte.com/dtt/cda/doc/content/us_tmt_Mobile%20banking-%20can%20elephants%20and%20hippos%20tango_011609.pdf>
- GSM Association [GSMA] (2008a) "Introduction to Mobile Money Transfer" Accessed 12 June 2009
<http://www.gsmworld.com/documents/GSMA_Introduction_to_MMT_0908.pdf>
- _____ (2008b) Enabling regulatory environment for mobile money transfer services [Public White Paper] March 2008
- _____ (2009) *Mobile Money for the Unbanked Annual Report 2009*
<http://www.gsmworld.com/documents/mmu_2009_annual_report.pdf>
- Hudson, H. (1997). 'Converging Technologies and Changing Realities: Toward Universal Access to Telecom in the Developing World' in *Telecom Reform: Principles, Policies and Regulatory*

- Practices*, William Melody (ed.). Technological University of Denmark . Chapter 26 pp 387-397. (available online at < <http://www.lirne.net/resources/tr/chapter26.pdf>> (Downloaded March 19, 2004))
- Ivatury, G. and Mas. I (2008) The Early Experience with Branchless Banking, CGAP Focus Note 46.
- KPMG (2007) Mobile Payments in Asia Pacific Information, Communication and Entertainment
<www.kpmginsiders.com/pdf/Mobile_payments.pdf>
- Lyman T. (2006) Use of Agents in Branchless Banking for the Poor: Rewards, Risks and Regulation, CGAP Focus Note 38 (October 2006).
- Lyman, T., M. Pickens and D. Porteous (2008) Regulating Transformational Branchless Banking: Mobile Phones and Other Technology to Increase Access to Finance. Consultative Group to Assist the Poor (CGAP) Focus Note 43.
- Njenga, A. (2009) "Mobile phone banking: Usage experiences in Kenya" Accessed 27 June 2009
<http://www.w3.org/2008/10/MW4D_WS/papers/njenga.pdf>
- Porteous, D. with N. Wishart (2006) "M-Banking: A Knowledge Map" Washington, DC: infoDev / World Bank. Accessed 12 June 2009 <<http://www.infodev.org/en/Publication.169.html>>
- Porteous, D. (2006) The enabling environment for mobile banking in Africa. Report commissioned for the Department for International Development (DFID).
- Robleza E. et al. (2007) "Opportunities in Mobile Banking" (December 28-29, 2007) Accessed 25 June 2009 <<http://www.itmatters.com.ph/openhouse.php?id=122807>>
- Tarazi, M. (2009) [E-money accounts should pay interest. So why don't they?](http://technology.cgap.org/2009/03/17/e-money-accounts-should-pay-interest-so-why-dont-they/) 17 March 2009
<<http://technology.cgap.org/2009/03/17/e-money-accounts-should-pay-interest-so-why-dont-they/>>
- Villafania A. (2009) "AMID CASE OF MISSING 'LOAD' NTC: Telcos fought rules to protect consumers" Philippine Daily Inquirer (16 June 2009) Accessed 23 June 2009
<<http://technology.inquirer.net/infotech/infotech/view/20090616-210837/NTC-Telcos-fought-rules-to-protect-consumers>>
- World Bank (2009) Remittance Prices Worldwide: making markets more transparent. [Tables]
<<http://remittanceprices.worldbank.org/RemittanceCosts/?from=197&to=153>> (last accessed 30 July 2009)
- Wishart, N. (2006) Micro-payment systems and their application to mobile networks: Examples of Mobile enabled services in the Philippines." Infodev.
- Xavier, P. (1997) 'Universal service and public access in the networked society', *Telecommunications Policy* 21 (9/10), pp. 829-843.
- Zainudeen, A. (2008) What do users at the Bottom of the Pyramid Want? In Samarajiva, R. & A. Zainudeen (Eds) ICT Infrastructure in Emerging Asia: Policy and Regulatory Roadblocks, IDRC & Sage, pp39-59.