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An analysis of models of branchless banking in developing countries.

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1. Abstract

Branchless banking is the distribution of financial services to people who are not reached by traditional bank branch networks. It lowers the cost of delivery to banks, including costs of building and maintaining a delivery channel and to customers of accessing services¹. Three distinct models have been identified; Non-bank/ Telecommunications company (Telco)-led, Bank-led, and an Independent “hybrid” version i.e. Bank focused model. The oldest model is the bank-led that was introduced as an extension or add-on to existing services; not for reaching new customer segments. The “hybrid” model comprises a transformed way of offering branchless banking across mobile networks in cooperation with telcos and banks, but spearheaded by a non-incumbent firm.

This paper pays special attention to banking the unbanked population in the developing markets through branchless banking. This form of banking is defined as the delivery of financial services outside conventional bank branches using information and communications technologies and nonbank retail agents. The services offered take a variety of forms including long-distance remittances, micropayments, and informal airtime bartering schemes for example; mobile banking, mobile transfers, and mobile payments.² Using Kenya’s M-PESA as the lead case study, the impact of combining the use of mobile network operators and banks has proved to be effective. M-PESA is an initiative that allows users to hold money in a virtual ‘stored value’ account maintained in a server by the telecoms provider and operated by users through their mobile phone. Users can deposit or withdraw cash with a local M-PESA agent. More broadly, M-PESA affords the scale and efficiencies of corporate capitalism, and the flexibility and contextual appropriateness of informal markets.

This research seeks to shift the debate towards ways in which governmental incentives can tie together the market and technological forces to expand access to financial services for the poor i.e. the full adoption of branchless banking. The paper excludes mobile financial services that are mainly conceived by banks as channel extensions, giving their existing banked customers, a new way to interact with the bank, complementing existing channels such as branches and internet banking.

¹ Radix Consulting Services, June 2009, Mobile Banking: Is it Bank versus Non-Bank?

² Anyasi and Otubu, 2009, Mobile Phone Technology in Banking System: Its Economic Effect

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This paper is dedicated to the many financially excluded rural and poor people around the world. Although I have been blessed with a better life, I share many similarities with you all. The challenges you face just to survive one day at a time inspire me to keep on learning and seeking solutions to eradicate poverty and seek ways to “pay forward” to ensure a better tomorrow for the next generation.

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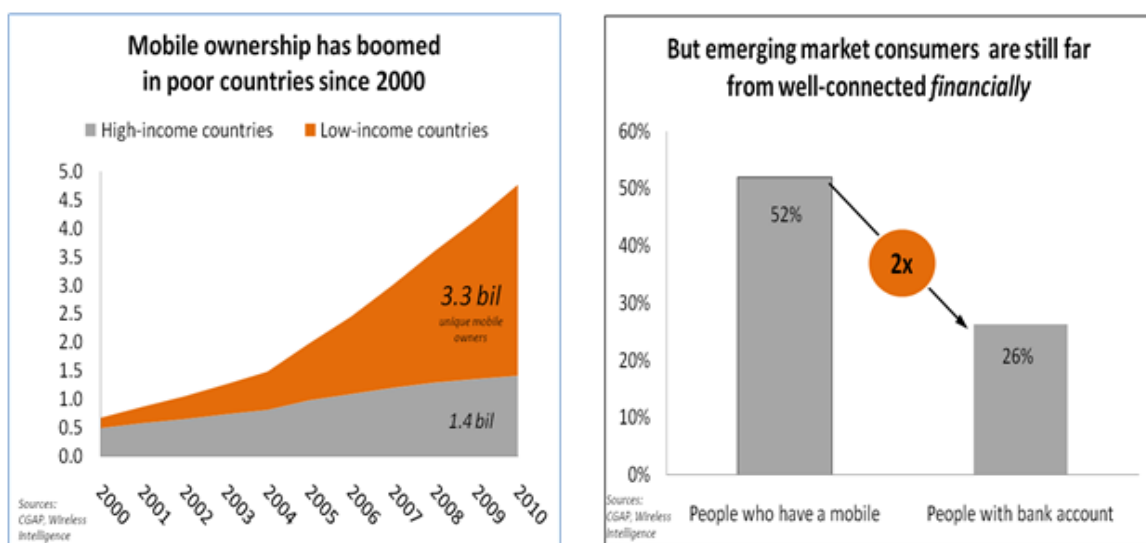
4. Introduction

4.1. Background of the study

One of the major trends in the remittances market in recent years has been the rapid growth in mobile remittance services. Traditionally, the remittance transfer market has been dominated by funds transfer providers, such as Western Union or Money Gram, or by informal mechanisms, such as hand-delivery. While the more mature remittance avenues, or those with established banking and funds transfer markets, such as USA-Mexico or USA-Philippines tend to be dominated by Money Gram; the less mature markets with more limited banking markets, such as Pakistan-India, tend to be dominated by informal person to person (P2P) transfers. Nevertheless, both methods are imperfect for the user, thus, while funds transfer services proved to be expensive, informal channels are both expensive and risky with some portion of the remittance getting reduced in the process. A further pitfall for the informal methods is that they also lack a paper trail, which is a major concern for governments which are trying to limit the opportunities for money laundering.

“Mobile phones ownership has grown explosively in poor countries over the past decade. In 2005 the mobile phone became the 1st communications device in history to have more users in poor countries than rich. In 2010, mobile phone owners in poor countries accounted for two-thirds of the world's 4.77 billion phones.

Figure 1: Mobile phones ownership comparison



Source: CGAP, Branchless Banking database, 2011.

But while people in poor countries became increasingly well-connected via mobile telecommunication, they remained much less well-connected financially. An emerging market consumer is less likely to have a bank account in their name than own a mobile phone. Access to financial services enables consumers to smooth unpredictable income, acquire productive assets, invest in health and education, and make other purchases that enrich their lives. This rapid pace of mobile connectivity can be leveraged to also fuel financial inclusion.”³

The rapid acceptance of mobile phones across the world suggests that they will become the operational platform of the masses. Although communication is the key application that is responsible for this dynamic growth, telecom companies and other players recognize the opportunity to leverage this infrastructure to deliver other services. Despite the commercial possibility that is evident in the use of a mobile phone to conduct payment and banking transactions known as m-banking, this service is still at an early stage in quite a number of developing countries.

4.2. Research objectives and motivation

Despite the adoption of technology that facilitates branchless banking in developing countries and the growing impact of this service to the general welfare of society and to the general economic growth, there is a limited amount of research that is directed at banking the unbanked members of society, especially with regards to emerging economies. Evidence provided in the forthcoming sections of this paper show that there is a considerable number of emerging economies (for example South Africa, Kenya, Brazil, Indonesia amongst others) that are using, in addition to traditional banks, the microfinance institutions, mobile phones operators and technology companies to send or receive funds from family, friends or employers.

Furthermore, quite a number of fascinating developments that come with the idea behind branchless banking make this subject appealing to this research. Amongst these developments are that; first, this form of banking does not require the receiver of funds to possess a bank account or to go to the bank but instead to be in possession of a telecommunications device (in this instance a mobile phone). Second, it also does not matter whether the receiver is in

³ CGAP Operational Guide. Washington, DC, 2011.

the city or in the remote rural areas. Third, it does not matter whether the receiver has or does not have a bank account or access to banks but that the individual has a device that allows receiving of funds and that the individual has access to the network.

The paper explores how these developments have made a difference to the lives of many and highlights the benefits and challenges of branchless banking given different environments in terms of regulation, market developments and the costs associated with such a service. The crucial issue is on how to drive more uptake and penetrating usage among low-income populations where some forms of branchless banking initiatives (BBIs) already exist. Thus, the research seeks to answer four main research questions:

- Which models of branchless banking exist in the countries studied?
- How can government help boost customer base?
- Is branchless banking cheaper than traditional banking for the kinds of transactions low-income and unbanked people want to do?
- Are there any concerns which are generally raised by telecommunications and financial regulators?

The outlook regarding this study is that it will contribute hugely to various associates of the world population in terms of invaluable information it will provide. All stakeholders can rely on the key findings to educate themselves on the many facets and platforms that branchless banking can afford them. Furthermore, mobile network operators (MNOs) can use the findings of this study to expand their services in a way geared to economic empowerment to all the stakeholders involved. On the other hand, banks can unlock profits from the existing unbanked population. By combining these services i.e. financial services and MNOs, the objectives of trying to bring financial services to the unbanked poor population and to increase the number of mobile subscribers are more than likely to be realized. Thus with a formal channel available, financial institutions would be able to advance funds to small traders for business development while at the same time having a channel that assists debt repayment conveniently and without delay.

4.3. Research methodology

I implemented the archival research method of research. This method involves a review of literature on branchless banking at a general level such as conceptual papers and experiences from other countries mainly in developing countries. The identification and separation of general versus specific issues led to various priorities for the target countries. The literature review then focused on the successful efforts that led to the launch of branchless banking in developing countries, with Kenya as a lead case study. Additional focus is in BRICS economies namely Brazil, Russia, India, China and South Africa. I have also included Mexico, Colombia, Cambodia and the Philippines because of their relative position in promoting and implementing branchless banking ventures. They also represent the majority of agent-assisted branchless banking users in developing economies. The table below summarizes statistical facts about the countries included in this study.

Table 1: Statistical facts about countries included in the study

COUNTRY	YEAR	MOBILE		BANKING SERVICES					POPULATION AND INCOME				
		Mobile subscriptions (discounted for multiple sim)	Mobile penetration	Deposit accounts per 100 adults	Loan accounts per 100 adults	Branches per 100,000 adults	POS terminals per 100,000 adults	ATMs per 100,000 adults	Population	% living in rural areas	Rural population	Urban population	Income (GNI per capita, US\$)
Kenya	2011	19 100 000	48%	38.96	8.14	4.41	8.28	6.67	39 802 015	78%	31 085 374	8 716 641	770
Brazil	2012	245 200 000	127%	107.08	55.43	17.29	112.06	2 247.41	193 733 795	14%	27 045 238	166 688 557	8 040
Russia	2011	224 260 000	157%	n/a	n/a	2.62	76.51	293.05	142 905 200	27%	38 841 633	104 063 567	9 370
India	2011	893 843 534	74%	81.62	14.76	12.89	7.29	67.06	1 210 193 422	70%	849 313 744	360 879 678	1 180
China	2012	987 580 000	74%	n/a	n/a	n/a	n/a	n/a	1 341 000 000	50%	656 560 000	684 440 000	3 590
South Africa	2011	51 600 000	105%	83.91	29.63	8.00	52.41	54.85	49 320 150	39%	19 126 354	30 193 796	5 770
Cambodia	2009	4 210 899	28%	10.65	11.71	3.92	4.19	34.13	14 805 358	78%	11 521 530	3 283 828	650
Colombia	2011	46 137 937	101%	129.48	49.93	15.09	29.56	441.06	45 659 709	25%	11 506 247	34 153 462	4 930
Indonesia	2009	250 100 000	105%	50.72	21.39	8.32	14.44	117.89	237 964 723	47%	112 842 872	125 121 851	2 230
Mexico	2010	88 797 186	83%	119.74	0.84	18.05	44.80	592.14	107 431 225	23%	24 172 026	83 259 199	8 920
Philippines	2011	86 000 000	91%	56.93	n/a	13.20	14.25	13.33	94 013 000	34%	32 284 064	61 728 936	1 790

Source: Wireless Intelligence and CGAP analysis for mobile penetration; CGAP "Financial Access 2010" for banking penetration; World Bank World Development Indicators for population and income.

Kenya was particularly chosen because it has an existing successful mobile payment service offered by Safaricom called M-PESA while South Africa is included in the study because of its role as the major receiver of migrant workers, and therefore its role at the sending end of the remittance corridor. South Africa is also the centre of innovation in Africa: the field of remote access banking and origination of bank accounts by agents operating on behalf of banks is a well-established practice. This research starts by exploring the market for financial services or inclusion, through building on John Caskey's foundational study of the alternative

financial services industry⁴ and the work of a few other organisations that in recent years have begun to explore the financial services usage of the unbanked population.

5. A review of branchless banking in selected developing countries

5.1. Defining Branchless Banking

Branchless banking, also known as mobile money or m-banking, refers to a bank that does not rely on bricks-and-mortar, or branches. Rather, it makes use of mobile communications technology, and the infrastructure that goes with it, to serve as its “branches.” For customers, mobile money services increases convenience, affordability and security. These services can include:⁵

- Account opening
- Person-to-person transfer of funds, such as domestic and international remittances,
- Person-to-business payments for the purchase of a range of goods and services,
- Mobile banking, through which customers can access their bank accounts, pay bills, or deposit and withdraw funds.
- Loan disbursements

In developed or advanced markets, branchless banking is primarily an additional channel to existing conventional banking services. In emerging markets, however, it’s a new channel for people to access finance and transform their everyday expectations and opportunities. Similarly, in countries with wide income divides, banking services are primarily for the middle and upper classes. This situation is clearly less than ideal as access to reasonably-priced banking services is one of the first steps toward breaking out of the poverty trap for low-income individuals. But while the benefits of increased access to finance are clear, existing banking business models are yet to fully address the needs of the poor in terms of the products and services on offer, their cost, and the geographical reach of the bank branch infrastructure. This problem has been aggravated by tough anti-money laundering regulations

⁴ Caskey, 1994, *Fringe Banking: Check-Cashing Outlets, Pawnshops, and the poor*.

⁵ Jenkins, 2008. “Developing Mobile Money Ecosystems.” Washington, DC: IFC and the Harvard Kennedy School.

requiring proof-of-identity documents that are often prohibitively expensive for low-income customers.⁶

5.2. The origination of branchless banking

Over the last few years, the mobile and wireless market has been one of the fastest growing markets in the world and it is still growing at a rapid pace⁷. Mobile phones have become an essential communication tool for almost every individual creating a new, convenient communication and fast financial transactional channel for mobile users which is accessible from anywhere, anytime. As an emerging industry with about 15 years' history, the mobile phone industry's business model is based on serving all income groups - from teenagers and students to business customers and high-income consumers. This experience of earning money from the least wealthy members of society, combined with the rapid maturity of the sector, has propelled the telecoms sector into the mobile payments business with real enthusiasm. This was motivated by the existing fact that the banking industry is unable or unwilling to serve the unbanked population in poor countries where infrastructure has become a big challenge.

Most payment systems in the developing world enable users to do three things: (a) Store value (currency) in an account accessible via the handset. In the case where the user already has a bank account, this is generally a question of linking the account accessible through a handset to a bank account. If the user does not have an account, then the process creates a bank account for the user or a pseudo bank account that will be held by a third party or the user's mobile operator. (b) Convert cash in and out of the stored value account. If the account is linked to a bank account, then users can visit banks to cash-in and cash-out. In the most flexible services, a user can visit a corner kiosk or grocery store, perhaps the same one where he or she purchases airtime and transact with an independent retailer working as an agent for the transaction system. (c) Transfer stored value between accounts.⁸

⁶ Alazard and Gabaix, 2009, The Internet Seeds Report

⁷ Mobile Money for the Unbanked Annual Report 2009

⁸ Donner and Camilo (2008). "Mobile banking and economic development: Linking adoption, impact, and use", Asian Journal of Communication, 18(4), 318-322

Sustained by prepaid cards and inexpensive handsets, hundreds of millions of first-time telephone owners have made voice calls and text messages part of their daily lives. However, many of these same new mobile users live in informal and/or cash economies, without access to financial services that others take for granted. A study by Porteous (2006)⁹ found that across the developing world, there are probably more people with mobile handsets than with bank accounts. The rapid spread of mobile phones could mean that the number of mobile users may already exceed the number of banked people in many low income countries. These mobile phones can therefore offer a communications channel for initiating and executing on-line financial transactions. This channel may not only reduce the cost of financial transactions for the provider and the customer, but also allow new entrants to the financial sector, and new relationships to be formed for distributing services.

This business model has so far been proven through the launch of M-PESA in Kenya. Although the companies which are currently involved in m-banking are still to make a profit, there is a growing interest in the industry.

The key market factors making branchless banking attractive are:¹⁰

- wide availability of mobile telecommunications to the target market
- “SMS economy”
- large segment of population with little/no access to financial services
- need for safe, low-cost money transfers
- relative ease with which mobile users could avail themselves of the m-banking services
- ability to top up mobile accounts –paved way for acceptance of other features
- low transaction charges (~ US2¢ to US6¢, see section on costing)
- extensive features offered to enable users to pass financial credits between parties
- ability to withdraw cash (note: cash withdrawal fee applies)
- ability to make cashless purchases at participating retail establishments
- receptiveness of regulators (telecom and central bank)

⁹ Porteous, 2006, The Enabling Environment for Mobile Banking in Africa (DFID / Bankable Frontier).

¹⁰ Trucano, 2006, m-banking, m-remittances Case studies from the Philippines

5.3. Advantages/Benefits of branchless banking to stakeholders

In his 2006 study of the Philippines remittance market, Trucano outlined the below advantages:

- For users: there is an opportunity to become engaged in the formal banking sector, to facilitate and reduce the costs of remittances, and to enable financial transactions without the costs and risks associated with the use of cash (including theft and travel to pay in person).
- For consumers: m-banking is more secure and flexible than cash, allowing consumers to make payments remotely. It further reduces travel time and costs (to travel to bank branch). In Kenya, for example, people may travel 2-3 days by rough road or boat to withdraw salaries. This form of banking may also reduce transaction costs for remittances (1% cash-out for G-cash in the Philippines, compared to higher rates from Western Union) and also reduce opportunities for fraud, counterfeit and theft by providing a secure electronic mode for transferring funds (as opposed to, for example, travelling long distances to transfer cash).
- For banks: it provides a platform to move the “unbanked” community toward the “banked” status. It also allows the financial sector to make use of the cash float that would otherwise be invisible to the official systems. The added advantage would also be in the form of reduced errors and increased transparency in the transfer and recording of loan disbursements and payments and savings deposits. Furthermore it provides an easier record keeping on each client through computerization of transactions through mobile phones, thus making it easier for financial institutions to tailor products and services for segments within their large pool of customers. Lastly, branchless banking through retail agents reduces the cost of delivering financial services (potentially radically), relieves crowding in bank branches, and establishes a presence in new areas.
- For telecom operators: a significant increase in text messaging revenues and a large drop in customer churn.
- For retailers and telecoms service providers: added business opportunities through the sale of prepaid account credits.
- For micro-finance institutions: the ability to advance funds into remote areas and receipt of regular repayments that do not significantly inconvenience the user.

- For service industries and utilities: the ability to get payments electronically from a significant portion of the overall population.

5.4. Models of Branchless Banking¹¹

According to Consultative Group to Assist the Poor (CGAP), there are already several successful branchless banking models. However, these models differ primarily depending on who would be establishing the relationship (account opening, deposit taking, lending etc.) with the end customer, that is, whether it is the Bank or the Non-Bank/Telecommunication Company (Telco). Another difference lies in the nature of agency agreement between bank and the Non-Bank. Despite these differences, the models can be classified into three broad categories namely; the Bank Focused, Bank-Led and Nonbank-Led models.

The bank-focused model emerges when a traditional bank uses non-traditional low-cost delivery channels to provide banking services to its existing customers. Examples range from use of automatic teller machines (ATMs) to internet banking or mobile phone banking to providing certain limited banking services to the banks' customers. This model is additive in nature and may be seen as a modest extension of conventional branch-based banking.

The bank-led model offers a distinct alternative to conventional branch-based banking such that a customer can conduct financial transactions using a wide range of retail agents (or through mobile phone) instead of bank branches or through bank employees. This model promises the potential to substantially increase the financial services outreach by using a different delivery channel (retailers/ mobile phones), a different trading partner (telco / chain store) who has the experience and through serving a target market that is distinct from traditional banks and at the same time providing a service that is significantly cheaper than the bank-based alternatives. This model may be implemented by either using correspondent arrangements or by creating a joint venture between Bank and Telco/non-bank. In this model, the customer account relationship rests with the bank.

The non-bank led (telco) model, which is the main focus in this paper, is where a bank does not come into the picture (except possibly as a safe-keeper of surplus funds) and the non-

¹¹ Wambari, 2009, Mobile Banking in Developing Countries (a case study on Kenya)

bank (e.g. telecom) performs all the functions. In the typical nonbank-led model of branchless banking, customers do not deal with a bank, nor do they maintain a bank account. A bank may not be involved at all. Instead, customers deal with a nonbank firm—either a mobile network operator or prepaid card issuer—and retail agents who serve as the point of customer contact. Rather than deposit money into and withdraw money from a bank account, customers exchange their cash for e-money stored in a virtual e-money account on the nonbank's server, which is not linked to a bank account in the individual's name.

E-money, according to the Basel Committee's definition, is "a stored value or prepaid product in which a record of the funds or value available to the consumer for multipurpose use is stored on an electronic device in the consumer's possession." In other words, customers exchange cash for value stored in a card- or mobile phone-based virtual account. Customers can send this e-money to others, use it to make purchases, or use the e-money account to store funds for future use. They can also convert it back to cash at any participating retail agent.

The nonbank performs a role similar to that of a bank in the bank-led model. It designs financial and payment products, contracts retail agents directly or through intermediaries, and maintain customer e-money accounts. Unlike customers that use payment cards, mobile phone banking customers can conduct transactions wherever they have cell coverage; they need to visit a retail agent only for transactions that involve depositing or withdrawing cash. Retail agents in the nonbank-led model also perform the same basic functions as in the bank-led model. They take in and disburse cash (i.e. they "load" and "unload" e-money, also referred to as "issuing/selling" and "buying" e-money) using mobile phones or point of sale (POS) card readers to record transactions. When a customer hands over cash to increase his/her e-money balance, the retail agent keeps the cash in exchange for some of his/her own e-money. Unlike in the bank-led model, the settlement takes place with e-money, not funds in what would be a bank account. This, however, poses a certain risk for both customer and retail agent. Commercial banks are typically used in the nonbank-led model, but generally only as a place for the nonbank to hold the net proceeds of issuing e-money (and as a convenient means to earn a return for the nonbank on these funds while keeping them highly liquid).¹²

¹² Panda, 2007, *Pocket Banks : Mobile Phone and Inclusive Banking*

The table below gives a brief summary of the existing branchless banking services in the countries studied. The findings are further discussed in the next section of the paper.

Table 2: Summary of branchless banking services in countries studied

Country	Agents	Branchless Banking Initiative	Market Share
Kenya			
	Safaricom	M-PESA: Money Transfers M-Kesho: Savings Accounts	79%
	Vodacom	Mobile Payments	45%
Brazil			
	Vivo	Oi Paggo: Credit Services	95% of the market divided equally.
	Claro		
	Oi		
	TIM		
Russia			
	Beeline	Mobile Payments	n/a
India			
	FINO	Mobile Payments	
	EKO		
China			
	China Post Office	Alipay: Cash Top Up Account Smart Pay	n/a
	E-payment Player	Mobile/Telephone Prepaid Cards	n/a
South Africa			
	South African Bank of Athens	WIZZIT: Money Transfers Prepaid Services	n/a
	MTN Banking	Money Transfers Prepaid Services	n/a
	Nedbank/Vodacom	M-PESA: Money transfers	n/a
Indonesia			
	Telkomsel	T-Cash: Mobile Wallet Retail Payments	48%
	Indosat	Dompektu: Electronic Wallet Mobile Payments	27%
	Excelcom		19%
Philippines			
	Globe Telekom Smart	G-Cash : M-banking	68%
Mexico			
	Telcel	Balance Enquires Transfers Payments	4%
	Telefonica/Movistar	Electronic Wallet (<i>pending</i>) Money Telegram Services: Deposits Withdrawals Remittances	15.50%
Cambodia			
	Comviva Mobiquity Mobitel	WING-money: Mobile Money Transfer Mobile Money Transfers (<i>pending</i>)	56%
Colombia			
	Telefonica	Electronic Wallet	65%

SOURCE:

Amrik Heyer and Ignacio Mas, 2009, Seeking Fertile Grounds for Mobile Money

Ernesto, Flores-Roux and Mariscal, 2010, "The enigma of mobile money systems" published at http://findarticles.com/p/articles/mi_hb5864/is_79/ai_n55501271/pg_9/?tag=content;coll

5.5. Evaluation of the existing branchless banking initiatives

A common characteristic of migrants is that they are generally of low income and unskilled or of limited formal education. This is one of the reasons why many people in developing countries resort to informal channels of banking. Most of these unbanked people have no need for a savings account however, they do need a financial service that can allow them to send or receive money. There are several other reasons why many migrants choose to use informal channels rather than the formal financial sector to remit payments:¹³

- Ease of use: Migrants prefer methods with less paperwork
- Familiarity: Informal channels have also been used, or have been recommended, by family and friends
- Cost: Higher costs in the formal financial sector drive away migrants. Fees in informal networks tend to be lower than at banks or with money transfer operators.
- Risk tolerance: There is a perception among migrants that banks are untrustworthy and can lose, or steal, migrants' money
- Access: It can be difficult for migrants to reach the point of delivery
- Informal employment:

A branchless banking service, thus, needs to be supported by a network of retail agents reaching into the communities where customers live. Agents' main role will be to provide cash in/out services within easy reach of their customers, which requires them to manage the logistics and risks associated with increased cash flow. However one should consider the risks that may affect the usage of the services. For instance, the greatest risk in the case of the nonbank-led model has little to do with the use of agents. Instead, the risk is that an unlicensed, unsupervised nonbank will collect repayable funds from the public in exchange for e-money and will either steal these funds or will use them recklessly, resulting in insolvency and the inability to honour customers' claims. Developing country regulators are not alone in facing the challenge of how to deal with "e-money" issuance by parties that are not prudentially licensed. Much of the developed world is grappling with the same dilemma regarding how to unleash the vast potential of this mode of financial service delivery without undue risk, given that e-money issuers often may be parties, such as mobile operators, who are not otherwise subject to prudential regulation and supervision.

¹³ Maimbo, Strychacz, and Saranga, 2010, Facilitating Cross-Border Mobile Banking in Southern Africa

The successful initiatives, like M-PESA in Kenya, or SMART and Globe in the Philippines, highlight the significance of developing a simplified proposal that addresses a customer need, and applicably engaging with the right stakeholders such as banks, agent distribution outlets and technology vendors to execute it. The sustainability of these early deployments is partially attributed to enabling regulatory environments that have made it possible for non-banks to offer basic payments services, but they should equally be attributed to a well-designed and executed business model.

In her study, Carmen Nobel, stated that “the Kenyan experience suggests that the ability of the mobile money industry to leverage on economies of scale largely depends on the provider’s capacity to leverage on the strength of the informal sector (e.g. in relation to its distribution networks), the labour market profile (e.g. demand for remittances generated by rural-urban migration), infrastructural development (including the penetration of the formal financial markets), and the support from the banking regulator. The apparent difficulty of replicating M-PESA’s success even in neighbouring developing countries indicates that some contexts may be more receptive to mobile money offers than others. But it also speaks to the sheer difficulty of ‘pulling off’ a fairly sophisticated business model.”¹⁴

In **Kenya**, Safaricom pools its e-money account proceeds in a wholesale deposit at the Commercial Bank of Africa (CBA). Smart Money, too, has a practice of holding net e-money proceeds in a licensed Kenyan Commercial bank. In some cases, there may be no regulatory barrier to the nonbank holding the net e-money proceeds in some other form of investment (including investments considerably less safe and less liquid than a conventional wholesale bank deposit) or even using them for lending. There are several successful stories for implementing branchless banking services around the world. The Harvard Business School case study *Mobile Banking for the Unbanked* explores two very different examples of mobile financial service models: Kenya’s M-PESA and South Africa’s WIZZIT.¹⁵

M-PESA, as defined earlier in this paper, is an initiative launched by the mobile network operator Safaricom (in conjunction with Vodafone) to offer a new type of financial service to the poor residents of Kenya. Based on its success rate, it seems M-PESA, realized that the

¹⁴ Nobel, 2011, HBS Cases: *Mobile Banking for the Unbanked*

¹⁵ Amrik Heyer and Ignacio Mas, 2009, *Seeking Fertile Grounds for Mobile Money*

intended customers didn't really want bank accounts at all but that they wanted effective ways to send money home to their families. The initial concept of M-PESA was to create a service which allowed microfinance borrowers to conveniently receive and repay loans using the network of Safaricom airtime resellers. This would enable microfinance institutions (MFIs) to offer more competitive loan rates to their users, as there is a reduced cost of dealing in cash. The users of the service would gain through being able to track their finances more easily.¹⁶

However, when the service was tested, customers adopted the service for a variety of alternative uses and complications arose with Faulu, the partnering MFI. M-PESA was re-focused and launched with a different value proposition: sending remittances home across the country and making payments. M-PESA quickly captured a significant market share for cash transfers, and grew astoundingly quickly, capturing 6.5 million subscribers by May 2009 with 2 million daily transactions in Kenya alone. As of November 2011, M-PESA has over 14 million subscribers and well over 28,000 agents across the country.¹⁷ The growth of the service forced formal banking institutions to take note of the new venture.

In May 2010, Safaricom took it one step further, partnering with Equity Bank and offering M-Kesho, an interest-bearing savings account, to all M-PESA users. Subscribers can now use their cell phones to transfer money from their M-PESA accounts using Safaricom's existing network of nearly 20,000 licensed card vendors into their M-Kesho accounts. M-Kesho users are also able to access mobile micro-insurance and microloan products. By registering SIM cards that double as individualized account numbers, Equity Bank is seeing 8,000 new customers each day, and its CEO, James Mwangi had predicted that, in a few months following the launch of M-Kesho, Kenya will be the most-banked country in Africa and the developing world.

In **South Africa** for example, WIZZIT Bank, a division of the South African Bank of Athens offers the usual banking services deposit, withdrawal, payments, and airtime purchases through a variety of access points including cell phones, Automated Teller Machines

¹⁶ Hughes & Lonie, (2007). M-PESA: Mobile Money for the "Unbanked": Turning Cellphones into 24-Hour Tellers in Kenya. *Innovations: Technology, Governance, Globalization*, 2(1-2), 63-81.

¹⁷ <http://www.nation.co.ke/business/news/-/1006/1258864/-/4hyt6qz/-/index.html>

(ATMs), post offices and bank branches. WIZZIT is basically a third-party start-up that provides standard banking services via mobile access to impoverished residents of South Africa. WIZZIT, entered the mobile banking market in 2004 because the mobile phone penetration rate in South Africa was greater than 100 percent, largely due part to the onset of prepaid services that offer low-cost handsets and the opportunity to buy airtime in advance. By 2009, WIZZIT was not yet profitable. The banking partnership proved problematic in that it was hard for a second-tier bank to compete with their larger associates, who by 2008 were forced by government mandate to offer low cost banking options for the poor. But WIZZIT also suffered because the founders failed to recognize the true needs of their target customers.

In September 2010 Vodacom and Nedbank announced the launch of the service in South Africa, where it is estimated that there are more than 13 million "economically active" people without a bank account.¹⁸ Since 2010, M-Pesa has been slow to gain a toehold in the South African market. When M-Pesa first launched, Vodacom projected that it would sign up 10 million users in the following three years. By May 2011, it had registered approximately 100,000 customers. The gap between expectations for M-Pesa's performance and its actual performance can be partly attributed to significant differences between the Kenyan and South African markets, including the banking regulations at the time of M-Pesa's launch in each country.¹⁹ According to MoneyWeb, a South African investment website, "A tough regulatory environment with regards to customer registration and the acquisition of outlets also compounded the company's troubles, as the local regulations are more stringent in comparison to our African counterparts. Lack of education and product understanding also hindered efforts in the initial roll out of the product." In June 2011, Vodacom and Nedbank launched a campaign to re-position M-Pesa, targeting the product to potential customers who have a higher Living Standard Measures (LSM) than were first targeted.

There are several other branchless banking initiatives that were launched specifically in the countries studied. **Brazil** has long history of banks outsourcing various services to agents (also known as "nonbank correspondents"). The Central Bank of Brazil (CBB) has been progressively expanding the agent model since 1999 by allowing more services to be rendered by agents and expanding the list of financial institutions that may use agents. Any

¹⁸ Staff Writer, 2010, "M-PESA launched in South Africa". How We Made It in Africa. Retrieved October 16, 2010

¹⁹ Githahu, 2011, "Kenya: Could Someone Please Start M-Pesa in South Africa".

CBB licensed institution is permitted to partner with any type of legal entity to deliver a wide array of financial services in any location. Brazil's banking system is one of the most inclusive in Latin America with roughly 43% of its population having a bank account. Currently, there are forty-two commercial banks which operate through more than 10,400 branches. The largest six banks held 82% of all banking sector assets. There are 15 branches and 18 ATMS per every 100,000 residents. Banco Azteca alone owns 11.5 percent of the branch network and has the largest account base with over 12 million account holders. Commercial banks manage 41.8 million demand deposit accounts for an estimated 25 million account holders. Country banking statistics show that less than 50% of the adult population has a bank account. In low-income segments, commercial banks compete with approximately 630 credit and savings organizations.

Although, Brazil was the first Latin American country to adopt specific regulation regarding financial services for non-banking correspondents, there is still no specific regulation for mobile money services. Some entities are working in the implementation of electronic wallets, probably oriented to remittances, given their volume and value. Although they only represent 1% of GDP, (US\$7.1 billion in 2010), the majority of these remittances were mainly from the US, Japan, and Europe. Of the people that received remittances in Brazil, 63% already had a bank account, thus leaving a gap of the 37% unbanked.²⁰

The past few years have seen an aggressive growth in the mobile phone industry although the market is still relatively immature. Four operators; Vivo, Claro, Oi, TIM; answer for 95% of the market share (divided roughly equally among them) and Global System for Mobile Communication (GSM) technology dominate the industry. In November 2007, there were 114.7 million cell phones in use, 80% of which were prepaid and every month approximately 1.8 million new clients are added to the system²¹. It is noteworthy that in contrast to the banking network, which reaches every municipality through bank agents, 2,200 municipalities do not have access to mobile phone services (although more than 90% of the population is covered by the existent wireless network).

²⁰ Ernesto, Flores-Roux and Mariscal, 2010, "The enigma of mobile money systems" published at http://findarticles.com/p/articles/mi_hb5864/is_79/ai_n55501271/pg_9/?tag=content;coll

²¹ Anatel: "Notícias, 23 November 2007"

Additive branchless banking; where banks, in partnership with the mobile companies started offering basic transactions (transfers, balance inquiries) using WAP technologies has been active in Brazil for over ten years. Nevertheless, it was not until 2007 that more widespread services started being offered. Oi Paggo, a subsidiary of Oi, launched a credit service, initially to buy airtime, but subsequently as a line of credit for general purchases. Oi Paggo operates as a credit card administrator with its own banner, bearing the risk of payment delinquency. It has developed a network of 75,000 establishments that accept payments through the use of mobile phones in twelve cities scattered through the north east of Brazil. The mobile phone user, through a process similar to that used by banks and credit companies for credit scoring; opens a credit account with Oi Paggo, uses the phone to buy airtime (about two thirds of the transactions) and certain products and services, and on a monthly basis receives a billing statement, separate from the phone company statement, which can be paid through the internet, at a bank, or at other payment agencies.

On the receiving end, Oi Paggo facilitates the POS device (a mobile phone) and does not charge for it; it charges typical credit card fees (2.99% on the amount of the transaction, somewhat lower than what other credit card wholesalers charge in Brazil) but no on-going additional charges. Additional services, such as a prepaid service, credit that can only be used for top-up, utilities payments, special top-up programs, and the transfer of money (person-to-person), will be launched in the near future. For the transfer of money, they have offered an initial launching fee of Brazilian Real R\$0.99 (US\$ 0.56), substantially lower than the current offer by banks and other money-transfer companies. The money can be cashed out at certain banks, some large retail stores, or through their correspondent network.

“By May 2010, Oi Paggo had around 250,000 users, representing about 5% of its user base in the cities where the services are offered. Originally, they launched an above-the-line campaign, which brought in more than 400,000 users, but due to rampant fraud, they have since scaled down, marketing their services through mobile and direct marketing, and, more successfully, telemarketing. They have a preapproved customer base of 2.5 million subscribers on which telemarketers work. The model, successful as it is, has not yet reached enough scale or critical mass to enter into a self-supporting virtuous circle. The establishment network and the user base are still not large enough to enter into reciprocal reinforcement. It is not yet totally transformative, as it offers financial services to people mostly previously banked, only adding convenience and a lower price, but the new features will probably make

it more attractive to a substantially larger consumer base, becoming then a transformative model”.²²

In contrast to the use of retail agents by banks (known as "bank-based branchless banking"), nonbank-based branchless banking is only in its early stage in Brazil. However, there is remarkable space for nonbanks to compete for customers with low value accounts, since approximately 80 million adults still lack access to bank accounts. Brazil has an excellent opportunity to adjust its regulatory framework to fine-tune the balance between openness, safety and service continuity by (i) taking the necessary measures for retail agents to expand further the access to banking services and (ii) opening the doors to nonbanks while setting adequate minimum requirements and principles for their participation in the supply of low-value financial services.

In **Russia** interest for branchless banking has dried up since the country ministry of telecommunication shifted priorities in 2009. Currently, the main profit centre and focus for MNOs is communication services, not financial services. Still, there has been activity from MNOs. Beeline, one of the three largest nationwide MNOs, has demonstrated a significant interest in branchless banking by teaming up with Tavrishesky Bank. The partnership designed a similar product as MPESA and WIZZIT product with the intention that it will be offered by various mobile operators. This designated account is a pooled account for Beeline customers. Individual “account” information is held by a processing centre, which is a legal entity separate from Beeline and from Tavrishesky Bank. Although each customer must sign an agreement with Tavrishesky Bank, the customer is not required to open a bank account. There were more than 1 million active users in the fourth quarter of 2009. A similar project was launched by Megafon (a nationwide MNO with approximately 31 million subscribers) in 2009.

India is the world's second largest mobile market, with over 400 million subscribers, but it still only has 20 million to 25 million registered users for mobile banking. The active user base is only about 10 percent of the total user base. Rural India is a huge and challenging market insofar as banking is concerned. The country has close to 600,000 villages, making it

²² Ernesto, Flores-Roux and Mariscal, 2010, “The enigma of mobile money systems” published at http://findarticles.com/p/articles/mi_hb5864/is_79/ai_n55501271/pg_9/?tag=content;coll

difficult to establish brick-and-mortar banks everywhere. According to the Reserve Bank of India (RBI) 40 per cent of Indians lack access to formal financial services and remain largely "unbanked" despite a large banking system and cooperative credit network. Approximately 25 percent of adults have credit accounts in the formal financial sector, and 82 percent of adults have savings accounts. While the government and RBI have taken steps to establish a widely distributed presence of bank branches, India's large population has made it difficult to ensure financial services are accessible to all those who need them. Building more branches in the countryside may not always be cost-effective and thus banks need to explore other options by developing a better understanding of what rural households need and offer new products and distribution networks that suit them.

Providing banking services through 'banking correspondents' represented by self-help groups, NGOs and other approved organizations is one branchless banking mechanism. Touch-points may be set up by such organizations at places commonly visited by the unbanked, such as the village markets or schools. This may be supplemented by outreach teams equipped with hand-held devices on which simple banking transactions can be performed. In September 2007, ABN Amro Bank announced that its microfinance division had provided basic financial support to some 500,000 underprivileged households. Mobile banking is another way of reaching out to such customers and is also a huge opportunity for banks in India. This is on the back of the continuing growth of mobile phone subscribers which is outpacing the growth of banking customers and PC and Internet users in India.

In 2006, banks were allowed to take the help of NGOs and microfinance institutions as intermediaries in offering banking services through the use of correspondents. This was perhaps a factor for many banks that opened six million accounts with low or zero minimum balances between March 2006 and 2007. ICICI Bank, HDFC Bank and Citibank have launched their own microfinance programs. HDFC Bank has tied up with NGOs in Andhra Pradesh and Tamil Nadu to make money accessible to the rural poor. Citibank has linked up with NGOs. Banks are looking at technology to provide banking services at low cost and this includes rural banking too. Citi has set up a bio-metric ATM as a part of its 'no-frills' Pragati account for the under-banked. The ATM recognizes the customer through their thumb impression and can interact in regional languages.

Three areas of particular concern namely; access to finance, consumer protection, and banking sector stability, have shaped the RBI's thinking on branchless banking. India's regulators and policy makers tend to focus on credit and savings services in rural areas and the existing gap between supply and demand. This was the primary focus of Khan, 2005 report on RBI working group on electronic money.²³ The Khan report proposed the use of third-party "business correspondents" to assist in the delivery of financial services. RBI has since issued a circular permitting such outsourcing²⁴. The report also highlighted information and communication technology (ICT) as a way to leapfrog the efforts to increase outreach by reducing costs of service delivery. Notwithstanding RBI's focus on serving rural areas, fertile ground for branchless banking may also be found in the need for payment services for the several hundred million urban poor and remittances for India's 80 million migrant workers from rural areas.

Currently, the bank led model, mCHECK is the leading model. However, mobile transactions are restricted to bank account holders only.

China is the world's largest mobile phone marketplace with 987.580 million subscribers. Rural Chinese are also increasingly using mobile phones for applications targeted to them, such as an Agricultural Information Service and Banking. With mobile penetration of 56 percent and 8.8 million new subscriptions a month, China has one of the most dynamic markets in the world, as well as the fastest-growing major economy. GDP growth of 8 percent in 2010 and rising incomes are increasing the spending power and material wealth. But the picture varies across this enormous country. The urban, rural and youth markets in particular show extreme diversity in user sophistication and demand for services. The People's Bank of China (PBC) estimates that only 36 percent of Chinese rural households have access to financial services. As one indicator of demand, the informal finance market has been estimated at anywhere between CNY 1 trillion (US\$132 billion) to CNY 2 or 3 trillion. However, the bigger Chinese banks have for many years now been moving out of rural areas, motivated by commercialization and competitive pressures. The four big state banks have reduced their presence in rural areas by over 43 percent in ten years, closing

²³ Reserve Bank of India; 2005; Report of the Internal Group to Examine Issues Relating to Rural Credit and Microfinance

²⁴ Reserve Bank of India, "Report of the Working Group on Electronic Money" (11 July 2002), Vol 36

30,000 branches in the last five years alone. It is for this reason that the Chinese government launched several initiatives to test out new forms of rural financial service providers. Among them:²⁵

- The People's Bank of China in December 2005 launched a pilot initiative to establish Microcredit Companies using commercial licensing
- The China Banking Regulatory Commission in December 2006 introduced their own pilot, creating new types of licenses for rural financial institutions

Given the reliance on cash in rural China and given that additional ATMs do not appear to be the answer, the existing mobile Short Message Service (SMS) network is however successfully serving and providing cheaply, an SMS-based payment system in rural areas. The most expensive parts of the infrastructure i.e. the network and phones are already in place, thus this solution is relatively low in cost and can be replicated in other developing countries. Currently, some leading third-party payment providers are adding cash-based and non-bank based payment options to their offerings. These include:

- Cash remittance: Alipay is a third-party payment provider, allowing users to top up accounts with cash through China's postal service. This service was launched in March 2007 in selected China Post Office branches throughout China.
- Mobile toll stations: Smartpay, China's leading mobile top-up company has formed a network of approximately 30,000 dealers. Smartpay dealers allow users with bank accounts to easily use Smartpay's services, which in turn gives Smartpay access to a much wider range of potential users.
- Targeting the unbanked with pre-paid cards: E-payment player IPS uses mobile and telephone prepaid cards in order to reach unbanked users. This service takes advantage of the popularity of prepaid top-up cards used for phone bills, online games, and virtual currencies in China. The cards are usually purchased with cash at newspaper kiosks, small shops, and internet cafes. IPS operates a service called Ipay.

²⁵ Gautam Bandyopadhyay, 2009, One Billion Opportunities: Banking the Unbanked Globally viewed at <http://www.infosys.com/finacle/solutions/solutions-kit/Documents/one-billion-opportunities.pdf>

In **Colombia**, there are approximately 25 million mobile phone users. The country has approximately 45.6 million inhabitants, 73 percent of whom live in urban areas, and 64 percent of whom are below the poverty line.²⁶ Three MNOs cover 90 percent of the market and 100 percent of the municipalities. Telefonica occupies 65 percent of the market share and the Telecommunications Regulatory Commission (CRT) is examining this dominant position in order to ensure a healthy competition. Electronic commerce in Colombia is developing slower compared to countries such as Argentina, Brazil, Chile, and Mexico. This is mainly due to low computer and internet penetration and concerns about security. ACH Colombia (the main payment clearing and settlement system) and Certicamara (a digital signature certifying authority), have created a certification process for e-banking transactions to encourage the use of internet banking. A USAID study indicates that opening a bank account is viewed as a difficult and complex process. Moreover, formal financial services are perceived as linked to taxation and traceability, and therefore are not always desirable for unregistered micro-entrepreneurs. The CRT reports that internet penetration reached 13.2 percent of the population in mid-2006 although the current average internet cost of US\$30 per month is relatively high for low-income segments. With regards to mobile banking and e-money issuance by nonbanks, client adoption is expected to be a barrier due to a perceived distrust in nonbanks as depositaries of client funds.

Findings in **Indonesia** showed that an estimated 40 million people have cell phones but no bank accounts.²⁷ According to the World Bank, Indonesia averages 6.7 bank branches for 100,000 adults. Developed economies, like the United States and Europe, average 4-6 times more banks per capita than Indonesia, making it more convenient for customers in those countries to use banking services. In addition, bank customers are not keen to travel a long distance to a bank, and they value having the convenience of a bank that travels directly to them. The Indonesian mobile phone market is dominated by three companies. Telkomsel has 48 percent market share, followed by Indosat with 27 percent, and Excelcom with 19 percent. Four other companies share the remaining 8 percent. There are currently 172 million active SIM cards in service, but one industry source estimates that this represents only 90 million customers, many of which hold multiple accounts. This implies a penetration rate of

²⁶ Aguirre, Dias and Prochaska, 2008, Diagnostic Report on the Legal and Regulatory Environment for Branchless Banking in Colombia

²⁷ Flaming, Prochaska and Staschen, 2009, Diagnostic Report on the Legal and Regulatory Environment for Branchless Banking in Indonesia

approximately 38 percent of the population. Ninety-five percent of subscribers hold prepaid accounts. The industry is showing early signs of maturing. Established networks are reaching existing capacity as usage rates have quadrupled since 2007. New MNOs have entered the market, rates per minute have dropped to approximately the regional average of US\$0.025–US\$0.03 per minute, and customer churn (also known as customer turnover) per year is approximately 12 percent.

The two largest MNOs have each developed an e-wallet service for their mobile phone customers. Telkomsel's T-Cash, a mobile wallet allowing customers to make retail payments, is available to customers, but industry watchers estimate that T-Cash has no more than 80,000 accounts and that Telkomsel will in fact abandon the service for a bank account-based application in the near future. Even though Telkomsel has received a remittance license from Bank of Indonesia to offer a P2P transfer function with its product, it currently does not offer that function. Indosat has developed, but not yet launched, its Dompetku service. However, Indosat has not been able to qualify for a remittance license, which it needs to add P2P transfer functionality to its e-wallet service. T-Cash and Dompetku offer customers fewer transaction services than existing commercial bank-based m-banking models. Most of these limitations are imposed by regulation (see section on Banking regulations). In this context, a mobile-wallet service does not appear to have significant revenue potential for MNOs as mobile-money issuers, suggesting that MNOs offer mobile-wallets simply to reduce customer churn and facilitate airtime purchases, but fail to expand banking services to the people.

Mexico is a “country with a relatively sophisticated banking sector and looks back on a decade of economic stability. However, only 30 percent of the adult population has access to formal financial services and the reach of electronic payments is low. In the past 3 years, the country has seen a wave of market entrants targeting the lower income segment”.²⁸ The mobile phone industry in Mexico is highly concentrated in a single MNO- Telcel -that has 74.2 percent of the market share, while the second largest – Telefonica/Movistar – has 15.5 percent. Nonetheless, call and handset prices have been dropping considerably in the last few years, hence the growth of mobile phone subscribers has surpassed 100% in the last five years. With an adult population of 107.76 million there are about 79 million active mobile

²⁸ CGAP's 2009 "Notes on Regulation of Branchless Banking in Mexico

phone accounts in Mexico. For the period between 2007 and July 2010, mobile phone subscriptions grew by 14.6%.

While Telcel, the dominant MNO, has partnered with some banks to initially target higher-income bank clients for mobile balance inquiries, transfers, and payments, Telefonica envisions offering an electronic wallet that could be used for purchases and peer-to-peer transfers, with an eye to the remittance corridor from the USA to Mexico. In this view, this could possibly mean that Telefonica's 13,000 agents could be turned into agents for cash in/cash out transactions. However, this project is still in its infancy because, Telefonica has not yet presented it to the Comisión Nacional Bancaria y de Valores (CNBV) for evaluation from a regulatory standpoint. CNBV is an organisation that monitors and regulates Mexican financial institutions to ensure their stability and proper functioning, maintaining and promoting the healthy and balanced development of the financial system as a whole, while protecting the interests of the public. The CNBV is at the forefront in its thinking about branchless banking and its potential to increase access to finance.

Telecom, the national telegram service, also offers an open agency platform to deliver services such as deposits, withdrawals, and remittances, to six major banks through its network of 1,566 points. This platform has been operational since 2005 and processes approximately four million transactions per year. In the same vein, there is also evidence of possible future growth as suggested by a considerable number of mobile banking initiatives that have been planned or are already under way.

Cambodia, on the other hand, has a population of over 14.805 million but less than 4 percent of the population has a bank account. There are some 13 million active SIM cards in, this equates to mobile penetration of 88 percent of the total population. The country has relatively few ATM machines i.e. 34.13 per 100 000 adults.²⁹ As in many other developing countries, institutional banking infrastructure is highly underdeveloped. With only 500,000 bank accounts and 200 ATMS in the entire country, an approximate 95% of the population has no access to formal banking services. Operating in Cambodia since February 2008, WING, a wholly owned subsidiary of ANZ, one of the top 40 global banks, strives to build a mass-oriented, cost-efficient and inclusive financial services delivery network in the country. In

²⁹ CIA World Factbook, 2010

December 2008, WING launched WING Money Cambodia's first mobile payment service powered by Comviva's Mobile Money platform.

WING uses existing channels on mobile-phone networks – including Hello and Mfone to transfer money from P2P through text or small message system (SMS). After a user sets up a WING account for a subscription fee - their money is held by ANZ bank and moved between WING users by SMS. In its first year of operation, the service attracted 100,000 users – an estimated 56 percent of which were previously unbanked. It is now working with microfinance institutions (MFIs) to expand to loan repayments. For ANZ, the plan gives birth to more financial transactions while MNOs will see SMS traffic and revenue balloon. Furthermore, Mobitel, the largest mobile operator in Cambodia is offering mobile money facilitated by a grant from the GSM Association Foundation. Mobitel, owner of the Cellcard mobile brand, is still finalising the list of services to be offered, but it would include allowing money transfer by mobile phone. Cellcard will be providing much-needed financial services such as money transfer, bill payment and airtime top-up to working-class migrants who need to send money home to families in rural areas.

However, branchless banking also has several features which may restrict its impact. These features are more likely, however, to affect the speed of adoption, rather than limit the potential described.

- Branchless banking requires prior access to a mobile phone—however; initiatives are underway to reduce the initial handset cost so that it is not an impediment.
- Mobile networks in many low income countries are still enjoying explosive growth in subscribers, and are focused on basic network rollout; even if the additional financial investment required for branchless banking is limited and the revenue positive, they may be less amenable to divert scarce human resources from this core business into other noncore projects.

In the **Philippines**, at least half the nation own or have easy access to mobile phones. Nearly two million of the active mobile banking users are unbanked, and 26 percent of active users have incomes below P250 (approximately US\$5) per day.³⁰ The use of SMS is more widely utilized rather than voice, and for that reason, branchless banking and mobile banking utilizes

³⁰ The Philippine Star, 2010, article by Ted P. Torres accessed January 19, 2010 available at <http://www.philstar.com/Article.aspx?articleId=541907>

SMS extensively. CGAP estimates that 98 percent of unbanked Filipinos receive their income in cash, and overwhelmingly use informal saving instruments, such as keeping their money at home in a safe hiding place, giving money to a friend or family to hold, or joining a saving club. Low-income Filipinos save an estimated US\$450 million in informal, actively managed with frequent deposits and withdrawals. They use mobile money to send and receive domestic remittances, on average sending US\$57, and receiving US\$48. The biggest differentiator between mobile money users and nonusers is not income, but the extent to which they send and receive money transfers. Sixty-eight percent of mobile money users send money, compared to nine percent of non-users, or 7.5 times more frequently.

The Bank of the Philippine Islands (BPI) has started branchless banking, through BPI Globe Savings Bank (BanKO). Branchless banking started because network operator SMART (bank led model), late into the cellular market, was under pressure to find innovative ways to target a broader customer base. This led them to pioneer offering credit increments on prepaid at very low levels. Competitor Globe then developed similar concepts. This led to the provision and promotion of m-Commerce, which is a natural progression from low value prepaid transactions.³¹ Globe Telecom Company has been offering branchless banking since 2000. Globe Telecom pools the funds that back its e-money accounts in several wholesale deposit accounts at licensed commercial banks. It's G-Cash (telco led) service enables customers to use cell phones to operate e-accounts. The customer can deposit cash into the e-account or withdraw it, using the retail agents of Globe Telecom, who are spread across the country. Customers can use G-Cash to pay bills, repay loans, or purchase goods at shops (it's effectively a debit card). Over a million Filipinos now have e-accounts with Global Telecom.

Smart Telecom modes of actions include:

- Conventional ATM and Point of Sale (POS) are used through debit card
- Payment via value chain, account management
- Banks sign up accounts
- Accounts are managed by MNO, banks have real-time access to account information
- Core processing system lies with Mobile Network Operator but bank's delivery channel is used

³¹ Neville. 2006. Micro-Payment Systems and Their Application to Mobile Networks. Washington, DC: InfoDev / World Bank. Available at: <http://www.infodev.org/en/Publication.43.html>

5.6. Branchless banking pricing compared to traditional banking

“Branch offices historically have been one of a bank’s major costs as well as its main contact point with retail customers. This makes branches a logical target for efforts to cut costs and increase productivity. The movement to increase productivity and cut costs in branches led to the development of new channels for servicing opportunities, these opportunities offered the potential for reducing average transaction costs and less need for brick-and-mortar branch offices and tellers. At the same time, these innovations improved customer convenience and service.”³² Literature indicates that within the financial services industry some expenses are driven by the actual products or transactions. A significant part of the expenses for service functions are, however, caused by differences in customer preferences and the way a service company reacts and adjusts its services to those preferences.³³

Moreover, mobile money providers might also be keeping profits for themselves and not passing them on in lower costs. Informal sector, on the other hand, has also failed to serve the poor masses. Informal lender’s charges are very high and keep the adult labourer as collateral. Exploitation of real valuation of collaterals’ high interest rate and monopoly of lenders keep away the majority of the clients from the informal financial sector of providing finance to poor people, from income generating activities to reduce poverty.³⁴

CGAP Research experiences have shown that branchless banking through agents can significantly reduce set-up and delivery costs, offering cash-in/cash-out operations only or a broader range of financial services to customers who usually feel more comfortable banking at their local merchants than at traditional bank branches.³⁵ The study analyzed the services of branchless banks like Brazil’s Bradesco and Caixa, Cambodia’s Wing Money, India’s Eko, Kenya’s M-PESA, Zap Kenya, and South Africa’s Mobile Money etc. It found that by

³² Al-Astal, 2008, The Use of Simulation for Evaluating Branchless Banking Servicing Opportunities Via Cellphones: A case study on Palestine Islamic Bank

³³ Mostaque, Hussain & Gunasekaren 2001, Activity- Based Cost Management in Financial Services Industry, Management Service Quality, Vol 11 No, No. 3.

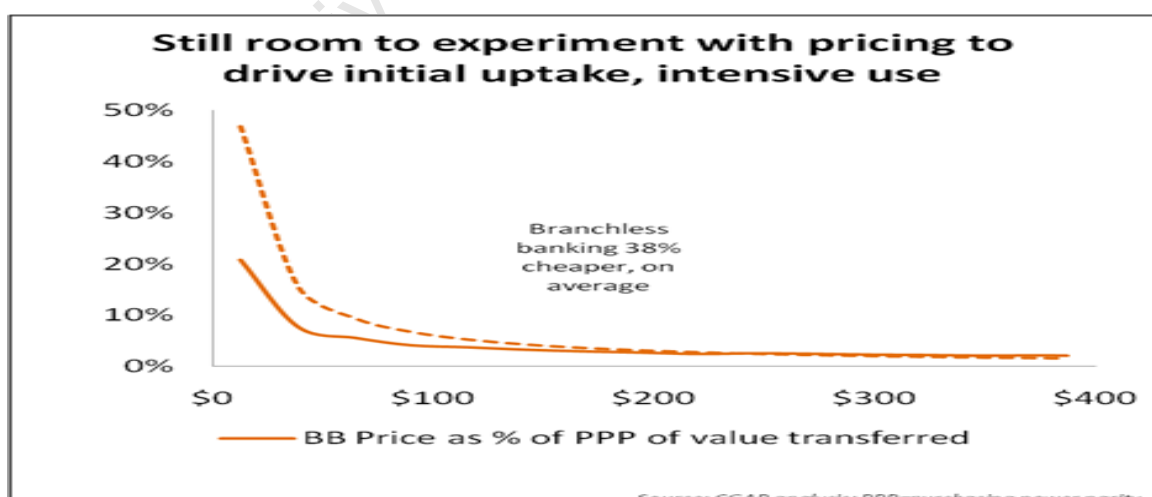
³⁴ Bhaduri (1983); Rao (1980) Bardhan (1980) Ghosh (1986); Ghate et. al., (1992); Herani (2002a&b); Herani (2007); Herani, Rajar and Dhakan (2007); Herani (2008); Sudan (2007); PGE (2009).

³⁵ Mas, I and Ivatury, G, 2008, The Early Experience with Branchless Banking, CGAP, Washington DC

comparing the 26 branchless banking pioneers and traditional banks with products aimed at the same kind of customers, on average, branchless banking is cheaper across eight services. These services included money transfer, short-term safekeeping, medium-term saving for asset, bill payments, high usage (as a proxy for financial inclusion) average monthly transactions per M-PESA user in 2008 and average monthly transactions per Kenyan banking customer.

It was found that the lower the transaction value, the cheaper branchless banking is in comparison with banks. For example, at a transactional value of US\$23, branchless banking is on average 38% cheaper than commercial banks the study looked at. If compared to other informal options for money transfer, branchless banking is still 54% cheaper. Informal providers charge double the price for a money transfer than a branchless banking provider.³⁶ Customer usage is influenced not only by absolute prices but by the way a service is priced. For example, in order to encourage trial of money transfers, some services offer free deposits, which make branchless banking an affordable way to save. Average branchless banking price is US\$3.90 per month. Branchless banking is particularly cheap (50% cheaper) if clients use it for medium-term savings and bill payment. In the case of short-term safekeeping, banks as a group are cheaper (43%) than the branchless banking pioneers. In other use cases (sending, receiving, high usage, and typical M-PESA and Kenya bank customers), branchless banking is cheaper, but not dramatically so, ranging from 12% to 14% cheaper (see figure below).

Figure 2: Branchless banking pricing analysis

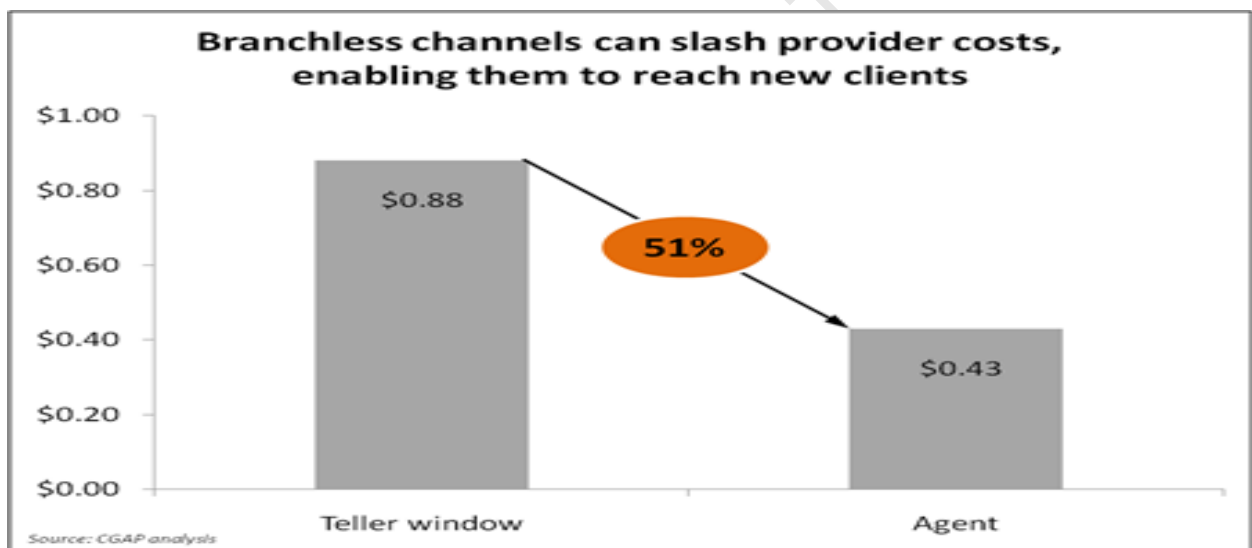


Source: CGAP Focus Note 66 "Branchless Banking 2010"

³⁶ McKay, 2010, Branchless banking pricing analysis

“This branchless banking initiative does not only benefit the customer, but it can reduce the service provider’s costs. Providers can reap substantial cost savings from channels that replace branches with technology paired with agents, typically merchants who handle deposits and withdrawals and are connected via mobile or card-swipe POS terminals. The figure below shows the cost reduction for 4 Mexican and Colombian banks from moving deposit transactions from teller to agent. Cost savings will vary by institution, driven by inter alia the fixed cost of branch depreciation on one side and variable cost of agent commissions on the other. CGAP estimates most banks will see 51% cost savings or greater. This enables them to reach low-income clients who were previously uneconomical to serve. Other providers -- mobile operators, tech firms -- which want to enter financial services for the first time can also employ agents to cost-effectively roll out.”³⁷

Figure 3: Cost analysis - branchless banking versus formal banking channels



Source: CGAP Focus Note 66 "Branchless Banking 2010"

³⁷ Pickens, Porteous, and Rotman. 2009. “Banking the Poor via G2P Payments.” Focus Note 58. Washington, DC.: CGAP.

5.7. Government's role in providing investment in branchless banking

Increasingly, branchless banking implementations seeking to replicate M-PESA's success are gaining traction. CGAP estimates there are 50 branchless banking implementations with active users and 22 with more than 1 million registered customers.³⁸ There is increasing evidence that branchless banking services are reaching the unbanked. CGAP Focus Note further found that 37 percent of customers (or an average of 1.4 million people each) across eight branchless banking implementations were previously unbanked.³⁹ Public funders have been instrumental in promoting and developing the microfinance industry; close to 70% of cross border public funding going into microfinance comes from public sources.⁴⁰ Since 2007, The International Finance Corporation (IFC) has actively invested in branchless banking services such as WIZZIT in South Africa and FINO in India and provided advisory services to financial institutions, MNOs, and third party payment service providers.

“An estimated 170 million poor people around the world receive regular payments from their governments for pensions, food assistance, cash payments related to social programs, and other transfers. The majority of government- to- person (G2P) payments are in person and in cash, posing such drawbacks as security risks and high transaction costs for payers and beneficiaries. Fewer than 25 percent of government beneficiaries around the world receive their monthly payments in a bank account where they can also save. In addition to the potential cost savings for governments, this gap presents an opportunity to increase financial access for the most vulnerable groups of people. G2P deposit programs can provide recipients with the ability to save and to make payments safely, cheaply, and conveniently. The main actors in G2P payment banks, beneficiaries, and governments all have something to gain if the proper conditions are met and the programs are well executed”.⁴¹ Channelling large volumes of payments through branchless banking channels can help these services gain traction. Hence, in addition to policy and regulatory assistance, funders can help catalyse branchless banking by influencing governments to leverage their payment flows through

³⁸ Bold, 2011, The State of the Branchless Banking Sector: CGAP blog post at <http://technology.cgap.org/2011/05/11/the-state-of-the-branchless-banking-sector/>

³⁹McKay and Pickens, 2010, Advancing financial access for the world's poor

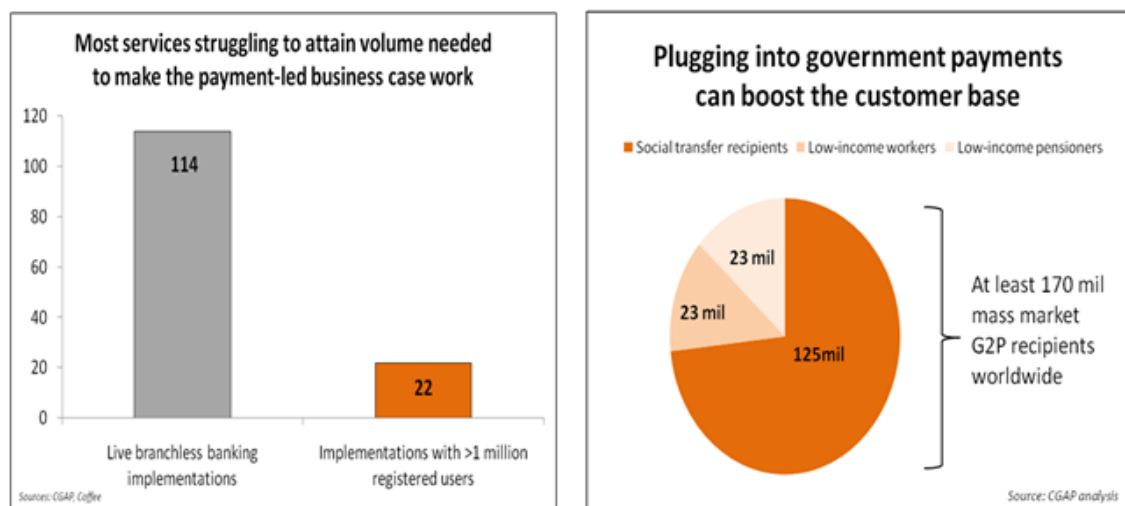
⁴⁰ McKay and Martinez, 2011, What Role Should Public Funders Play in Branchless Banking?

⁴¹ CGAP, 2011, Branchless Banking database

branchless banking channels. This would only be easier once a basic branchless banking service is up and running.

In addition to being a collector, government is often the single largest payer in a country, with millions of small payments on a monthly basis for salaries, pensions and social welfare transfers. Thus, government payments are likely to be particularly suited to the efficiencies offered by mobile money solutions. Brazil is a prime example, where a bank-led payment model operated through cards and POS devices is now the main vehicle for government social welfare payments to 11 million recipients. South Africa also has a nation-wide social transfers system covering one-third of households. To provide a point of comparison, 170 million poor people who receive G2P payments exceed the estimated number of active microloans worldwide (150 million). But after bulk payers are signed up, there remains the important question of whether payees will use their account for more than just removing all the cash. Branchless Banking Initiatives i.e. BBIs must also look at the value proposition not only to payers but also to payment recipients, if they hope to convert them to active, valuable clients.

Figure 4: Government payments can boost customer base



Source: CGAP, Branchless Banking database, 2011.

“In Africa, the mobile money opportunity appears large because a large share of the population lacks access to basic formal financial services, but nonetheless needs to regularly transfer value due to domestic migration patterns (sending remittances back home, paying school fees) and underdeveloped retail networks (settling utility bills, card-based airtime top-

ups). In Asia, exceptionally high population numbers and a readiness to adopt new technologies indicate a strong opportunity. In Latin America, experimentation with mobile money so far has been very limited. This is likely due to significantly higher urbanization rates and more developed retail franchises, which make it easier for banks to address customer segments through bank-based infrastructure (whether through branches or branchless channels). Stronger, more protective bank supervision departments and more expensive telecoms services have also served to limit the potential of distributing financial services through mobile phones.”⁴²

5.8. Challenges facing the adoption of branchless banking

The challenges to branchless banking are several, some general, and some that are more country and context specific. In South Africa, for instance, and possibly in several developing countries, cell phone theft leaves mobile phone users in a vulnerable position, especially if these devices are being used to access financial services. Another challenge, which has been raised before is that of financial literacy. It involves not only educating clients about their options in terms of accessibility and the modus operandi of various technologies, but also bigger issues like record keeping, monitoring one’s finances and using financial services responsibly. Yet another key challenge involves the formulation of trust with respect to new technologies.

“Financial institutions need to develop trust towards the products they offer among their client base. Clients value reliability, affordability, immediate redress of grievances and accessibility for redressing complaints about services rendered. By ensuring these qualities, financial institutions can gain trust from their clients. The importance of government regulation and cooperation with respect to branchless banking emerged as a key theme from the experiences in countries like Pakistan and Colombia. The institutionalization of branchless banking models brings in more scrutiny from regulators and subsequently the demands placed on these financial institutions with respect to know your client (KYC) and customer due diligence (CDD) can be very high. The costs of meeting these demands can be significant, particularly when one considers the nature of transactions carried out by clients

⁴² Heyer and Mas, 2009, Seeking Fertile Grounds for Mobile Money

accessing these agents. Once again, micro-finance institutions (MFIs) are faced with the dilemma of managing costs while using innovative approaches to service poor clients.⁴³

Like every new technological solution, mobile banking services face a few problems and risks too. Some common impediments identified by the Consultative Group to Assist the Poor (CGAP) and Microfinance Focus are⁴⁴:

- Difficulty in maintaining cash float: mobile money franchise operators (agents) often find it difficult to maintain enough cash to serve customers in rural areas who withdraw money after receiving electronic funds.
- Consumer-related issues: fraudulent activities as well as hidden charges are emerging concerns for mobile banking while on the other hand the simplified process of registering for mobile banking services is often difficult to establish the authenticity of customers.
- Regulatory hurdles: Central Banks are often worried about allowing non-bank entities (mobile money telecom franchise operators) to receive or make payments on behalf of banks. This limits the service offering where a non-bank microfinance model is followed for mobile banking, such as Western Union's partnership with mChek.
- Trust issues: consumers in less developed countries take time to get used to new mobile technology, especially since it involves trusting someone else with their money.
- Conceptualizing Electronic Money: Even the simplest handsets have features buried deep in menu structures. If navigating an m-banking/m-payments interface is difficult for experienced mobile users with bank accounts, even greater is the difficulty for first-time users in the developing world, many of whom will have only been using a mobile for a year or two. However, the challenges may run deeper than interface design. People coming to banking for the first time via the mobile handset require a command of abstract concepts about invisible/virtual money.

6. Regulation: Banking and telecommunication

Both regulators and financial service providers around the world could benefit from gaining an in-depth understanding of how branchless banking operates and how it is regulated in other countries. This section gives an overview of rules and regulations affecting the adoption

⁴³ Matilla, 2002, Factors Affecting the Adoption of Mobile Banking.

⁴⁴ Donner, 2008, Mobile banking and economic development: Linking adoption, impact, and use.

of branchless banking. Reserve Banks around the world seek certainty that the monies exchanged are secure and legal. Regulatory issues from a financial regulator's perspective, concerning mobile banking are related to consumer protection, consumer awareness, effect of m-banking on stability of banking & payment systems, legal definition of deposit, e-money regulations, provisions for agency agreements and anti-money laundering - combating the financing of terrorism (AML-CFT) laws. Regulatory requirements include fraud protection and secure service, protection from illegal money laundering, information, and clear regulatory criteria that enable innovation and risk management. An important prerequisite is the "know your customer" i.e. KYC requirements.

Appropriate customer protection against risks of fraud, loss of privacy and even loss of service is needed for establishing trust among consumers as trust and customer confidence is the single most necessary ingredient for growth of branchless banking. As banks will be dealing with a large number of first-time customers with low financial literacy level, they need to ensure that adequate measures for customer protection, awareness and dispute resolution are in place. Likewise, customer awareness is a key defence against fraud, identity theft and security breach. Regulation will go far in determining not only whether branchless banking is legally permitted, but also which models of branchless banking are economically feasible and how far they will go in reaching previously unserved or underserved poor people.

In South Africa, under the South African Reserve Bank (SARB) Directive 1 of 2007, non-banks may accept funds from one person to make a payment on behalf of that person to a third person to whom the payment is due without this being deemed deposit-taking. This covers for example bill payments. However, this does not extend to person-to-person payments where a payer sends electronic value to a beneficiary who is then able to cash that value. As the money is not due to the beneficiary as an obligation, the 2009 SARB e-money position paper classifies such transactions as deposit-taking. Deposit-taking may only be conducted by registered banks. Nedbank, a South African based institution, spent a significant amount of time working with regulators to ensure its M-PESA service complies with all requirements of the SARB. FNB and PayPal have also received approval from the SARB before launching their service in the country.

All financial institutions must still obtain and verify a customer's full name, date of birth, and identity number, using an official identity document for verification. Given that

approximately many South Africans lack such an identity document, the rules still exclude many low-income people from financial services. It is for that reason that banks and money transfer companies are not strictly required to obtain and verify a customer's income tax registration number and residential address, provided that certain requirements are met (transactions limited to approximately US\$800 per day and approximately US\$4,000 per month; maximum account balance of approximately US\$4,000 at any time; no international transfers, with limited exceptions).

In India, the central bank has emphasized that AML/CFT requirements should not limit poor customers' access to financial services. For all accounts, identity and address requirements can be met through documentation such as ration cards or letters from public authorities or employers. In addition, for certain low-value accounts (maximum account balance of approximately US\$1,100; maximum total annual credit of approximately US\$2,300), prospective customers lacking necessary documentation can be introduced by another customer in good standing who was subjected to full "know your customer" procedures and who can confirm the prospective customer's address. Alternatively, for these low-value accounts, banks can accept any form of documentation that satisfies them as to the identity and address of the customer. In Brazil, poor customers must meet the same identification requirements as any other customers. However, customers may open low-value accounts (generally, maximum balance of approximately US\$500) using records provided by the National Social Security Institute, as long as all of the necessary identification information is contained in these documents. In addition, customers may temporarily open a low-value account using only their Social Identity Number, but full documentation must be provided within six months, or the account will be closed. This gives agents operating in remote areas more time to submit the required information.

7. Summary of key findings in countries studied: which model is popular and why

Table 3: Key findings in countries studied.

Country	Adoption of MFS services	Financial sector regulation	Telecom sector regulation	Telecom and FS regulatory alignment	E-money licensing	MNO role as banking agent	Proportional KYC requirements	Existence of MFS consumer protection policy	Existence of AML/CFT regulation	Mobile G2P payments
Kenya	high	yes	yes	ad hoc	no	yes	yes	yes	yes	yes
South Africa	medium	yes	yes	ad hoc	no	yes	yes	yes	yes	no
Brazil	low	yes	yes	n/a	Non-specific	yes	yes	yes	yes	n/a
Russia		yes								
India	low	yes	yes	n/a	yes	yes	yes	n/a	yes	n/a
China	n/a	yes	no	n/a	Non-specific	n/a	n/a	n/a	yes	n/a
Indonesia	medium	yes	yes	n/a	yes	yes	no	yes	yes	n/a
Philippines		yes	yes	no	yes	yes	yes	yes	yes	yes
Mexico	n/a	yes	yes	no	yes	yes	yes	yes	yes	yes
Cambodia		yes								
Colombia	low	yes	yes	yes	Non-specific	yes	yes	yes	yes	yes

Source: World Economic Forum, 2011, The Mobile Financial Services Development Report 2011

Despite the many dissimilarities among the countries studied in this paper and their situations, policy makers and regulators in those countries share a common challenge: how to formulate proportionate regulatory policy that gives space for innovation and permits branchless banking to scale up safely. In many cases, poor customers lack certain documentation such as identification cards or proof of residence that is necessary to comply with anti-money laundering (AML) and combating the financing of terrorism (CFT) regulation i.e. AML-CFT customer identification requirements. AML/CFT precautions increase costs and, thus, may discourage providers from serving smaller clients. There is a compelling argument that, below certain thresholds, risks for low-value transactions and accounts aren't serious enough to require full-scale AML-CFT measures.

Some of the countries studied have amended the rules for low-value transactions or accounts, to strike a balance between the need for effective AML-CFT regulation and the need to ensure poor customers are not excluded from access to financial services as a result. While branchless banking is still a relatively new phenomenon, only Colombia has developed proportionate regulatory frameworks that provide space for innovation while minimizing key risks. Other countries have no formal frameworks although the central banks are working with MNOs to provide financial access. In the Philippines, for example, the Central Bank has

worked with mobile network operators to permit the nonbank-based model to take off. Similarly, Brazil has nearly a decade of experience with the bank-based model.

The National Bank of Cambodia (NBC) is supportive of WING and granted permission for WING to operate, while regulation for mobile payments is being drafted. Currently the NBC is working with the IFC to develop a regulatory framework on mobile payments. Furthermore, in Indonesia, nonbanks are allowed to issue e-money, but current regulations restrict the use of e-money to retail purchases. E-money providers wanting to offer P2P services need to apply for a remittance license while neither banks nor nonbanks can provide financial services through agents. Banks cannot outsource KYC compliance to agents; this limits customer acquisition beyond bank branches.

8. Conclusion

It is very clear that the unbanked population does not necessarily mean they are unbankable. In his words, Bill Gates who plays a large role in the branchless banking industry said “banking is necessary but banks are not”. Following an analysis of the existing branchless banking initiatives, the telco led model seems to be the more effective compared to the bank led model. Accessibility and availability appear to be very good compared to bank led model which is dependent on agent partners. Furthermore, the simple use of mobile phones compared to ATMs makes the telco led model more appealing to the targeted market. Regulatory compliance is also a key factor, it easy to acquire a mobile phone and SIM card but a daunting exercise to open a bank account because banks require a lot of documentations as supporting evidence of one’s existence and dwelling address. The support structure given by MNOs to customers is more easier compared to banks where the general impression is that a bank aims to makes money out of customers instead of serving. MNOs do not require customers to always have a minimum airtime whereas banks require a minimum balance to keep bank accounts active.

The telco led model of branchless banking brings new distribution channel for business applications such as:

- Payroll for banked and unbanked workers
- Improve bill payment services for banked customers

- Bill payment consolidation for utilities, insurance companies
- Point-of-Sale transfers from merchant wallet to bank account

This type of banking will also increase availability of financial services to all citizens of the world especially the unbanked population. A guaranteed benefit would be an increased international remittance through formal channels, at lower costs, improved efficiency and safety. The greatest challenge to overcome is the security of financial transactions being executed from some remote location and transmission of financial information over the “air”.

The following aspects need to be addressed to offer a secure infrastructure for financial transaction over wireless networks:⁴⁵

- Physical part of the hand-held device. If the bank is offering smart-card based security, the physical security of the device is more important.
- Security of any client application running on the device. In case the device is stolen, the hacker should require at least an ID/Password to access the application.
- Authentication of the device with service provider before initiating a transaction. This would ensure that unauthorized devices are not connected to perform financial transactions.
- User ID / Password authentication of bank’s customer.
- Encryption of the data being transmitted over the air.
- Encryption of the data that will be stored in device for later / off-line analysis by the customer.

⁴⁵ http://en.wikipedia.org/wiki/Mobile_banking

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