

IMPROVING ACCESS TO FINANCIAL SERVICES THROUGH MOBILE FINANCIAL SERVICES

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1. Theoretical Framework Analysis: Proposed Distribution Model of Microfinance Services Based on Prepaid Platforms and Cellular Technology (Mobile Financial Services)

1. Introduction

This document proposes a model based on prepaid electronic payments systems and cellular technology (Mobile Banking) that addresses the lack of access to financial services in the vast majority of developing countries. The proposed solution assumes that the lack of access to financial services is primarily a supply problem. The business models used by financial institutions operating in developing countries are inadequate and inefficient because they cannot service low-income segments profitably. In order to solve this supply-side problem and to be able to service low-income segments profitably, new microfinancial service distribution models need to be developed at low costs.

The importance of solving the problem of the lack of access to financial services in developing countries is clearly illustrated by the relation between development in the finance sector and the country's economic development. This relationship has been empirically proven in a number of studies that show a high correlation between increases in the rate of financial deepening, measured as the percentage of credit with respect to the Gross Domestic Product or the number of loans per capita (Beck, Demirgüç-Kunt, Martínez Peira, 2005), and increases in GDP per capita.

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An extensive number of economic studies demonstrate that there is also a causal relation between financial deepening and economic development. This causal relation was first proposed by Schumpeter (1911), but more recent studies have corroborated it. A significant portion of these studies has concentrated on the impact of the banking sector and thus bank credits on economic growth. King and Levine (1993), Demirgüç-Kunt and Loayza (2000) showed that bank credit is the explanatory variable in economic growth, especially in countries with underdeveloped capital markets.

In countries with higher levels of development and financial deepening, the impact of the development of capital markets is a second explanatory variable for economic growth. Nevertheless, Levine and Zervos (1998), Levine (1991), Bencivenga and Smith (1991) and especially Rojas-Suárez and Weibrod (1994) show that the impact of financial deepening on economic growth is much more limited in developing countries where capital markets are not efficient because they lack a properly developed banking sector.

A third approach explains economic growth not only in relation to the development of the banking sector, but also to its stability in the provision of financing as an explanatory variable on levels of economic development. This approach is especially relevant for the Latin American case as shown by Freixas (1997), Rochet (1997), the Inter-American Development Bank (2005) and Garrido (2005). The volatility of financial systems is particularly high in Latin America, where almost all the countries in the region have gone through major financial crises that have had severe negative impacts on the economic welfare of the population.

2. The Problem of the Lack of Access to Financial Systems in Developing Countries

The low levels of financial deepening make economic growth difficult; according to Beck, Demirgüç-Kunt, and Levine (1999), in the 24 most developed countries between 1990 and 1999, the average credit to the private sector as a percentage of GDP was 84%, compared to 33.6% in the 79 developing countries analyzed. The problem in some of the developing countries analyzed is not only that the credit markets are too small, but also that they are too small given their degree of economic development.

Table 1

Financial development by region, 1990-1999¹

Region	Number of countries	Private sector credits (percent of GDP)	Credit and market capitalization (percent of GDP)	GDP per capita, 1995 (US\$)
Developed countries	24	84	149	23,815
East Asia and Pacific	10	72	150	2,867
Middle East and Northern Africa	12	43	80	4,416
Latin America and Caribbean	20	28	48	2,632
Eastern Europe and Central Asia	18	26	38	2,430
Sub-Saharan Africa	13	21	44	791
Southern Asia	6	20	34	407

Other measures apart from macroeconomic indicators also point to the lack of financial deepening. According to Beck, Demirgüç-Kunt, and Martínez Peira (2005), there is an average

¹ Inter-American Development Bank, IPES 2005.

of 470 loans and 2,197 deposits for every 1000 people in ten selected countries in Western Europe; in five selected countries in Africa, there is an average of 30 loans and 146 deposits for every 1000 people.

The lack of access to financial services is principally due to an inadequate supply of financial services to low income segments and small and medium enterprises. This inadequate supply is explained by the high prices of financial services, expensive distribution networks with low capillarity, and the use of risk methodologies that have not been adapted to the realities of developing countries. Moreover, the regulatory frameworks observed in the majority of developing countries do not favor the emergence of efficient models of financial services distribution.

- Expensive financial services and inefficient banking systems in developing countries

Low levels of financial deepening are highly correlated with the financial margin that banking institutions charge to their clients. During the period of 1995 to 2002 this financial margin – calculated by dividing financial income by the average portfolio – increased as the ratio of credit to the private sector over GDP decreased.

One factor that explains the high financial margins charged by financial institutions in developing countries is the low level of operational efficiency in these institutions. This indicator, measured by the ratio of operational costs over total assets, is positively correlated with financial margins (Mathieson et. al., 2001); that is, high financial margins correlate with high (negative) rates of operational efficiency.

Table 2

Interest rates differences and efficiency by region, 1995-2002²

Region	Number of countries	Interest rate differences (percentage)	Operational Costs (percentage of assets)	Private sector credit (percentage of GDP)
Sub-Saharan Africa	32	10.6	5.1	15
Eastern Europe and Central Asia	23	8.8	5.0	26
Latin America and the Caribbean	26	8.5	4.8	37
East Asia and Pacific	16	5.1	2.3	57
Southern Asia	5	4.6	2.7	23
Middle East and Northern Africa	13	4.0	1.8	38
Developed countries	30	2.9	1.8	89

The above table shows that inefficient financial systems are common in all developing countries, but more so in Sub-Saharan Africa (5.1%), Eastern Europe (5%) and Latin America (4.8%). The Middle East and Northern Africa have operational efficiency rates similar to those of developed countries, notwithstanding great variations among the countries in those regions.

² Inter-American Development Bank, IPES 2005. Data from IMF and Bankscope.

The lack of competition in the local financial systems also explains the high costs of financial services. Finally, the short-term value strategies followed by financial institutions in developing countries set selection criteria that discriminate against low-income segments of the population (Ruiz Durán, 2004).

A value-management client strategy is defined by the level of service a client receives vis-à-vis the economic profit he or she will generate for the financial institution.³ In developing countries, a client's value is determined by the margins generated by the financial institution from each of its clients.⁴ By applying such a strategy, only a reduced portion of the population has enough positive profit potential to be provided with financial services profitably. The pervasiveness of negative profitability is fundamentally explained by the low levels of assets and liabilities of customers in developing countries; nevertheless, high operational costs also contribute negatively to the financial institution's outlook of a client's worth.

- Low density of financial institutions' networks

The low density of bank branches is another cause for low levels of banking access in developing countries; this problem is mainly due to the fact that the greater part of a financial institution's potential clients can not generate sufficient income to cover the costs of traditional bank branches. Furthermore, operation costs are higher in developing countries than in developed countries because of added security costs and inefficient infrastructures.

Table 3

Density of bank branches and financial deepening⁵

Geographic Area	Number of Countries	Bank branches per 100,000 people	Bank branches per 1000 Km²	Number of loans per 1000 people	Number of deposits per 1000 people
Eastern Europe	10	44.66	61.25	470	2,197
Asia	10	8.13	18.57	110	715
Western Europe	9	7.39	6.83	87	1,040
Latin America	17	7.02	5.20	120	490
Africa	5	2.06	0.57	30	146

The low number of bank branches per 100,000 people in developing countries, shown in Table 3, is explained by the low economic value of their population for the financial sector. The value segmentation strategy previously mentioned is not only applied at the customer level, but also at the branch level. Therefore, if the customers served by a branch do not generate enough revenue to cover the branch's costs and make a profit, then the branch is closed. The number of branches per square Km in developing countries is significantly lower than in Western European countries. The low economic value of the population living in rural areas is reflected by their lack of banking outreach. This lack of outreach reflects deficient communication infrastructures which, compounded by security problems, restrict economic growth.

³ This strategy is the foundation of the commercial strategies based on Customer Relationship Management (CRM).

⁴ In developed countries, future flows are included, based on a model of client behavior using age, personal and professional situation, developed by the more advanced institutions and based on their CRM.

⁵ Calculations based on data from Beck, Demirgüç-Kunt, and Martínez Pereira, 2006.

Within developing countries there are important differences in the density of banking networks in regions or areas with greater purchasing power and those with less purchasing power. These differentials are present in urban as well as rural areas; consequently, it can be concluded that there is a high correlation between the income level in a certain area and its density of bank branches.

- Inappropriate credit risk analysis methodologies

The processes of banking credit risk analysis in developing countries are based on the analysis of the expected cash flows of the customer requesting a credit. Financial institutions also marginally consider other variables that allow them to adjust their expectations of clients' delinquency; these variables involve ties with the financial institution and socio-demographic indicators. The determination of the expected cash flows is based on the customer's net income, which is compared with the expected credit payments in order to establish his or her payment capacity.

In the case of salaried customers, the analysis is based on their salaries, and, in the case of non-salaried customers, it is based on their declared obligations to the tax authority. Given the importance of the informal sector, basing credit decisions just on these data presupposes a great problem to those who generate their income in the informal sector since they are not able to document their payment capacity and hence are unable to access credit.

The second type of variable included in the process of credit analysis is related to the customer's ties to the institution. These variables measure the customer's relationship with the financial institutions using as indicators the number of products contracted, the value of the business generated by the client, the customer's profitability, and his or her payment and delinquency history. In societies with high levels of banking access, these variables are representative; however, in developing countries, banking access levels are low and this information only applies to a very small percentage of the population, while the rest of the population has its creditworthiness assessed using variables that prevent customers from accessing credit.

The third type of variable involved in risk analysis is socio-demographic indicators such as age, marital status, place of residence and number of children. Considering the easier accessibility to this information, assigning a higher weight to socio-demographic indicators in the risk analysis would imply easier access to credit. The increase in credits should not translate to higher delinquency if the appropriate weights are assigned and validated by public databases⁶ that measure the credit history of this type of client.

The low levels of access to credit in developing countries, then, is explained by the excessive weight given to professional variables and ties with the financial institution. Since these are databases limited to a small sector of the population due to the size of the informal sector and low banking-access levels, risk analysis decisions are negative for a large segment of the population. It is necessary to reevaluate the sources of information for risk analysis in order to include the large informal economies that exist in developing countries. Another option is to assign a higher weight to socio-demographic indicators in the risk analysis decision; although this change would require the development of internal mechanisms to track delinquency by socio-demographic profile, and external mechanisms (credit bureaus) to increase the access to credit while keeping delinquency rates under control.

⁶ Credit registers or credit bureaus are public access databases of public or private property.

- Inappropriate regulatory framework

The regulatory framework of the microfinance industry in developing countries is highly fragmented and convoluted, which leaves many institutions operating outside it. Additionally, this context does not allow for the emergence of networks that could benefit from positive synergies – a fundamental element in the development of the sector.

Reforms aimed at formalizing the microfinance sector in developing countries are not mature enough for their impact to be analyzed. Nonetheless, developed countries that have implemented these types of policies successfully, such as Spain, Germany and Canada, showed a positive impact on economic growth from the provision of financial services to low-income segments of the population.

In addition to an inappropriate framework, regulatory costs are too high in terms of provisions, reserves, security, and other requirements. These requirements elevate the costs of providing financial services to low-income segments. Equally important, high regulatory costs prevent micro-financial institutions from being properly regulated (Klaehn, Helms, and Deshpande-CGAP, 2005).

Table 4

Secure Property Rights and Financial deepening⁷

Region	Property rights index	Private sector credit/GDP (%)
Developed Countries (OECD)	6.3	84
East Asia and Pacific	5.0	72
Middle East and Northern Africa	3.9	43
Latin America and the Caribbean	4.5	28
Eastern Europe and Central Asia	5.5	26
Subsaharan Africa	4.2	21
Southern Asia	3.8	20

Another regulatory element explaining the low financial deepening in developing countries is the scarce enforcement of property rights. The table above compares the World Bank's index of property rights enforcement by geographic region to the degree of financial deepening. The relationship between secure property rights and financial deepening is obvious, and shows that countries with greater financial deepening have a higher index of property rights.

3. Proposed Model Based on Prepaid Electronic Payments Systems and Cellular Technology (Mobile Banking) for the Distribution of Microfinance Services, in Order to Address the Lack of Financial Services in Developing Countries:

The causes analyzed explaining the low levels of banking access in developing countries need solutions that address the high costs of financial services, the scarce banking density, the inappropriate risk methodologies and the inadequate regulatory framework.

⁷ Getting Credit, www.worldbank.org

The low density of bank branches and the high prices of financial services have to be addressed with a strategy that generates new business models to distribute low-cost financial services and thus increases competition in the sector. On the other hand, the low efficiency of the current risk analysis methodologies needs to be addressed by the creation of new institutional and methodological processes that include the informal economy.

In addition, the growing importance of migrant remittances in developing countries, particularly for low-income segments, demands a distribution model of low-cost services that optimizes the impact of these remittances (Prior, 2006). Finally, the banking processes proposed require large technological and organizational structures. In the microfinance sector, this scale can be easily attained through network structures with a coordinating node to provide central services (nodal network structure).⁸

As a result, the proposed distribution model of financial services is structured into five elements: low-cost financial products (prepaid electronic products), low-cost intermediation networks based on cellular technology, alternative risk-analysis methodologies, optimization of the impact of workers' remittances, and a nodal network structure. The following subsections introduce these elements as well as the best practices that can be applied.

3.1. Low-cost financial products: prepaid electronic methods of payment

Electronic payment methods are the foundation of the model proposed. First, they allow for efficiency improvements; second, they enable the use of low-cost distribution channels; third, they allow the implementation of credit-risk tracking systems that would decrease delinquency rates; fourth, the technological platform that supports electronic banking would generate important synergies with the business of remittances; finally, the economies of scales achieved through the use of electronic banking products would make the creation of a nodal network system possible.

The savings that financial institutions obtain from using electronic payment methods allow them to offer low-cost financial services profitably. These savings are especially important for financial institutions operating in developing countries where efficiency ratios are much worse than in developed countries. Low efficiency costs constrain financial institutions to charging high prices in order to reach their equilibrium point, hence making massive 'bancarization' difficult in developing countries.

The following table shows the evolution of electronic payment methods in the eleven countries in the Euro zone and England between 1992 and 2000. During this period, the proportion of electronic payments increased by 41% with respect to total non-cash payments. Additionally, total non-cash payments increased by 40% vis-à-vis total payments in these twelve economies. The increase in the importance of the number of electronic payments is accompanied by an increase in the efficiency ratio of financial institutions in these twelve countries.

During the same period, operational costs (the percentage of total costs over total assets) decreased by 20%. Nevertheless, this improvement in efficiency cannot be attributed only to the percentage increase in electronic payments, in spite of the fact that transaction costs decreased by 49% due to the greater use of electronic payment methods (Humphrey, Willeson, and

⁸ A scheme similar to one existing in Spain in the context of the Spanish Confederation of Savings and Loans: Gardener, Lolyneaux, Bisoni, Cosma, Carbó, López del Paso, and Rodríguez Fernández, 2002.

Lindblom, 2003). Studies done in Spain and the United States estimate that the total cost of a check payment is two to three times higher than the transaction cost of an electronic payment (Carbó, Humphrey, and López del Paso, 2002). Additionally, a 2000 Belgian study (De Grauve, Buyst, and Rinaldi, 2000) argued that the transaction cost of a card payment was nine times lower than that of a cash transaction. Both studies analyzed the total cost of payment transactions for the whole economy taking into account banking costs, commercial costs, central bank costs, and the costs of the regulatory body in charge of payment supervision. These studies concluded that the use of electronic payment methods save an economy that migrates all of its cash payments to electronic payment methods up to 1% of GDP (Humphrey, Willeson, and Lindblom, 2003).

Table 5

Evolution of the importance of electronic payments compared with the operational efficiency rates between 1992 and 2000 for countries in the Euro zone and the United Kingdom⁹

	1992	1994	1996	1998	2000	Var (%)
Non cash transactions per capita	97	105	112	125	136	40.21%
(%) Electronic transactions/non cash transactions	56.00%	63.00%	68.00%	75.00%	79.00%	41.07%
(%) Operational costs/Total Assets	2.00%	1.80%	1.70%	1.60%	1.60%	-20.00%

Other factors, such as the use of low cost channels instead of bank branches, also explain the evolution of the efficiency rate. Even so, the high correlation between the increase in electronic payments and the decrease of operational costs ($R^2 = 92.98\%$) reflects the importance of electronic payments for European financial institutions trying to improve their efficiency rates.

In addition, electronic payment methods allow a more efficient segmentation of the population, especially the lower income segments. The products used in electronic banking make it possible to use commercial instruments that are more efficient than those traditionally used by commercial banks.

The electronic payment business model is the one that is traditionally followed by issuers of electronic payment methods, predominantly credit cards. Nonetheless, the products offered by these issuers are not limited to consumer credit, but include most of the financial needs of the unbanked. A review of the product catalog offered by the operators of electronic banking¹⁰ shows us this diversity of supply.

3.2. Low cost financial intermediation networks based on cellular technology

The cost of the intermediation networks is, together with transaction processing, an explanatory variable in the operational cost function of retail banking institutions (Carbó, Humphrey, López del Paso, 2004). The use of low-cost networks decreases operational costs, hence improving the efficiency rates of financial institutions.

⁹ Carbó, Humphrey, and López del Paso, 2004.

¹⁰ Review available at www.mastercard.com, www.visa.com.

The problem with the low density of bank branches in developing countries is based on the fact that the business model followed by banks does not generate enough income to cover the high costs of traditional bank branches (Caskey, 1993). Part of the solution is to generate low-cost products that can be distributed in these branches profitably. Another solution is to create or use low-cost financial intermediation networks that do not require high-income clients in order to reach the equilibrium level in their banking business.

In Europe, the improvement in efficiency rates has run parallel with a relative increase in automated bank tellers with respect to traditional bank branches. The table below shows the compared evolution of efficiency rates of European banks and the importance of ATM with respect to bank branches. Both series show a high correlation ($R^2 = 86.15\%$) in the period 1992-2000.

Table 6

Evolution of the importance of ATMs versus bank branches, compared with the operational efficiency rate of financial institutions between 1992 and 2000 in the Euro zone and the United Kingdom¹¹

	1992	1994	1996	1998	2000	Var (%)
(%) Operational costs/Total assets	2.00%	1.80%	1.70%	1.60%	1.60%	-20.00%
Number of ATMs/number of bank branches	0.62	0.76	0.93	1.12	1.3	109.68%

Commercial banks in developing countries have already implemented low-cost intermediation channels such as ATMs in the context of multichannel strategies. A multichannel strategy within a business model is defined as a strategy that, besides bank branches, includes low-cost intermediation channels.

A World Bank study (Beck, Demirgüç-Kunt, and Martínez Peira, 2005) provides data from 51 countries that show the importance of the use of low-cost channels in financial deepening. The data in this study lets us correlate ATM density, per capita or by square Km, with the number of loans or deposits per capita. Moreover, we can compare this correlation level with the one obtained from comparing bank branch density with the same indicators of financial deepening. The results show the importance of developing low-cost channels to increase the rates of financial deepening. While the number of bank branches per capita has an R^2 correlation of 46.02% with the number of deposits per capita, the number of ATMs per capita correlates by 51.39% with the number of deposits per capita.

Table 7

Relationship between distribution networks and financial deepening¹²

Correlation Percentage	Bank branches per capita	Bank branches per Km ²	Number of ATMs per capita	Number of ATMs per Km ²
Deposits per capita	46.02%	15.27%	51.39%	5.53%
Credits per capita	26.04%	10.60%	33.97%	7.45%

¹¹ Carbó, Humphrey, and López del Paso, 2004.

¹² Beck, Demirgüç-Kunt, and Martínez Peira, 2005.

This table shows that density per capita is more important than density per Km², when we analyze its correlation with financial deepening indicators. We also observe that the density of the distribution network correlates to a higher degree with deposits per capita than with loans per capita; this is explained by the different credit risk analysis methodologies and their impact on the granting of loans, as we will see in the following paragraphs.

With regard to the first argument, the analysis by geographic area shows uneven results. The statistical correlation for the ten Western European countries analyzed, whose income levels are higher, differs from that of developing countries. Moreover, the correlation between ATM density per capita and bank branches with financial deepening levels is not significant. However, the correlation between the density of ATMs and, especially, bank branches per Km² with financial deepening indicators reaches R² levels close to 90%.

Despite the fact that these results contradict the results found for the total of the countries, they can be explained because the density by Km² does a better job at explaining the differences in financial deepening in highly banked societies since these differences are mainly due to differences in banking access in rural areas. The indicator that best measures the presence of financial institutions in rural areas is density per Km² and not density per capita.

In contrast, for countries with lower banking access levels, the more relevant indicator is the number of branches and ATMs per capita. The following table shows the same indicators for the countries analyzed in this study by geographic zone. The results show that in areas with lower financial deepening, such as Latin America and Africa, having dense distribution networks is fundamental.

Table 8

Relationship between distribution networks and financial deepening by geographic area¹³

Geographic area R ² Correlation	Number of countries	Bank branches per 1000 people	Bank branches per 1000 Km ²	Number of ATMs per capita	Number of ATMs per Km ²	Number of loans per 1000 people	Number of deposits per 1000 people
Western Europe	10	44.66	61.25	66.81	87.70	470	2,197
Deposits		0.56%	5.63%	0.27%	0.97%		
Credits		0.80%	86.68%	0.67%	84.58%		
Asia	10	8.13	18.57	9.40	13.65	110	715
Deposits		1.11%	10.04%	0.13%	0.89%		
Credits		4.83%	1.17%	38.13%	3.43%		
Eastern Europe	9	7.39	6.83	9.40	13.65	87	1,040
Deposits		10.17%	7.17%	30.30%	32.63%		
Credits		11.01%	13.32%	6.91%	21.77%		
Latin America	17	7.02	5.20	12.48	10.64	120	490
Deposits		26.37%	27.00%	49.77%	27.03%		
Credits		14.34%	0.60%	27.66%	0.81%		
Africa	5	2.06	0.57	3.48	0.59	30	146
Deposits		89.08%	10.18%	98.47%	0.77%		

¹³ Beck, Demirgüç-Kunt, and Martínez Peira, 2005.

It is especially relevant to have low-cost financial service distribution networks given that, in all of the geographic areas analyzed, their correlation with financial deepening indicators is higher than that of traditional bank branches. It is worth mentioning that ATMs are not the lowest cost intermediation channels; there are other technical solutions, such as the representative tellers used in Peru, that are even more efficient in promoting banking access.

Table 9

Cost comparison by intermediation channel¹⁴

Point of intermediation Financial Services	Estimated Cost (Thousand US\$)	Relative weight
Representative teller	5	1
ATM	35	7
Branch	200	40

Commercial banks in developing countries already make use of multichannel strategies, combining channels of higher and lower costs. These strategies involve the use of bank branches to commercialize products to the wealthier people in their societies. Telemarketing is used to commercialize electronic banking products to customers and non-customers belonging to mid-income levels of the population. ATMs are used to reduce transactions in branches although not to commercialize products. Finally, networks of agents and representative tellers are used to commercialize products to the lower income segments of society. Within these networks of agents, we include the commercialization of privately branded electronic banking products from certain shopping centers.

The use of electronic payment methods is required for developing low-cost intermediation channels, connected through wireless technology. It is not only that products are much more efficient in terms of cost, but also that they are required to use low-cost channels such as ATMs, representative tellers or commercial agents. Those representative tellers or agents can be even more efficient channels when wireless technology is used to connect them and when cellular hardware can be used to replace traditional POS or ATM infrastructures.

3.3. Alternative risk analysis methodologies

In the previous section on the causes of low banking access levels, risk analysis methodologies and the overwhelming use of professional and association variables were listed as important causes for the problem. The use of sociodemographic variables positively correlates with increases to credits placed,¹⁵ which is why giving greater weight to these variables in the risk methodology could increase credits placed.

In order to massively apply these variables there need to be analysis methodologies that are based on delinquency rates correlated with said sociodemographic variables. To use this information, there need to be databases that consolidate all of the credit histories from the creditors to all of the different financial institutions in the country. These information systems

¹⁴ Superintendencia de Bancos y Seguros del Perú, 2006.

¹⁵ Data gathered by the author based on the comparison of 10 credit analysis methodologies in Latin America.

are called central credit registers or credit bureaus; their development strongly promotes credit placements, not only in developed countries (Inter-American Development Bank, 2005), but also in other geographic areas where these institutions have appeared.¹⁶

Information centers help increase credits placed and provide greater information in the credit risk analysis, hence reducing delinquency rates (Barron and Staten, 2003). A study published by the Inter-American Development Bank estimated that financial institutions using credit registers show decreases in their delinquency rates. The study also showed that financial institutions having a larger concentration in the small and medium enterprise or consumer segments most benefited from using information from information centers. Additionally, the study concluded that the utility extracted from private registers is greater than that of public ones.

Private registers help to better forecast when credits will be unpaid thanks to the use of information sources that are not just bank related. These registers also include other payment sources such as water and power utilities and other sociodemographic variables such as age and marital status. This proves that the use of diverse variables that deal with payment histories and sociodemographics allows for the estimation of risk profiles without having to use economic variables. The following table comes from a World Bank study and shows the relationship between financial deepening as a percentage of private sector credit over GDP and the coverage of private risk centers.

Table 10

Development of risk centers and financial deepening¹⁷

Region	Index risk Information centers	Coverage public risk center (%)	Coverage private risk center (%)	Private credit (%)
East Asia and Pacific	1.9	3.2	10.1	72
Eastern Europe and Central Asia	2.9	1.7	9.4	26
Latin American and the Caribbean	3.4	7	27.9	28
Middle East and Northern Africa	2.4	3.2	7.6	43
Developed Countries (OECD)	5	8.4	60.8	84
Southern Asia	1.8	0.1	1.3	20
Subsaharan Africa	1.3	1.5	3.8	21

In addition, data obtained from a World Bank Study allows us to estimate how important it is to have a bank account in order to access credit in developed and developing countries. In this comparative study, we correlated the levels of financial deepening, measured in terms of deposits per capita and loans per capita. The statistical R² correlation results are greater in areas with low banking access levels such as Africa (99.7%) and Latin America (45.81%), while this correlation percentage is only 0.05% in Western Europe. These differences show how credit generation in developed countries does not depend on having a bank account with the

¹⁶ In the United States, the rating determined by a credit bureau is the fundamental determining element in the analysis of a risk operation.

¹⁷ "Getting Credit". www.worldbank.org.

institution, but more significantly on the analysis of other economic and sociodemographic variables.

A second strategy to follow in order to decrease delinquent portfolios and foment credit generation is to improve the tracking of payments and credit use. The idea is to use risk-tracking tools that permit the collection of the greatest amount of information from institutions' own databases based on methodologies that analyze their clients' behavior.

In order to do all this tracking automatically and not manually, given the higher cost of the latter, it is necessary to use information databases. This data collection process is made easier with the use of electronic payments that, by definition, have all the pertinent information stored in a database. Again, we see that electronic payment methods are fundamental in reducing transactional costs and strengthening low-cost intermediation channels; moreover, they enable the use of credit risk tracking methodologies that decrease delinquency and thus stimulate credit generation.

3.4. Optimization of the impact of workers' remittances

From a cost-and-revenue structure perspective of the model proposed, including workers' remittances into the model would generate important synergies between the remittance industry and the banking business. First, operational synergies would emerge from processes and infrastructures common to both industries, which would allow institutions to operate in both industries with lower operational costs. Second, income synergies would emerge for remittance operators with sufficient infrastructure to enable them to offer additional financial services to remittance recipients.

The first operational synergy to highlight is the one that refers to the common characteristics between the technological platforms for both the banking industry and the business of remittances. The technological infrastructure amounts to at least 30% of the operational cost for both businesses. The most important common infrastructures are databases and product applications. For product applications to be the same for both industries, financial institutions need to implement electronic payment methods. Therefore, the use of these kinds of products as the basis of the model proposed is reinforced by the operational synergies generated by the remittance industry.

The second most important synergy is the one that refers to the distribution network used by both industries. In both cases, the importance of the cost structure for both industries is very relevant, representing up to 40% of operational costs. The distribution networks for both industries are highly complementary. In fact, while the banking industry's network is based on its own branches, remitters base their network on non-financial agents in zones with scarce banking presence.

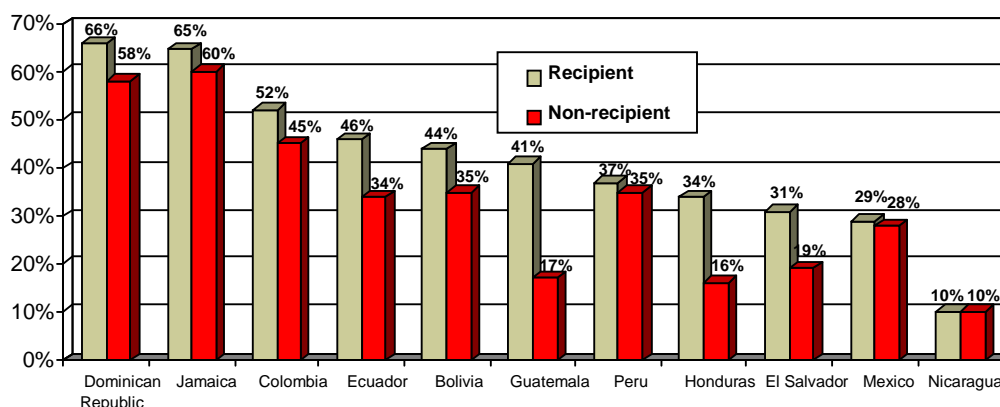
The third relevant operational synergy between the industry of money remitting and the banking industry refers to the implementation and management of telematic or alternative channels such as ATMs, telephone banking and internet. Services through telephone channels are fundamental for both industries. Any remittance needs a telephone call to transmit a secret number, which is why operators in the remittance industry need the services of a highly developed call center.

Income synergies are those that can be generated from banking remittances received. Receiving remittances in a bank account would allow the receiving financial entity to benefit from the

said flows of capital that presently are mostly distributed in cash.¹⁸ Nevertheless, as the following graph demonstrates, recipients of remittances are already more ‘banked’ than the rest of the population. This higher level of banking access is due to their greater financial education (MIF, 2006), as well as their higher demand for financial services.

Table 11

Comparison between banking access levels for remittance recipients and non recipients¹⁹



If the entities that operate in the remittance business were to receive these flows with a bank account instead of disbursing cash, the financial institutions doing this would automatically generate financial income over the deposits received. This income can be calculated as the difference between the costs of deposits and the real rate of return of public debt. Given that in the greater part of developing countries banking deposits are not remunerated, financial institutions would obtain an annual income over the average deposits captured from remittances equal to this difference.

The second income synergy for financial institutions that decide to bank remittance recipients is the generation of a credit income over the remittances received. To generate this margin, it is necessary to allocate credit backed by the remittances captured as deposits. This credit would be backed by risk parameters kept in the databases of financial institutions that deal in the business of remittances. These parameters of credit risk analysis such as the importance of remittance income for the receiving family unit, the profile of the remittance issuer, and the continuity of the flow of remittance, are variables that, if known, should ensure low delinquency rates.

3.5. Nodal network structure

The banking processes and practices outlined above as elements of the proposed model require important technological and organizational infrastructures. These investment requirements make it difficult for small microfinance institutions to implement such a model because they lack the required scale. Creating scale economies in the process of financial intermediation has traditionally been based on increasing the size of the financial institution. The following graph presents a comparison of cost structures vis-à-vis the bank’s asset size. The results of this

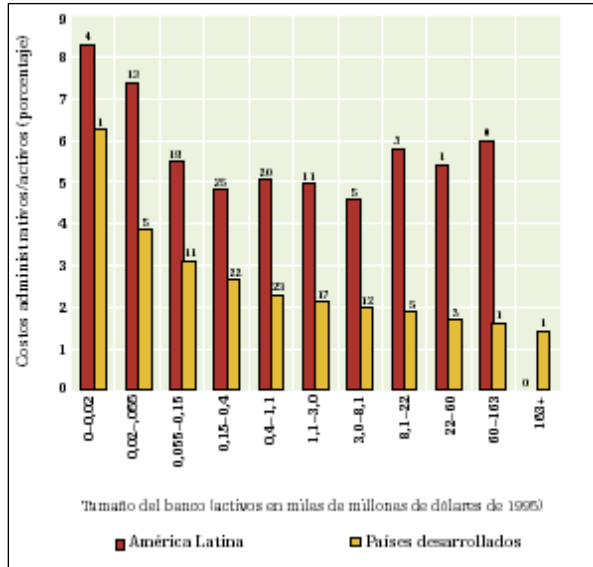
¹⁸ It is estimated that 90% of the remittances between the United States and Mexico follow this path.

¹⁹ Orozco, 2006.

comparison show that the higher the amount of a bank's assets, the lower the administrative costs as a percentage of assets. Therefore, these results show the existence of scale economies in financial intermediation by increasing the size of the institution.

Table 12

Administrative costs and bank size in Latin America and Developed countries, 2001²⁰



Notwithstanding, this graph also shows that these scale economies are less relevant for Latin America than for the developed countries analyzed. While scale economies still persist after US\$8 billion in developed countries, in Latin America they disappear once this size is reached. This different behavior, which in the Latin American case implies that costs positively correlates with asset size after US\$8 billion, can be explained by the lack of adequate infrastructures and regulatory framework (Inter-American Development Bank, 2005).

The problem of finding the right scale for a given financial institution was also analyzed by a study done by the Spanish Foundation of Confederated Savings and Loans (Gardener and Molyneux, 2002). This study looks at the effect that different existing financial models have on credit allocated with respect to total assets in three European countries. The conclusions argue that savings institutions have a higher tendency to generate credit because of their proximity to and knowledge of their clients. This proximity is negatively correlated with scale, which implies that the bigger a financial institution, the lower the percentage of credits over assets they will have.

The solution proposed is to create a network of institutions that share a series of common elements provided by a central node, and hence generate scale economies on these common investments. The common elements would be a common technological platform with product applications and databases, a risk analysis infrastructure, and other functionalities to provide financial services to low-income segments. However, each entity would be independent, with its own balance and its own distribution network, which would ensure its proximity to the client and thus greater credit generation.

²⁰ Inter-American Development Bank, IPES 2005.

The common services provided by the central node to the savings institutions need to be charged at competitive prices to the institutions in the network. They, for their part, need to choose whether to buy these services from the central node, provide them internally or buy them from a third party. This freedom to choose allows for the continuation of competition within the system.

2. Regulatory Review of Electronic Stored Value or Prepaid Systems and Agents

2.1. Review of Electronic Stored Value / Prepaid Systems in the United States

1. Introduction: Review of Card Systems

The emergence of card systems is one of the major drivers that explain the development of electronic retail payment systems. Cards can be used for basic payment functions such as cash withdrawals at ATMs and EFTPOS (electronic funds transfer at point of sale), where cash-back is offered, and purchases at retailers with EFTPOS. EFTPOS can be physically located at a store where the payment is made, or located in a remote location (virtual EFTPOS). Virtual EFTPOS allows for additional payment functions such as bill payment, internet purchases or direct debits. However, depositing cash in a card (Cash in function) is limited to stored value (prepaid) cards, and depends on the regulation of both stored value cards and e-Money.

The objective of this chapter is to analyze how stored value cards could be the basic element for a payments architecture that would allow not only withdrawals (at ATMs and EFTPOS with cash-back function), and purchases at EFTPOS, but also cash deposits. This payments architecture, coupled with the other elements of the general framework presented in Chapter I and distributed using cellular technology, could form a model for the distribution of microfinance services aimed at banking the poor.

Card payment systems can be classified according to the way transactions are authorized and authenticated: First, whether the transaction is authorized using a line of credit, the actual value of deposits in the bank account (debit) or the amount of e-Money in an internal account (prepaid). Second, whether the transaction is only authorized when the acceptance network is online or also when the system is offline. Third, whether the transaction is authenticated by inserting the personal identification number (PIN) or by signing the receipt (either physically or electronically).

Table 2.1

Types of card products based on authorization and authentication mechanisms

	Credit	Bank account balance	Internal account	Online	Offline	PIN based	Signature based
Prepaid			Yes	Yes	Only if PIN based	If POS enabled, always in ATM's	If POS not enabled
Debit online		Yes		Yes	For very limited transaction amounts	If POS enabled, always in ATM's	If POS not enabled
Debit Offline	Yes				Yes	If POS enabled, always in ATM's	Yes
Credit	Yes				Yes	If POS enabled, always in ATM's	Yes

These three characteristics determine the types of cards currently available and their payment functions. Credit cards were the first type of cards issued in the United States. This product allows credit card holders to buy products or services at retailers with EFTPOS for an amount less than or equal to the card's credit limit. Additionally, this type of card can be used when the EFTPOS is offline, as long as the transaction does not exceed the value determined for this type of transaction (this maximum value or back-up parameter is usually large enough to allow for the necessary expenses when the customer has no access to an EFTPOS online). The authentication mechanism for credit card transactions at EFTPOS has traditionally been signature-based. However, in some countries such as France and increasingly worldwide due to the EMV initiative, EFTPOS requires authentication using a PIN number. The authentication mechanism for credit card transactions at ATMs is PIN based. Cash-back at EFTPOS is not currently available for credit cards in the United States.

Online debit cards were issued later by financial institutions, mostly in Western Europe but also in other regions of the world. In the United States its deployment has been slower, due to the importance of offline debit, although this is changing progressively. Online debit cards were originally marketed as ATM cards, to allow cardholders to withdraw money from their bank accounts. As a result, every debit card transaction has to be authorized by verifying online the monetary value of the bank account linked to the debit card. Transactions will be accepted if the amount of the transaction is not higher than the monetary value of the bank account (in some cases including its overdraft limit). Debit cards are also currently being used to buy products or services at retailers with EFTPOS, although for those transactions to be approved, the EFTPOS has to be connected online through its switch to the core banking platform of the issuer. If it is not online, some issuers in some countries provide back-up parameters to allow microtransactions while the EFTPOS is offline (less than 50 Euros²¹). In the United States, the authentication mechanism used for online debit is PIN based, which allows the cash-back function to be more widely developed. In other areas of the world, however, online debit authentication is signature-based, which does not support the development of the cash-back function.

²¹ Amount defined by Porteous (2006) as the limit for microtransactions.

Offline debit is a product mostly developed in the United States and it is still predominant in terms of debit cards in that country.²² However, due to the legal process launched by Wal-Mart in 2003,²³ its importance has decreased considerably over the past years. Its main difference with online debit is that the type of EFTPOS terminals that accept this product are not connected to the core banking system of the issuing bank, but instead are connected to the credit payment networks of Visa and MasterCard. As a result, the authorization mechanism used verifies the credit limit that both payment networks have recorded in their authorization databases. This credit limit is calculated every few days based on the information provided by the issuer in terms of the monetary value of the cardholder's associated bank account. However, it does not reflect the exact value online and therefore generates an overdraft risk for the issuing institution if the cardholder spends more than the monetary value of the bank account. The rest of the offline debit features are similar to credit cards, since both products are marketed and accepted by the same payment networks. Summarizing, offline debit cards are credit cards (they have credit card BINS²⁴), but are payable by the cardholder the following day (or the number of days that the system takes to settle the transactions).

Stored value cards or prepaid cards are the latest type launched by card issuers. This product allows cardholders the same payment functions as online debit, but with the main difference that the transactions are not authorized by verifying the monetary value of the associated bank account; instead the authorization process is based on the monetary value of the internal account to which the prepaid card is linked. This monetary value is gathered in a database that manages this type of internal or prepaid account. The legal definition of prepaid accounts is one of the most important topics that this analysis will cover, as well as the additional functions that these types of accounts could have if the appropriate regulatory framework were applied. The ultimate goal of this study is to analyze how stored value cards could be used to collect deposits in a payments architecture where any EFTPOS, ATM or any other terminal connected online to the payments systems could perform this function for any given issuer. However, in order to achieve this goal, a basic understanding of how prepaid systems currently work is required, and this is provided next.

When a consumer buys a product or a service using a prepaid card from a merchant, either at a physical store (physical EFTPOS) or from an online retailer (virtual EFTPOS), the customer swipes or inserts the card in a physical EFTPOS terminal, or inserts the card number in a virtual EFTPOS terminal online. The EFTPOS establishes a secure protected connection (Secure Sockets Layer- SSL) with the server of the prepaid service provider (PSP). The server authenticates the customer by using either a PIN or a signature – physical or electronic – and checks the amount of funds available in the prepaid account (value of the prepaid account) in order to approve the transaction. The PSP sends the information to the merchant regarding whether the transaction has been approved or declined; if approved, the PSP credits the account of the merchant (only for accounting purposes) and debits the account of the consumer. Once the transaction is approved, the merchant confirms the purchase and provides delivery details if the transaction is online.

At the end of each day, the merchant sends the PSP the total amount of transactions approved, and the PSP settles the payments the following day (or the number of days agreed in the

²² The Federal Reserve Payments Study, 2004.

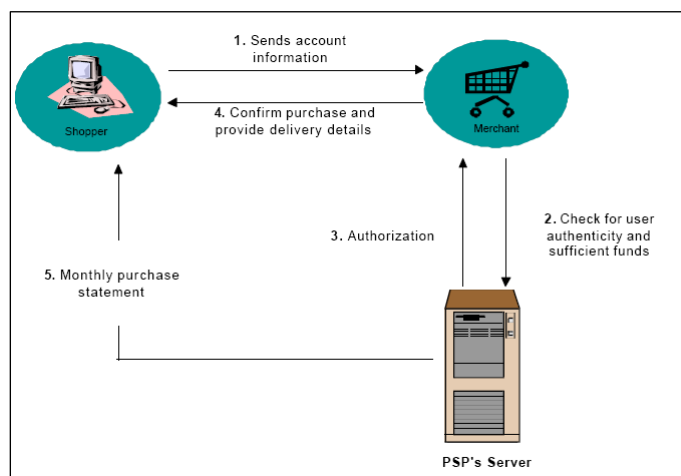
²³ Barr, M., "Banking the poor," The Brookings Institution, Washington D.C., 2004.

²⁴ Card identification number.

contract) by crediting the merchant's bank account. The settlement account of the merchant cannot be its prepaid account since the regulator (when the regulator regulates e-Money or prepaid accounts) establishes purse limits that are usually too small for merchants. The consumer can load a prepaid account using a variety of systems that depend on the local legislation of e-Money. Usually, prepaid accounts can be loaded online or by phone, at a participating retailer, or at branches of the PSP, if it has any. Prepaid accounts allow also the consumer to withdraw cash from any ATM connected to the system, at POS with cash-back function connected to the system or at any participating retailer or branch of the PSP.

Figure 2.1

Processing POS Payments Using the Prepaid System²⁵



Prepaid platforms have characteristics that make them especially useful for developing low-cost payment systems:

1. Customers using prepaid systems do not need bank accounts, debit or credit cards.
2. Users do not need to develop or invest in new technologies.
3. This payment mechanism can be used in a number of platforms such as PCs, mobile phones, hand-held and set-top boxes.
4. It is a payment system specially designed for micropayments, microdeposits and even microcredits (Banco de Crédito del Perú, Tarjeta Solución Negocios).
5. They allow users to monitor cash-flow by receiving statements (some providers offer this feature online, others provide physical statements) or accessing balances through PCs, mobile phones, hand-held and set-top boxes.

²⁵ Chepe, 2003.

2. Should the Value of Internal Accounts Stored in Prepaid Cards be Considered e-Money?

Electronic money or e-Money is defined by the CPSS²⁶ as “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.” This definition is based on the legal definition of electronic money included in article 1 of the European Parliament and Council Directive 2000/46/EC.²⁷ This definition states that “electronic money shall mean monetary value as represented by a claim on the issuer which is: i) stored on an electronic device; ii) issued on receipt of funds of an amount not less in value than the monetary value issued, and iii) accepted as means of payment by undertakings other than the issuer..

According to this European Directive, e-Money issuers are to be lightly regulated since the systemic risks that their operations create in the system are relatively low. e-Money issuers are not allowed to allocate credit, and therefore are not affecting the money supply. In addition to this restriction, e-Money issuers have to invest funds collected in assets with no risk. As a result, e-Money issuers can only issue electronic methods of payment to be used in networks where e-Money is accepted.

Although the European Directive on e-Money was intended to promote innovation through the establishment of a new type of lightly regulated financial institution called “e-Money issuer,” the results have not been successful. According to a 2006 evaluation study prepared for The DG Internal Market of the European Commission by The Evaluation Partnership Limited,²⁸ this new legislation has not promoted the development of new e-Money issuers.

The CPSS states that e-Money includes both prepaid cards (sometimes called electronic purses) and prepaid software products (sometimes called digital cash). In the case of prepaid cards, the monetary value can be stored in a microprocessor chip embedded in a plastic card called a “smartcard,” or be network-based using specialized software installed on a standard personal computer for storing the “value.”

Early studies of stored value products in the United States focused on those using chip-based (electronic purses) rather than magnetic-stripe-based technology (network-based cards) as potential catalysts for the emergence of e-Money. Lacker (1996) modeled chip-based cards (smart cards) as a replacement for currency and coin. However, the United States Congressional Budget Office later (1996) revised the potential for smart cards in the United States, and concluded that the market for such cards would be small in the near term.

Osterberg and Thomson (1998) and Chakravorti (2000) examined the question of why general-purpose smart cards had not developed a substantial market in the United States. These studies concluded that smart card issuers had not met the conditions necessary for a payment product to be successful, since both consumers and merchants needed to be simultaneously convinced of the product’s advantages over other products as well as of the product’s safety and security. As a result, the type of stored value cards that would come to dominate the industry in the United States were not smart cards, which keep information stored in microchips on the cards,

²⁶ CPSS, 2004: Survey of developments in electronic money and internet and mobile payments.

²⁷ OJL 275 of 27 October 2000, pp. 39-43.

²⁸ europa.eu.int/comm/internal_market/bank/docs/e-Money/evaluation_en.pdf.

but magnetic-stripe cards, which link to networks when consumers conduct transactions and thereby authorize these transactions online (Allen and Barr, 1997; Bradford et al. 2003).

In the United States, e-Money issuers are not regulated at the Federal level, but at the state level. United States regulators have not been so proactive in regulating e-Money issuers, and preferred to use and sometimes adapt the existing Money Services Business/Money Transmitter Regulations to allow innovation until the market matured. As a result, e-Money is not specifically defined in the United States as it is in Europe. However Money Service Business and, specifically, Money Transmitter Regulations are very similar to those required in Europe for e-Money issuers (ELMIs).²⁹

The stored value card market, especially “closed-loop” or gift products, has exploded in the last few years in the United States. While the overall number of cards in circulation remains relatively small, new cards are introduced into the market every week. SVCs are joining credit cards and debit cards in the race to turn cash into plastic. This chapter will analyze the experience of e-Money issuers in the United States within the context of a wider review covered in other chapters that includes Europe and the rest of the world. Each specific study analyzes cases of success and failure, so best practices can be found for the development of e-Money stored value (prepaid) platforms, the basic element of the proposed model for the distribution of microfinance services.

3. Stored Value Cards: How do they Work?

Stored value cards (SVC) use accounts to manage funds in real time through host computer systems. The accounts are held in a single concentrator account with different subaccounts for each card. Some are “pooled” accounts and some, for accounting purposes, are actual bank accounts held by the individual consumer, depending on how the issuing financial institution treats the accounts. These cards have the same POS and ATM functionality as regular debit and credit cards. However, SVC cards have the additional feature of being reloadable in a variety of ways at a range of locations. In this way SVC functionality closely resembles that of traditional bank accounts, and is therefore why they are the basis of the model proposed.

SVC systems operate in two ways. One is the “closed-loop” system, which can only be used for the issuer’s products or for limited purposes, such as prepaid gift cards at retailers such as Borders or Starbucks in a closed payment network.³⁰ The issuer and the merchant are therefore the same entity. The second one is the “Open-loop” system that offers consumers the ability to utilize their cards for multiple purposes, such as making purchases at a variety of stores or paying bills. These cards are accepted in payment networks open to multiple issuers, where merchants and issuers are different institutions. This open payment infrastructure is the basis of bank card systems and therefore currently used for debit and credit cards.

Closed-loop SVCs were first introduced in the early 1990s, and open-loop cards became available by the middle of that decade. Closed-loop SVCs were originally used as a payment instrument in retail stores (sometimes provided as a gift card), but are also extensively being used as a payment instrument in transport systems and mobile telecommunications.³¹ Originally, retailers and department stores developed this kind of system in order to avoid

²⁹ Evaluation of the e-Money directive by the Evaluation Partnership Limited.

³⁰ These kinds of closed system are also called private networks.

³¹ The use of prepaid systems by mobile telecom operators will be developed in Chapter III.

paying discount fees to merchant banks.³² Closed-loop SVCs do not belong to payment networks³³ and, as a result, are also called “non-branded cards.”

Open-loop cards offer consumers the ability to use their cards for multiple purposes in multiple locations and are, therefore, the equivalent of online debit cards for unbanked customers. Open-loop cards are accepted in open-branded networks such as Visa and MasterCard and therefore are called “branded cards”. MasterCard, Visa, American Express and Discover branded cards either signature- based or PIN-based authentication mechanisms. MasterCard and Visa branded SVCs currently dominate the market but Discover and American Express branded-SVCs are becoming widely available in the United States. Their competitive position might also strengthen in light of recent antitrust lawsuits levied against Visa and MasterCard. Discover, for example, purchased Pulse EFT Association, an Electronic Funds Transfer (EFT) network with over 4,000 financial institution members. This could have further implications on future branding for SVCs.

Open-loop SVCs can be grouped into three categories: First, payroll-only cards, which can be used only for direct deposit of paychecks or, in some cases, for receiving other automated clearinghouse (ACH) deposits, such as Social Security Payments. Second, reloadable payroll cards, which serve primarily as direct deposit cards for payroll checks but offer consumers other ways to reload the cards. Third, general purpose reloadable debit cards, which consumers can reload in a variety of ways at a range of locations.

Payroll-only cards were thought to be one of the most promising types of SVC products. However, they are generally only used for direct deposit of paychecks and other automated clearinghouse (ACH) deposits, such as Social Security or disability payments. Typically, SVC providers market payroll cards directly to employers, who then distribute the cards to their employees. Most SVCs do not currently work in a way that allows a single card to contain all levels of functionality, such as payroll, general spending, etc. Consumers who have payroll cards, for example, may not be able to or may not be aware that they are able to load other deposits besides payroll deposits onto their cards.

Many payroll cards are only set up to accept streams of direct deposits; manual reloads might not be available. However, some providers offer reloadable payroll cards. Integrating different types of SVCs and adding functionality, such as ‘reloadability,’ payroll direct deposit and bill payment, are important future innovations that would provide more benefits to consumers.

A few recent papers have examined the role of SVCs in serving unbanked and underbanked markets in the United States. Frumkin, Reeves, and Wides of the Office of the Comptroller of the Currency (2003) identified payroll card SVCs that can be used for the direct deposit of paychecks, without a required link to a bank account, as an innovative product for reaching unbanked and underbanked markets, and conducted a survey of financial institutions in the payroll card market. However, banks have not taken an active role in the market. They are still studying and trying to understand how payroll cards can be sufficiently profitable, by exploiting cross-selling opportunities with the unbanked.

The possibility of using SVCs for asset- and credit-building purposes was first raised by Seidman and Tescher (2003) in a paper discussing the convergence of the interests of the

³² Discount rates are paid to banks by retailers, when customers use bank issued cards to pay for goods at an EFTPOS Terminal.

³³ Branded networks such as MasterCard and Visa.

financial services sector and low-income consumers. Seidman and Tescher pointed out the growing prevalence of SVCs in low-income markets, and the need for greater consumer protections and functionality for these cards in order for them to truly mimic bank accounts.

SVCs could be a valuable financial tool for the unbanked population in the United States for several reasons. First, SVCs generally lack the identification and credit requirements that effectively bar millions of individuals from opening traditional bank accounts (Bair, 2006). Second, SVCs can be purchased and reloaded at a growing number of locations other than bank branches, such as check cashers, convenience stores, and other retailers; the ability to load cards in multiple ways at a variety of locations is the key to success for this product and therefore retail distributions are key to SVC providers (Barr, 2004). This is why they are pursuing partnerships with money-service businesses, convenience stores and other retail distribution channels to increase SVC users' reloading options. Third, SVCs can provide immediate availability of funds at a cost that is, in some cases, lower than some other alternatives for unbanked consumers. Fourth, SVCs are prepaid and difficult to overdraw, reducing the likelihood of unexpected fees. Fifth, many SVCs offer some sort of bill paying option, especially branded cards that enable signature-based transactions. Since many SVC users are unbanked, the functionality of paying bills without using checking accounts or money orders is important. However, most bill pay options for SVC users are online or in-person. Additional physical options are required, such as self-service bill pay at kiosks in retail locations, which could provide additional functionality for unbanked consumers (Intelecard News Online, 2004). Sixth, and finally, a significant number of SVCs offer remittances. This feature allows United States cardholders to transfer funds to authorized family members in other countries. SVC-based remittance features are structured in at least two ways. Sometimes, dual cards are issued to customers, and one of the cards is sent to a family member in another country to access funds from the sender's "account" via ATMs. Other cards allow cardholders to designate "subaccount" holders in other countries for the purposes of transferring money. In these cases, the subaccount holder has access only to the money that the primary account holder designates to share.

4. The Development of the Stored Value Card Industry in the United States

It is difficult to estimate the current size of the SVC market. Closed-loop gift cards are by far the largest market segment. However, no publicly available data sources on SVCs exist. Two consulting companies have estimated both the dollar volume loaded onto prepaid instruments and the number of prepaid cards in the market. Mercator Advisory Group estimated that the dollar volume loaded onto "prepaid instruments," including non-card prepaid instruments such as prepaid wireless telephone services, was \$157 billion in 2003. According to Mercator, the gift card and government program card segments were the two largest segments, with each accounting for 25% of the total. The third most important segment in terms of dollar volume loaded were the Payroll and other employee benefits cards, which accounted for 17% of the total, while general spending products accounted for 15%.

However, the Pelorus Group measured the market size based on the number of cards issued, counting card products only. In 2003, Pelorus estimated that the United States market of open-loop SVCs was 15 million "prepaid debit cards." This study estimated that general spending cards accounted for the largest share at 35%, followed by government benefit and child support

cards at 29%, payroll cards at 25%, and other cards such as flexible spending account cards at 11%.³⁴

An increasing number of companies are attempting to compete in the Store Value Card industry in the United States. Currently, the market includes hundreds of marketers, distributors, processors and issuers, and the number of cards and providers in the market has grown rapidly. MasterCard claims to have more than 200 different SVC programs with 100 issuers, and the company has seen double-digit increases in relationships with third parties and SVC processors in the last few years (Martin, 2004).

Given the various functions involved in offering SVCs – card issuance, transaction processing, funds management, customer service, recordkeeping – sorting out roles and responsibilities can be complicated. For instance, several banks have their own SVC programs in which they use third-party transaction processors, but many of them also serve as issuers for other non-bank SVC programs, which may use different transaction processors. A few SVC providers are vertically integrated, handling nearly all of the functions internally, while others outsource everything except sales and marketing. The majority of SVC providers outsource the transaction processing to one of the many firms that have developed special software platforms for running SVCs.

The major players in the United States market today include bank providers/issuers such as BankFIRST, Bank of America, Citibank and JP Morgan Chase; providers of reloadable prepaid debit cards such as Green Dot, NetSpend and Next Estate; SVC processors such as Metavante, StarSystems, WildCard and Galileo; providers of back-end services for SVCs, including ATM and POS processing, and Payroll firms such as Paychex and Comdata. The distinction between products distributed by financial institutions and those distributed by non-bank firms is an important one: products distributed by banks and credit unions are more likely to have additional consumer protections, lower pricing (because fewer actors are involved), and more obvious transitions into other financial products and services.

SVCs offer interesting opportunities for banks that see low-balance savings accounts as cost-prohibitive products. If the SVC industry can figure out a way to offer savings and other benefits to previously unbanked consumers, it would be a win-win proposition for customers and companies alike. As issuers, banks hold the funds underlying stored value cards in a variety of ways: some banks hold the funds off-balance-sheet, in fiduciary accounts; others hold the funds on the balance sheet in pooled accounts, perhaps in the name of the card's distributor or, in the case of payroll cards, in the employer's name; while still others provide individual deposit accounts in the name of each cardholder.

For large banks, interest in SVC products may be partly due to their greater involvement in the payroll card market than in the general spending market. SVCs are therefore sold to employers, who offer the cards to employees providing consumer protections similar to those enjoyed by traditional bank account holders. Payroll cards give banks data about customers that can then be used for cross-selling other bank products.

On the other hand, certain small regional banks, such as Central Bank of Kansas City and University Bank in St. Paul, have created new SVC programs that are intended to serve as entry-level products for consumers who might access additional bank services in the future. In

³⁴ Miezejeski, 2004.

another recent development, New York Community Bank, the fourth-largest savings and loan association in the country, has begun to offer SVCs in its branches. The Bank is marketing the cards as entry-level products, and is also marketing to customers who are denied checking accounts or who prefer prepaid instruments.

Non-bank firms are beginning to replace bank distributors as the most active actors in figuring out how to add enhanced features to SVCs that, as the marketplace matures, could provide increased service to lower-income consumers. Perhaps because of regulatory uncertainty, to be discussed later, or a more conservative approach to entering new markets, banks are lagging in innovation with regard to these products.

However, the most important challenge remaining for SVC issuers is to figure out a business model that assures profitability. Issuers do not currently know what features make products successful. However some facts are clear: First, large scale is needed in order to be profitable. Second, in order to develop a profitable SVC business model, customer relationship management strategies using data mining processes are required. These processes are already widely used in the credit card industry and therefore the synergies between credit card issuers and SVC issuers need to be exploited. SVC providers need to take into account how many cards are active in their system, how much money is loaded onto each card, how frequently the cards are used, the number of transactions occurring each month, and how much unspent money is left on unused cards.

SVC's main income streams are fees paid by cardholders for activation, maintenance and debit transactions, as well as through interchange fees from merchants and earnings from float on the funds held. The lack of consensus around the key profitability drivers might help explain the wide variety of pricing structures and fees levied by SVC providers. The business case has not been clearly defined and SVC issuers are unclear on what specifically attracts consumers to stored value products.

Although the increasing competition in the marketplace is leading to lower SVC prices, they are still more expensive than regular bank accounts. The fees that consumers might pay to sign up for and use a general purpose SVC are estimated at \$25.45 a month (Center for Financial Services Innovation, 2007), whereas the costs of a regular bank account are lower. Bankrate.com conducted a survey of checking accounts in the spring of 2003 and discovered that the average monthly fee for a non-interest-bearing checking account in the country's 25 largest markets was about \$6 (Bruce, 2003). Therefore an SVC could be a highly expensive option, perhaps even more costly than using a check casher for basic transactions. In other cases, however, an SVC with a lower pricing structure or a structure that is consistent with the holder's usage pattern could be cheaper for certain consumers than using a check casher.

Prices could come down if additional income revenues were exploited. One potential feature that is currently lacking in most SVCs is the ability for cardholders to save and build assets. Some families with relatively low incomes have assets that could be stored in a savings vehicle (Hogarth and Anguelov, 2003), but many of these families may not have access to traditional accounts at banks or credit unions. Therefore, the demand for savings features in SVC products is potentially powerful.³⁵

³⁵ The Federal Reserve Board's 1998 Survey of Consumer Finances estimated that 60 percent of households at or below the poverty level had positive assets, compared to 86 percent of households with incomes between 101-150 percent of poverty and 95 percent of those families with incomes between 151-200 percent of the poverty level.

Research shows that lower-income consumers desire products that provide a safe, convenient and inexpensive way to pay bills, make purchases, save, and build credit. For example, a 2000 industry survey of check-cashing customers showed that 49% would use savings accounts if they were available from their regular check-cashing outlets (Eric Mower Associates, 2000). Market research in lower-income urban markets showed how an overwhelming majority of low- and moderate-income consumers, given the opportunity to spend \$10,000, would invest the money in some type of asset-building opportunity (MetroEdge, 2003). But in order to save, lower-income families need opportunity, or the ability to access a savings vehicle; incentive, or the ability to earn interest on funds; and motivation, such as direct deposit, which makes automatic saving much easier.

A few SVC companies have experimented with offering savings features with their cards. Directo included a savings component as part of the bundled services offered with its card program, but the company suspended it in part because few customers were using the feature. NetSpend, one of the largest SVC providers in the United States launched a strategy to link a savings vehicle with its SVC. IndiGOCARD started a program linking savings accounts to its SVCs but has marketed it as an overdraft protection program. Linkages with savings accounts, tax refunds (such as the SVC programs offered by Jackson Hewitt and H&R Block), Individual Development Accounts (IDAs), or other savings vehicles through an issuing financial institution are possibilities for SVC growth.

However, SVC companies must face important customer barriers to providing unbanked consumers with savings opportunities through SVCs. First, savings or credit-building features would require more stringent identification verification. This requirement would decrease the relative anonymity offered by SCVs, which is one of their most desired features. Second, SVC users may not want transaction history data to be reported for credit-building purposes. They may wrongly perceive that such data could negatively affect their credit scores, based on their previous banking experiences. Third, “saving” has different meanings for different people and therefore the product may need to be adapted according to the type of customer targeted. For some, a rebate or a flexible spending account may act as a savings feature. For others, “savings” vehicles would have to address issues such as accessibility, tangibility, anonymity, etc.

One of the most important perceived customer barriers to providing unbanked consumers with savings opportunities through SVCs is the lack of consumer education about the appropriate use of such features. Consumers already face difficulties in understanding how SVCs work, how fees are structured and how to manage their funds. To solve this problem, employees at current SVC distribution points (places of employment, check cashers, retail locations) should be more willing and able to explain products to consumers. As a result, adding new features such as savings and credit-building features may require a level of sophistication and education in consumers that does not currently exist.

A second potential revenue source for SVC issuers could include adding credit-building features to their products. Since cards are marketed primarily to unbanked customers, SVCs have the potential to be an effective personal financial management tool for some people. However, very few companies are attempting to provide credit-building features, such as payday advance or overdraft protection, tied to an SVC.

These small extensions of credit, both formal (such as payday advances) and informal (such as paying overdrafts on a discretionary basis) could be additional features that would add value to the issuer’s SVC value proposition. However, even if these products were marketed they would

not currently help build a consumer's credit score. Existing credit models do not allow for the reporting of credit relationships lasting fewer than 30 days.³⁶ IndiGOCARD, Eufora Credit Builder and NetSpend CredAbility tried to utilize the credit-building component as a marketing tool for the cards, extensively advertising this feature and using a variety of strategies to try to link SVCs with the credit bureaus.

The structure of the United States' credit reporting system presents therefore important barriers for the development of credit features tied to SVCs. First, the credit bureaus do not currently accept Individual Tax Identification numbers (ITINs), although the United States Patriot Act allows for the acceptance of ITINs as substitutes for Social Security numbers for credit-reporting purposes. Second, credit bureaus can currently only collect credit data; debit and SVC data are not considered to be "credit." Some SVC companies have attempted to report monthly fees as "bill payments". However, laws in some states restrict the reporting of bill payment histories by utility companies, although the federal Gramm-Leach Bliley Act (GLBA) allows such reporting by financial institutions to credit reporting agencies. As a result, current credit-scoring models in the United States do not use SVC-related data.

International experiences in credit scoring models prove that SVC usage information should be used. In many European countries, the practice of collecting deposit data for scoring purposes is widespread, but the data is usually limited to the internal system of the financial institution (banks cannot view another institution's customer data). Some have argued that the Fair Credit Reporting Act (FCRA) has prevented financial institutions and other entities from reporting SVC transaction information due to privacy issues.³⁷ However, as long as institutions follow FCRA guidelines, privacy issues should not stop banks and others from reporting SVC transaction data to the bureaus. Nonetheless, this is not presently occurring in the marketplace.

Adding credit features to SVC can also generate other regulatory problems. It is unclear whether these services should be considered extensions of credit from a regulatory perspective and therefore subject to corresponding disclosures and regulations. Besides, the ultimate benefit to the consumer is disputed, since the costs of payday lending and overdraft protection are so high. Some argue that low-income consumers should be able to access small amounts of credit at reasonable costs, and that currently these costs are prohibitive (Center for Responsible Lending, 2007).

5. Regulatory Framework for Store Value Cards in the United States

SVC issuers in the United States currently fall under the Money Services Business definition (MSB). Persons or entities (other than banks or persons regulated or examined by the Securities and Exchange Commission or the Commodity Futures Trading Commission) are required to register as Money Services Businesses if they conduct more than \$1,000 in transactions with any one person on the same day in one or more of the following services: "stored value; money orders; traveler's checks; check cashing; and currency dealing or exchange. Besides, all such businesses that provide money transfer services must register, regardless of the amount of transactions" (Center for Financial Services Innovation, 2006).

³⁶ Fair Isaac Corporation recently announced the development of a new credit score for those with little or no credit histories; this credit score may use data on payday loan repayment, although it is unclear how such data would be used.

³⁷ For example, how much money went into and out of an account, in addition to information on balances and length of card ownership.

The federal MSB registration requirement does not apply to a business that is an MSB agent (Financial Crimes Enforcement Network, 2003). However, issuers, sellers and redeemers of SVCs are subject to certain reporting requirements, including reporting of cash transactions exceeding \$10,000 (“Reports Relating,” 2004). The rationale for the exemption for SVC issuers, sellers and redeemers was that the SVC industry was in its infancy and should not be inhibited by premature regulation. As the industry matures, SVC providers should be aware of money-laundering concerns; those with well-developed back-office systems that enable them to keep track of transactions will be better prepared to handle BSA requirements, follow Office of Foreign Assets Control rules, create Customer Identification Programs and provide Suspicious Activity Reports.

Money Services Business (MSB) are mostly regulated by State Laws. State laws regulating MSBs vary widely and have different requirements regarding licensing, making it difficult for some SVC providers to use non-bank retail distribution channels at a national scale since regulations are state-based. SVC providers will not achieve real scale in reaching the unbanked unless they utilize appropriate distribution channels, such as convenience stores and check-cashing outlets.

Issues such as the definition of a financial institution’s “branch” and “agent” are also problematic. The issue of whether distribution points (i.e., retail stores that sell SVCs) should register as MSBs under state laws is also unclear. Sometimes, large retail or other firms might register for MSB licenses. In other cases, individual franchises might have exclusive or non-exclusive agency contracts with SVC providers, further complicating the question of who should register as an MSB. In addition to the regulation of agents, some states may be considering whether to regulate the issuance of general spending and payroll cards as a branch-banking activity, thus requiring issuing institutions to have branches in states in which their cards are distributed (Kountz and Gould, 2004).

MSB laws are aimed primarily at ensuring the viability of companies that engage in money transfer transactions and to *protect consumer funds in case of failure of the MSB*. However, most state laws covering MSBs do not explicitly cover SVCs. Only sixteen states have expanded their MSB laws to include prepaid cards; many of these exclude single-use gift cards (Kountz and Gould, 2004).

MSB laws are evolving with the changing marketplace in order to provide protection mechanisms for consumers. However, the question is whether and when these various state MSB laws apply to companies that solely issue SVCs. If this regulation applies, it should be adapted to the complexities and costs related to MSB compliance. In addition, the differences between MSB laws across states should be resolved, and MSB regulation applied to SVC issuers should keep pace as products and technologies change.

The fact that SVCs are not bank accounts is often an attractive feature for consumers who, for various reasons, do not have bank accounts. However, SVCs do not have protection against loss of funds since they are not considered bank accounts. To solve this problem, the *FDIC defined in 2004 the circumstances in which funds underlying stored value cards are “deposits.”* The rule defines a “stored value card” as “a device that enables the cardholder to transfer the underlying funds (the funds received by the issuer of the card in exchange for the issuance or reloading of the card) to a merchant at the merchant’s point of sale terminal.” The FDIC explicitly excludes closed-loop gift cards issued by retailers from the proposed rule’s coverage. The proposed rule distinguishes between two types of SVCs: those issued by insured depository institutions and those issued by what the proposal calls “sponsoring companies.” A sponsoring company is an

entity other than an insured depository institution that issues SVCs; employers that issue SVCs therefore fall within the meaning of the term. The funds used to purchase SVCs issued by insured depository institutions would be considered deposits unless the depository institution keeps the funds in a pooled reserve account without subaccounts for individual cardholders or other records indicating the amounts owed to individual cardholders. Funds that qualify as deposits would be insured to the individual cardholder on a “pass-through basis”³⁸ (the cardholder would be the beneficiary of the insurance in the event of a bank failure).

The treatment of funds underlying SVCs that are issued by sponsoring companies is more complicated. Any funds that a sponsoring company places at an insured depository institution for the purpose of making payments on SVCs issued by that company (i.e., funds in reserve accounts) would be considered deposits. However, once the sponsoring company has withdrawn the funds from its account at the depository institution, the funds would cease to be deposits at the depository institution.

The deposit is either insurable to the cardholder on a pass-through basis or to the sponsoring company, depending on whether the FDIC treats the sponsoring company as an agent or custodian acting on behalf of the cardholder. In making this determination, the FDIC looks at three factors: first, the fiduciary relationship between the sponsoring company and the cardholder; second, the cardholder’s interest in the funds either from the depository institution’s account records or from records maintained by the sponsoring company or its agent; and, third, whether the deposit belongs to the cardholder (i.e., whether the agency or custodial relationship is genuine). If all three factors are answered affirmatively, the deposit is insurable to the cardholder. Otherwise, the deposit is insurable to the sponsoring company.

FDIC insurance protects consumers’ funds in cases of bank failures. However, it does not protect customers’ funds when a non-bank SVC provider fails. A precedent occurred in the Northeastern United States. In 2004, when New York State suspended the license of CashPoint, a bill-payment company that signed hundreds of retailers as agents to offer bill payment services and ultimately failed to pay hundreds of billions of dollars in utility companies’ bills. While the courts advised collectors against the practice, consumers who had handled their bill payment through CashPoint were ultimately responsible for the funds if collectors chose to seek repayment.

Regulation E, which implements the Electronic Fund Transfer Act (EFTA), provides protections to consumers using electronic fund transfer (EFT) systems. SVCs were not originally covered by Regulation E. However, the Board of Governors of the Federal Reserve System, which is responsible for implementing EFTA, revised Regulation E to cover payroll card accounts (“Electronic Fund Transfers,” 2004). Banks that issue SVCs may voluntarily provide disclosures that describe consumer protections (Frumkin et al., 2003). The board concluded that payroll cards were “designed, implemented, and marketed as substitutes for traditional checking accounts at a financial institution,” and that “these cards shared some of the characteristics of Electronic Benefit Transfer (EBT) cards, which are covered by Regulation E.”

The question however is whether SVCs outside of payroll cards do in fact bear these characteristics and could be included in the Regulation E definition. Some of the SVC providers,

³⁸ The FDIC has not clarified whether it ensures the pool account, or individual accounts for US\$100,000. That is why they are insured on a “pass-through basis.” How a customer can prove a “fiduciary relationship” or “interest in the funds” and that therefore the deposit belongs to the cardholder is still a pending issue..

including both payroll and general spending SVC providers, are already providing at least some of the protections required by Regulation E, such as limitations on consumer liability for unauthorized transfers and procedures for error resolution. Very few, however, were providing periodic mailed statements. SVC providers stated that Regulation E's requirement that periodic paper statements be mailed to accountholders may be a negative value proposition for SVC providers. As a result, permitting alternative ways to deliver statements, such as by e-mail, would be much less expensive and perhaps more appropriate than periodic paper statements. Indeed, paper statements may not be the most effective way of keeping underbanked cardholders informed of their balances and transactions.

Regulation E coverage of SVCs should follow the model provided for Electronic Benefits Transfer (EBT) transactions and permit the use of alternative mechanisms for providing transaction and balance information to general purpose SVC cardholders. Innovations that may also become more prevalent in the near future include text messaging transaction and balance information via mobile phone and delivery of paper statements at ATMs.

After, September 11, 2001, financial institutions came under more pressure to keep and report accurate records verifying their customers' identities. *Section 326 of the United States PATRIOT Act* requires financial institutions to be diligent in documenting customer identification. Most SVC providers currently require that customers provide Social Security numbers, since major brands such as Visa and MasterCard require Social Security numbers for signature-based cards, following the PATRIOT Act requirements. Considering that some underbanked consumers cite privacy as a primary concern, the identification requirements may discourage customer acceptance. Customer identification requirements is an especially relevant problem for illegal immigrants (Bair, 2006), that could however be resolved with PIN-based solutions.

Another emerging issue around the PATRIOT Act is that some SVC products allow consumers to give second cards to family members in other countries as a way to transfer money, and it can be difficult to verify the identity of individuals living outside the United States. The Bank Secrecy Act (BSA), administered by the Financial Crimes Enforcement Network (FinCEN), requires financial institutions, including banks and money services businesses (MSBs), to keep certain paper trails of their customers' transactions. Currently, although they fall under the MSB definition, issuers, sellers, and redeemers of SVCs are not required to register with FinCEN or to maintain a list of their agents ("Registration of," 2004).

Finally, many states' labor laws mandate that an employer cannot demand that workers receive their pay in a specific manner; payroll cards must be offered as an option rather than a requirement (Wiley, 2004). Alternatively, employment laws in other states do permit employers to mandate worker participation in direct deposit programs as long as the worker can choose the financial institution to which the funds are electronically transmitted.

Most states also stipulate that employees must be able to access their pay without incurring any additional costs. Many payroll card products are structured to be offered nationwide and must therefore comply with varying state requirements. Apart from the state employment law issue, the OCC has also issued guidance on how national banks should deal with payroll cards. The OCC is specifically concerned with payroll cards being designed to facilitate payday lending programs or other services that the Comptroller deems predatory (Office of the Comptroller of the Currency, 2004).

In conclusion, e-Money is not specifically defined in the United States as it is in Europe. However Money Service Businesses or specifically Money Transmitter Regulations are very

similar to those required in Europe for e-Money issuers (ELMIs). Whether the value of stored value cards is considered a deposit in the United States depends on whether the FDIC insures it. Currently, only payroll cards are insured by the FDIC. However, there remains the problem of general purpose open SVCs where payrolls are deposited. The FDIC has not clarified either whether it insures the pool account, or individual accounts. That is why they are insured on a "pass-through basis" until the regulation clarifies how a customer can prove a "fiduciary relationship" or "interest in the funds" and that the deposit belongs to the cardholder.

In the United States there is no need to be a regulated institution (or an MSB) in order to issue SVCs, only to market them. However, since in order to issue open-loop cards SVC issuers need to be a member of the branded card systems, SVC providers have normally regulated financial institutions that issue SVCs. MSB's agents are in general not regulated, since no list of agents is required. However, MSB regulations are different from state to state, which is a major obstacle for the development of national SVC distribution networks.

Consumer protection issues pose relevant problems for the development of "open looped" SVCs as a low cost alternative to current accounts. SVC funds are not protected by MSB laws in the event of an SVC issuer failure, as the CashPoint case shows. Besides, Regulation E and the FDIC only protect payroll SVCs in an unclear manner, but do not insure the other SVCs. Customer identification issues are also a regulatory obstacle for the development of the SVC industry. SVC providers require customers to provide Social Security numbers (Patriot Act) for open-loop cards, which makes 'bancarization' difficult. As a result they cannot operate as they were "designed, implemented and marketed as substitutes for traditional checking accounts" (Federal Reserve Board, 2004).

2.2. Review of e-Money Regulation and e-Money Issuers in Europe

1. Introduction

Europe has made great legislative efforts in order to provide electronic money and electronic money issuers with an adequate regulatory framework. e-Money and e-Money issuers are regulated by Directive 2000/46/EC of the European Parliament and of the Council (Directive 2000/46/EC of the European Parliament and of the Council of September 18, 2000 on the taking up, pursuit of and prudential supervision of the business of electronic money institutions). However, e-Money issuers are also regulated, as we will see in the following analysis, by The Banking Directive (Directive 2000/12/EC of the European Parliament and of the Council of March 20, 2000 relating to the taking up and pursuit of the business of credit institutions), and the recently passed Payment Services Directive (Directive 2007/64/EC of the European Parliament and of the Council of November 13, 2007 on payment services in the internal market amending Directives 97/7/EC, 2002/65/EC, 2005/60/EC and 2006/48/EC and repealing Directive 97/5/EC Text with EEA relevance). This document has been produced by analyzing these legal documents, as well as the Evaluation of the E-Money Directive prepared by The Evaluation Partnership for The DG Internal Market of The European Commission in February 2006. Given the large amount of information available, this document tries to provide a summary and highlight the most important elements of these documents for the issue at hand.

The recently passed Payments Services Directive does not however resolve the regulatory loopholes highlighted in this report, since it clearly states that “This Directive should lay down rules on the execution of payment transactions where the funds are electronic money, as defined in Article 1(3)(b) of Directive 2000/46/EC. This Directive should, however, neither regulate issuance of electronic money nor amend the prudential regulation of electronic money institutions as provided for in Directive 2000/46/EC. Therefore, payment institutions should not be allowed to issue electronic money.”

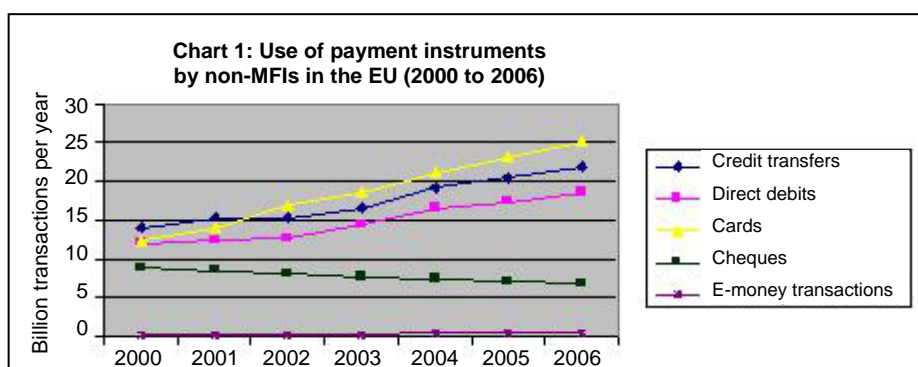
In Europe the first prepaid electronic payments were launched in the early 90’s, by non-banks. However, banks soon reacted (Lelieveldt, 2001) and the European Central Bank started demanding measures to regulate the issuance of e-Money. The European Commission was concerned about the proliferation of national e-Money regulations thorough the EU (4-Krueger, 2002). The EC presented the first draft with the EC explanatory memorandum in July 1998, regarding the prudential supervision of the business of electronic money institutions. After two years of consultative process, the commission finally adopted the directive 2000/46/EC on September 18th, 2000, and Directive 2000/28/EC amending the Codified Banking Directive institutions, where electronic money institutions were added to the category of credit institutions as defined in Directive 2000/12/EC.

The long negotiation process resulted in the Commission establishing a separate regulatory framework for ELMIs (electronic money issuers). This new legal framework was intended to be lighter than the banking supervision, where e-Money issuers were being considered deposit-taking institutions, and to modify the previous positions of the EMI and ECB, although many of their proposals were also considered in the final version of the e-money directive.

This previous strict regulation limited e-Money issuance to credit institutions only (EMI, 1994), as argued by the European Monetary Institute when reporting to the Council on prepaid cards. Also the European Central Bank and other member states supported limiting the issuance of electronic money to credit institutions (ECB, 1998, Report on electronic money)

The use of e-Money has remained very limited since the approval of the European Directive of e-Money, although the use of cashless payment instruments has steadily increased over the past few years in the EU. The following table shows how, from 2000 to 2006, the number of cashless payment transactions (by non-banks) in the EU rose by 7% per year on average, while the value of such transactions rose by 5% per year. The number of e-Money transactions has grown also very rapidly (at a rate of more than 20% p.a.), but these still account for only 0.6% of the total number of cashless transactions.

Figura 2.2



Source: ECB.

However the analysis of the number of e-Money transactions has to take into account the fact that the ECB only requires data on card-based products and only on traditional e-purses. More recent card based e-Money developments such as transport smart cards, prepaid debit cards or electronic equivalents of traveler's checks are not included. Neither the ECB nor National Central Banks currently publish data on server-based e-Money.

2. Regulation of Electronic Money in Europe

The E-Money Directive (EMD) that defines and regulates electronic money (e-Money) and electronic money issuers (e-Money issuers) has been implemented by all 25 member states. The EMD defines electronic money as “monetary value as represented by a claim on the issuer which is: Stored on an electronic device; Issued on receipt of funds of an amount not less in value than the monetary value issued; and Accepted as a means of payment by undertakings other than the issuer.”

National authorities have tried to differentiate e-Money and deposits (or repayable funds), in terms of the “immediacy” of e-Money (Porteous, 2006). However, as e-Money deposits increase, this distinction might need to be reviewed. Some national authorities did not feel that the current distinction was clear enough, and are calling for account-based e-Money to be explicitly included in the scope of the Directive.

The implementation of the EMD by the different national governments has created differences in the definition of e-Money that might create legal uncertainty for issuers. Rule number 2, stating that e-Money has to be “issued on receipt of funds of an amount not less in value than the monetary value issued,” was added during the negotiation process on the initiative of the ECB “in order to prevent e-Money schemes from issuing e-Money at a discount and thereby potentially expanding the monetary mass in an uncontrollable way.” However, the inclusion of this criterion in the definition could create a loophole, and some states have made changes to this part of the definition which has created national differences. Schemes issuing e-Money at a discount would fall outside of the definition of electronic money, and would therefore not be covered by the directive.

Some countries, such as Austria, Poland, Sweden and Finland, introduced changes that tried to clarify the definition and differentiate between e-Money and other products. Finland added a reference in which account-based systems also qualify as e-Money. These centralized account-based systems are very similar to those used for SVCs in the United States. The Finnish legislation specifies that “funds repayable on demand received from the public and paid into an account where the funds may be used to pay for goods and services being sold by one or more companies, and withdrawn in form of cash (customer account)” also constitute e-Money. The Finnish finance ministry wanted to make this distinction to “ensure technological neutrality, making clear that both kinds of schemes would fall within the scope of the legislation.”

Some other member states have specified a general maximum amount (or purse limit) and/or time limit that can be stored on each electronic device/account. The maximum amount depends on the country and ranges from 300 Euros (Greece, Denmark, and Estonia) to 5.000 Euros (Ireland), while Hungary determined a maximum validity period of 5 years.

The difference between e-money issuance and deposit taking is clearly determined in Article 2 (3) of the EMD, which states that “a receipt of funds within the meaning of article 1 (3) (b) (ii) will not constitute a deposit according to article 3 of Directive 2000/12/EC if the funds are immediately exchanged for electronic money.” This provision is very relevant because special requirements are set for deposits. However, this provision should be more clearly defined (Kohlbach, 2004; Porter, 2006).

In practice all national authorities consider that e-Money issuance is not deposit taking, although the distinction can sometimes be difficult. In Belgium and France, e-Money issuance is not considered deposit taking but the funds received in exchange for e-Money are covered within the framework of the deposit guarantee scheme, and are included in the assets used to calculate the premiums. However, e-Money is assimilated to a deposit only for the purposes of the guarantee scheme.

In the United Kingdom, the FSA regards e-Money as spending, not as a saving product, so when customers do not hold large amounts (in the United Kingdom, the basic limit is 1000 pounds, although in the case of account-based schemes, where there is the possibility of a stolen or lost card/access key being replaced and the issuer blocking the account, this limit does not apply) it is not considered deposit taking. In Denmark, e-Money issuance up to the purse limit of 300 Euros is not considered deposit taking. Beyond such limits, e-Money accounts are considered deposits.

Only criterion II of the definition of e-Money has been widely modified at the national level in order to prevent financial institutions from taking advantage of the loophole. However, there is no evidence that it has made any difference in practice, as apparently no e-Money issuer has tried to exploit it. In some countries, national authorities have tried to clarify the definition of e-Money, and in particular the differences with deposit taking (United Kingdom, Denmark), and account-based products (Finland, Sweden).

3. Definition of an Electronic Money Institution

Article 1.3 (a) defines an ELMI as “an undertaking or any legal person other than a credit institution... which issues means of payment in the form of electronic money.” Article 2.1 stipulates that references to credit institutions in Directives 91/308/EEC (1) and 2000/12/EC except Title V, Chapter 2, thereof shall apply to electronic money institutions.

When transposing the EMD directive, national authorities have taken two approaches. First, the majority of national authorities consider ELMIs a subcategory of credit institutions. However, where differences do exist is in the way that the rules applicable to traditional credit institutions are applied to ELMIs, since the EMD does not explicitly regulate ELMIs in terms of reserve requirements, money laundering rules, administrative and organizational set-up, senior management arrangements, and control systems. For example, in countries such as Austria, Germany and France, ELMIS are classified as banks and have therefore the same requirements.

A second approach used by some national authorities when transposing the definition of an ELMI into national law is to consider it a separate category of organization that issue a payment instrument in the form of e-Money and have a license to do so. For example, in the United Kingdom, the FSA has developed a “specialist sourcebook” based on a risk-based approach for e-Money issuers that contains the rules with which ELMIs have to comply on a range of issues, including their sound and prudent operation. Overall requirements are much

lighter because the risks involved are limited, which has promoted the development of the industry. This “specialist sourcebook” is the result of the collaboration between national authorities and the industry. A new set of rules is also being developed in the Netherlands, but this is, as yet, incomplete.

The EMD leaves no doubt as to the applicability of many provisions of the Banking Directive to ELMIs. However there are national differences in terms of the requirements of “sound and prudent management, administrative and accounting procedures and adequate internal control mechanisms”, the United Kingdom being the only country (so far) that has developed a specific set of rules for ELMIs. The more customized the rules, the more proportionate to the risks involved in e-Money issuance they are going to be. A clear and specific set of rules that regulates the industry, such as the British case, clearly promotes the development of e-Money issuers and products.

3.1. The EMD sets the following requirements for ELMIs

- **Capital requirements:** As a result of the long process of negotiations, minimum capital requirement was raised to 1 million Euros. Some industry operators and specially MNOs argue that the capital requirement of 1 million Euros set by the EMD is too high for the risk they pose. However some countries have raised minimum capital requirements: Hungary (1.2 million Euros), France (2.2 million), and Greece (3 million). Besides, another requirement that has clearly prevented the development of ELMIs is the requirement to maintain own funds equal to or greater than 2% of the higher of the current amount or the average of the preceding six months’ total financial liabilities related to outstanding electronic money.
- **Limitation of investments:** All countries have transposed the limitation of investments set by the EMD in its article 5. This article states that the investments have to be of an amount of no less than their financial liabilities related to outstanding electronic money in highly liquid and low risk assets. However there are some national differences regarding the definition of low risk assets, which is defined by local regulators. For example, the United Kingdom defines liquid assets as investments that must have a residual maturity of no more than one year. Other countries, including Germany, do not have the same definition of liquid assets.
- **Redeemability:** The EMD determines that e-Money has to be redeemable at par value free of charges other than those strictly necessary to carry out that operation. This obligation is also the result of the long and complex negotiation where the ECB imposed its view, as in the case of initial capital requirements. In any case, the minimum fee for redemption should not exceed 10 Euros. However, in some countries this minimum fee has been lowered creating competitive disadvantages such as in Denmark (3.35), Hungary (2.00) and Italy (5.00). In Poland, national legislators have tried to facilitate the existence of e-Money even when the funds are not redeemable (gift or service vouchers) like in the United States, and outside the EMD framework.
- **Restriction of activities:** The EMD limits ELMIs to activities such as only “issuing electronic money, and the storing of data on the electronic device on behalf of other undertakings or public institutions.” Some industry operators also think these rules are too strict since the final version does not allow for providing “non-financial services

delivered through electronic devices.” EU regulation has been transposed without changes except for national differences that vary depending on the days of settlement.

Summarizing, very few changes have been made by national authorities regarding the definition of ELMIs. The vast majority of member states have transposed the four requirements proposed by the EMD to ELMIs. However, higher capital requirements, especially in the case of Greece, make the development of the e-Money industry difficult. Another obstacle for the development of the industry is the lower minimum redemption values, which make their business models unsustainable.

Article 6 of the EMD directive states that competent authorities shall verify that ELMIs comply with two requirements, no less than twice a year, regarding capital requirements and the limitation of investments. However the frequency is different depending on the country, with Poland being the least strict (once a year) and Germany the most (monthly). The low number of ELMIs means that reporting is still not an issue.

Article 8 of the EMD stipulates that member states may allow their competent authorities to waive the application of some of all of the provisions of the EMD and the application of Directive 2000/12/EC to ELMIs in cases where at least one of the three criteria is met, and where the electronic storage device has a maximum value of 150 Euros. However, the conditions for granting a waiver were tightened during the negotiation process. The maximum amount of financial liabilities related to outstanding electronic money was lowered to 5 million Euros.

This article has however only been used by some countries, and not transposed by all. Besides, every country has set different conditions and a different process for granting waivers. There are also differences in terms of what provisions can be waived. The most widely used waiver criterion is the float size limit (EMD, article 8.1 (a)). The non-implementation of this criterion is likely to significantly reduce the usefulness of the waiver regime. As for the process, the automatic granting of the waiver would seem to lead to its more widespread use.

3.2. Problems with the applicability of the EMD directive to issuers of prepaid accounts

The applicability of the EMD to issuers who are not offering electronic payment services as core business but to complement their services, such as mobile network operators (MNOs), is one of the most controversial issues as yet unresolved by the EMD. These operators offer their customers the possibility of paying for third party goods and services using their prepaid mobile telephone funds.

This debate led to a formal consultation that resulted in the issuance of the Guidance Note by the EC in early 2005. The result was that most of the national authorities argued that there was a need to at least broaden the definition, even perhaps develop a new hybrid category. However, mobile operators argued that there was no need for a new expanded ELMI definition, and that the New Legal Framework for Payments that resulted in the recently approved Payments Service Directive would be sufficient to cover the issue. However, as argued before, the Payment Service Directive does not solve the issue since it clearly states that “this directive should, however, neither regulate issuance of electronic money nor amend the prudential regulation of electronic money institutions as provided for in Directive 2000/46/EC.”

Mobile network operators (MNOs) currently offer the possibility of purchasing goods or services (especially in the form of digital content, e.g., ring tones, logos, games, etc.) from third parties.

While the EMD is not applied to these kinds of schemes at present, the regulations differ from one Member State to another. Several Member States (Czech Republic, Denmark, Estonia, Finland and the United Kingdom) have followed the EC Guidance Note that states that schemes where there is no direct debtor-creditor relationship between the third party merchant and the customer are not e-Money. In practice, this means that MNOs are exempt from the EMD as long as this condition is met. In the United Kingdom the main points of the Guidance Note were incorporated into the FSA rulebook.

Other Member States (France, Germany, the Netherlands, Poland, and Portugal) have decided not to apply the EMD to MNOs for the time being, but are awaiting further guidance and clarification at the EU level. For a number of Member States the problem does not appear (Cyprus, Greece, Latvia, Malta, Slovakia) since MNOs are currently not issuing e-Money in their respective countries. The Belgian authorities have interpreted that, even in prepaid schemes where there is allegedly no direct relationship between customer and a third party merchant, such products would have to be classified as e-Money.

An example of the impact of the current unclear legal situation of MNOs on new initiatives is the case of Simpay. Simpay was a joint venture by four mobile network operators (Orange, Telefónica, T-Mobile and Vodafone) to provide a single solution for small-value digital payments. In mid-2005 the participants decided to discontinue the project, mainly due to diverging ideas of the concrete design of the product. However, dealing with the unclear legal and regulatory framework was one of the issues that was left for a later stage and remained unresolved.

Simpay participants had different impressions as to whether the EMD would be applicable to the joint venture in their respective countries. Depending on the business model that would have been agreed, setting up a new entity as an ELMI would have been required. This would have created additional problems and might have made the product less attractive, especially because mobile phone customers could not have used the Simpay product directly, but would have been required to register with the new entity.

Other cases where the national interpretation of what constitutes e-Money varies and creates unclear regulatory frameworks are certain account-based schemes. PayPal is licensed as an ELMI in the United Kingdom, but the German authorities think that such a scheme should operate under a full banking license.

Electronic service vouchers also pose serious problems for the applicability of the EMD. Service voucher issuers, such as Accor, that wish to provide them in electronic format face different national regulations that make their development more difficult. The British and Belgian regulators have stated that they would not consider such products e-Money, but the authorities in most other countries were unsure of whether they would have to apply the EMD rules to them.

Smartcards for public transport are another product where there are serious problems for the applicability of the EMD. Smartcards that are used exclusively to pay for public transport but are accepted by several different transport providers fall under the scope of the EMD. In Ireland and the Netherlands, such schemes need an ELMI license. In the United Kingdom, however, Transport For London is not considered to be issuing e-Money at present, while a similar, smaller scheme has been granted a small e-Money issuer certificate. In the Czech Republic, more than 20 public transport operators are operating under a waiver, while the Finnish

authorities were approached by a transport operator, but considered that no license or waiver was necessary.

In conclusion, applicability of the EMD to certain issuers of prepaid accounts is one of the most controversial issues of the EMD. This controversy is especially relevant with regard to MNOs, where almost all Member States have *de facto* exempted these from the application of the EMD for the time being. In some Member States the decision was based on the criteria outlined in the EC Guidance Note. In others the situation remains unclear from a legal point of view, and the *de facto* exemption is only seen as a temporary solution until further clarification is provided. A final group of Member States report that MNOs currently do not offer their customers the possibility of paying for third party goods and services, or that the situation has not yet been discussed in-depth.

However, regulation needs to be clarified in order to accommodate two competing industry groups. MNOs argue that the application of the EMD to their prepaid business would be disproportionate to the risks, and would fail to recognize that third party payments only account for a very small percentage of prepaid funds (and these are limited to micropayments for mostly telecom-related goods and services). Besides, they argue that the provisions of the EMD are not appropriate for the kind of service they provide, since they are very costly to implement, difficult to explain to customers, and might ultimately mean that MNOs would have to completely stop offering the possibility of using prepaid funds to pay for third party goods and services.

On the other hand, a significant number of e-Money firms argue that the non-application of the EMD to MNOs creates an uneven playing field and distorts competition. They emphasize that some form of proportionate regulation applicable to MNOs (and other hybrid issuers) is vital to ensuring fair competition among schemes that often offer similar payment products.

3.3. Anti-money laundering rules and reserve requirements supervision

Anti-money laundering rules and reserve requirements are not explicitly dealt with in the EMD, so the rules applicable in the different national markets differ and have an impact on the development of the market. The EMD refers to the rules contained in the relevant banking directives.

Regarding anti-money laundering rules, there are two general approaches: first, the majority of countries apply the same anti-money laundering rules to ELMIs and waived institutions as they do to banks, since many countries do not have ELMIs or waived institutions. The general criterion applied is Directive 2005/60/EC, Article 10 that proposes a risk-based approach to money laundering. In practice it means that issuers will not be required to verify the identity of their customers until the total turnover of an e-Money account exceeds 2,500 Euros. However, how these rules are applied to instruments such as anonymous cards is unclear.

Then there are those countries that do have ELMIs or waived institutions; and these countries implement pragmatic approaches. Czech and Danish authorities, for example, determined that there was no need to identify the customers of e-Money cards. In Germany, rules are negotiated with each ELMI applicant, which can make the process very difficult.

Other countries such as the United Kingdom, have developed explicit rules that apply to e-Money instruments, whether they are issued by ELMIs, waived institutions or banks. In the United Kingdom, the FSA has elaborated a Joint Money Laundering Steering Group based on a

proportionate risk-based approach. In practice it means that the identity of the customer does not need to be verified up-front (when the e-Money account is opened or the card bought). Verification is undertaken only when the amount withdrawn/redeemed or the total turnover exceeds 5,000 Pounds. However, the identity of the merchant accepting e-Money must always be verified.

In Belgium and France the identity of the customer does not need to be verified if maximum storage is 150 Euros and the limit on the individual transaction is 30 Euros (France only). In Italy, the purse limit for anonymous e-Money instruments is set at 500 Euros.

In terms of reserve requirements, some countries outside the Euro area do not impose reserve requirements (Denmark, Estonia, United Kingdom). In the Euro area the ECB considers ELMIs a subcategory of credit institutions and therefore, according to article 19.1 of the ECB statute, it allows the ECB to require minimum reserves. However, in practice they are exempt due to the low volume of business.

Summarizing, strict anti-money laundering rules are likely to have a negative impact on the development of the industry. However, until now, this has not been a problem due to the low volume of business. The United Kingdom has the most flexible approach, where issuers are exempted from strict “know-your-customer” approaches as long as the turnover does not exceed 5,000 pounds or the e-Money is redeemed. With the 3rd money laundering directive, this approach could be extended to all European countries. However, national differences will remain in terms of what forms of customer identification are accepted. This might therefore remain an issue, as it currently is in the United States.

4. Development of the e-Money Industry in Europe

Certain markets in server-based e-Money have developed, but not the in way the e-money directive was predicting. Most of the issuers are in the United Kingdom, Scandinavia, the Netherlands, Germany, Austria and the Czech Republic. The most successful experiences are among server-based electronic money, where PayPal is the most relevant case. However, disposable and virtual pre-funded cards and mobile-based payment solutions have not developed.

Prepaid debit cards and electronic traveler’s checks are in many ways similar to more traditional payment products. Since they are prepaid, they are regulated by the e-Money legislation. Prepaid cards are normally issued by traditional banking institutions, and therefore can be distributed by their networks and used for banked customers to pay remotely. Commercialization and adoption would therefore not be a problem, although as yet the demand of banked customers for prepaid cards has remained very low. Besides, the new security features of traditional debit and credit cards when paying via the Internet, such as Verified by Visa, makes them even less appealing for potential customers to use when purchasing online.

Non-banked customers could be interested in these products as long as they cannot access regular banking accounts. However, given the high level of banking access in Europe (extremely high in Western Europe and increasing in Eastern Europe), demand is not expected to rise, even among immigrants.

The take-up of card-based money has remained even slower. The limited acceptance network and limited functionality are its main obstacles to growth. Besides, regulation is not clear,

especially regarding transport systems and whether they should be regulated and therefore considered e-Money or not.

However, there are two promising factors that can promote the future development of smart cards. First, widespread adoption of the EMV standard will resolve the acceptance problem by adapting all EFTPOS terminals and ATMs to the new standard. Second, the development of contactless technology can help promote the use of cards not only in transport systems, but also in other environments and help define and clarify the business case for a number of providers of card based e-Money.

4.1. Server based e-Money

The use of server based e-Money based on cards has been the most prominent form of e-Money, both in Europe and in the United States. Unlike the case of the card-based e-purses (smart cards), the funds are not actually stored on these cards but on a server. These products typically imply the transfer of centrally stored anonymous claims that have been purchased in advance (ECB, 2004).

There are different types of server-based e-Money providers based on cards in Europe: first, disposable and virtual pre-funded cards designed for online shopping. These include prepaid cards that, with a PIN number or other forms of identification, allow the customer to pay online. Examples include PaySafeCard (Austria/Germany), MicroMoney (Germany), Snap Card (United Kingdom) and Splash Plastic (United Kingdom). An example of these issuers is SNAP Card, a British company currently on a waiver regime until it reaches the critical mass required to achieve ELMI status. It is reloadable in 5,000 resellers and allows payments in virtual POS (Internet). Its business model is based on appealing to the merchants with lower discount fees and better security features.

Mobile phone-based micro-payment solutions are another solution launched in Europe for server-based e-Money providers based on cards. Payments are made through the prepayment system of the operator. Examples include Crandy (Germany) and Luup (Norway). However, their business models are clearly jeopardized by the fact that mobile operators can offer this service without an ELMI license.

Prepaid debit cards have been issued by most of the card scheme members (banks). They have developed various types of prepaid debit cards that offer the same acceptance network as branded cards, but are considered electronic money since they are prepaid. They can also be offered by ELMIs such as Prepay Technologies Ltd., United Kingdom, as well as credit institutions such as MasterCard's Cashplus, United Kingdom.

Electronic equivalents of traveler's checks (common in other parts of the world, new in Europe) are worth US\$20 billion a year. Prepaid, as are physical traveler's checks, they offer more security and convenience, and can be used in foreign ATMs to purchase foreign currency and at merchant POS. Leading companies in this business such as Amex and Travelex considered setting up an EMLI, but decided instead to issue travel cards through banks due to the unclear or inadequate regulatory framework discussed before: structural and supervisory issues, coupled with the limitation of investments, reduced the business opportunity for making money on the float.

Server-based electronic money was developed taking advantage of the opportunities offered by the internet. In addition, niche markets such as person-to-person internet transactions, online gaming and payment instruments for persons without access to bank accounts or credit cards

have also developed. The most successful are pre-funded personalized online payment schemes, involving the transfer of funds stored on a personalized online account (not including traditional bank deposits). Access to these systems is mostly carried out through the internet and also sometimes by SMS.

PayPal has been the most successful. Launched in the United States in 1999, it currently has 86 million clients. In Europe, PayPal Ltd is an ELMI licensed by the FSA (United Kingdom) in 2004 and has since set up in all EU member states. PayPal's killer application is e-Bay, which purchased PayPal in 2002 and accounts for 70% of all its transactions.

Another example, although less successful, is Moneybookers (now rebranding as Skrill). Also based in the United Kingdom and founded in 2001, Moneybookers became, in 2002, the first institution to be granted an ELMI license by the FSA. It runs a similar business model to PayPal's, but without the killer application that has made PayPal so successful.

4.2. Card-based e-Money

Card-based e-Money is traditional electronic purses in the form of a smart card, also referred to as hardware-based e-Money, where the purchasing power generally resides in a chip which is embedded in a plastic card. Despite the fact that a large number of debit cards include electronic purse applications, smartcard use in Europe is very limited. The most important barrier to growth is that they need their own acceptance network. However, the upcoming EMV initiative could be the catalyst that ultimately promotes the development of this kind of product, since all EFTPOS terminals and ATMs will accept smart cards.

Card-based e-Money schemes were launched in the second half of the 1990s by banks or with the involvement of banks, since they are embedded in debit cards. Usually, these schemes are operated by a subsidiary of a group of banks that include this feature into its debit card. Card-based e-purses are intended for payments of limited amounts, such as vending, parking and ticketing machines. However, they do not allow any other payment functions such as cash in, cash out or EFTPOS purchasing.

E-purses usually cost the issuer less per transaction than credit or debit cards since they do not require online authorization (authorization software is embedded in the chip), except for Moneo in France. However, merchant fees are usually higher, which has prevented its development due to the network externalities of payment networks. As a result these products have been very slow to succeed.

Card based e-Money increased from 0.4% to 0.7% of total cashless payments between 1999 and 2003 (Bluebook, 2005). Hardware-based e-Money in circulation in the Euro Area (monthly) increased by 20% between 2002 and 2005, totaling 453 million Euros in 2005. Software-based equivalents (not to be confused with server-based systems) of card-based electronic payments systems have been even less successful than chip card-based e-Money (ECB, 2004).

The few success cases of some e-purse initiatives requires a "killer application," defined as a very specific use where an e-Money card offers a clear competitive advantage or may even be necessary to make a payment in certain circumstances where consumers only start to use e-Money when they are practically forced to. Once they have become used to e-Money, they use it for some other situations. The mere availability of an e-Money function on a debit card is usually not enough to convince most customers of its usefulness.

Some functioning card-based e-Money schemes in Europe are Proton (Belgium), Chipknip (Netherlands), Geldkarte (Germany) and Moneo (France) and Proton, operated by Banksys, a subsidiary of 34 Belgian Banks who include the Proton application on their debit cards and issue the e-Money. Proton has three dominant applications: first, canteens and vending machines in big companies; second, public telephones (initially Proton's main application); third, general vending machines and parking meters.

Chipknip is issued by banks and integrated into around 80% of Dutch debit cards, as well as a disposable version called prepaid Chipknip that is reloadable. Dominant applications are its parking application that represents 90% of the transactions (making it Chipknip's killer application), vending machines and catering.

Geldkarte has e-Money chips embedded in debit cards (EC-Karten). However it has very few active users due to its limited acceptance network. Its main uses are vending machines and parking meters.

Moneo is a system operated by SFPMEI, the credit institution in charge of issuing e-Money on behalf of all participating French banks, who include the application on their debit cards. However the limited acceptance network has prevented its widespread use.

Smart cards for public transport, where these cards are accepted as a means of payment by different transport companies, also potentially qualify as e-Money. Whether they are considered as such depends on the organizational set up: direct or indirect credit relationship with the different accepting bodies and the customers and the view of national regulators.

As previously discussed, the Transport for London smart card is not considered e-Money by the FSA, despite the fact it is accepted by different transport providers. The smart card operated by the Helsinki transport authority needs no ELMI authorization either. However, more than 20 transport providers operate under a waiver in the Czech Republic, United Kingdom, Ireland and the Netherlands. They will end up applying for an ELMI license. Currently, they only offer transport services, but once they have the license they might end up offering other payment services. Transport for London is also exploring this area of expansion. Besides, the increasing use of contactless technology enables these smart cards to enhance speed and convenience, such as Octopus in Hong Kong.

4.3. Other products that may constitute e-Money

Electronic vouchers (gift vouchers): these are the most important type of stored value cards (the equivalent of e-Money) in the United States. In Europe issuers of paper-based vouchers (gifts or meal vouchers) would like to switch their products to an electronic format. Although in principle they meet the features compatible with the E-Money Directive, the redeemability requirement poses serious problems for their business model. The European regime has prevented issuers such as Amex or the French Association of Voucher issuers (APETDS) from issuing gift or meal vouchers. Accor is already issuing electronic meal vouchers in Asia and South America, but is unable to do so without a bank in Europe.

Mobile network operators' prepaid services: as previously discussed, the applicability of the EMD to mobile operators when they allow customers using their prepaid accounts to buy third party goods and services (digital content such as ring tones, logos, games, etc.) is one of the most controversial issues of the current regulation.

4.4. Assessment of the e-Money industry in Europe

The number of ELMIs in Europe is low (9 ELMIs were active in 2005 according to the Evaluation of the Directive). The highest number is in the United Kingdom, due to its adapted regulatory framework. A large number of entities are operating under a waiver (72 in 2005 according to the Evaluation of the Directive) and, again, the highest number is in the United Kingdom, although only half are active. The second country is the Czech Republic, since public transport providers whose travel cards are accepted by other transport providers have to be regulated under a waiver (this is not the case in the United Kingdom).

Credit institutions issue e-Money in all EU states. Their products include E-purse schemes like Proton or Chipknik, card- or server-based schemes offered by a single institution, and prepaid cards. Specialized banks also issue the electronic equivalent of traveler's checks. ELMIs and waived institutions predominate in the market for server-based e-Money. Banks, or ELMIs that have close ties to banks, issue the vast majority of card-based e-Money. The only exception is transport cards.

According to the Evaluation of the Directive, the estimated total value of e-Money in 2005 was 670 million Euros. The slow take-up of the e-Money industry in Europe is mainly due, as argued before, to a lack of demand. First, the lack of consumer and merchant interest due to the availability of other methods of secure payment (Verified by VISA and Verified by MasterCard) for e-commerce, and the slow development of e-commerce has not created the necessary killer application in internet payments. Besides, due to the high level of banking access in most European countries, prepaid accounts are not even demanded by the recently arrived immigrants (the only segment of the European population that is not almost totally banked). As a result of the lack of demand, e-Money has neither been used as a new payment method nor as a gateway to banking the unbanked.

Regulation however has also played a role in the slow development of the e-Money industry in Europe. An overly restrictive regulatory and supervisory regime for ELMIs and a lack of legal certainty are the usual arguments when analyzing the regulatory impact of the EMD in the development of e-Money. Besides, since the European experience is unique in developing a regulatory framework for e-Money and e-Money issuers, it is relevant to analyze whether the EMD has met its objectives.

5. Conclusions: Evaluation of the Directive's Results

According to the preface of the EMD, the main objectives of the directive were: first, to create legal certainty and contribute to the development of e-commerce. Second, avoid hampering technological innovation. Third, preserve a level playing field. Fourth, ensure the stability and soundness of issuers. Fifth, facilitate access by ELMIS from one member state into other member state.

5.1. Create legal certainty and contribute to the development of e-commerce

The EMD provides a definition of "electronic money" (article 1.3) and it also specifies the regulatory and supervisory framework. It also provides harmonization by mutual recognition of authorization (recital 4) "The approach adopted is appropriate to achieve only the essential harmonization necessary and sufficient to secure the mutual recognition of authorization and prudential supervision of electronic money institutions, making possible the granting of a

single license recognized throughout the Community and designed to ensure bearer confidence and the application of the principle of home Member State prudential supervision.”

However, although the EMD has successfully created a legal framework for e-Money, some questions remain regarding the legal certainty required to apply the EMD to certain services such as account-based schemes (there is an important degree of disparity between national authorities regarding whether or not they should be considered e-Money; Finland has resolved the problem by including an explicit mention of account-based systems); electronic vouchers; prepaid debit cards and electronic traveler’s checks that also challenge the notion that e-Money is to be used only for micropayments.

The EMD also has problems of applicability regarding issuers such as mobile network operators. The EC Note has not succeeded in eliminating uncertainty regarding the applicability to mobile network operators of the Directive. The EC Guidance Note argues that the EMD does not apply to systems where there is no direct debtor/creditor relationship, but it seems to be inconsistent with other payment systems.

Besides, the new European Payments Directive (2007/64/EC) does not resolve this legal uncertainty for MNOs since it clearly specifies in recital 6 that “The content of these goods or services may be produced either by a third party or by the operator, who may add intrinsic value to them in the form of access, distribution or search facilities. In the latter case, where the goods or services are distributed by one of those operators, or, for technical reasons, by a third party, and where they can be used only through digital devices, such as mobile phones or computers, that legal framework should not apply as the activity of the operator goes beyond a mere payment transaction. However, it is appropriate for that legal framework to apply to cases where the operator acts only as an intermediary who simply arranges for payment to be made to a third-party supplier.”

Transport providers also pose problems, and some national regulators argue that an exemption should be created for not being considered e-Money when they are accepted by different transport providers. As a result, we can conclude that the definition of e-Money is not clear enough, and that either through a revised definition, inclusion of specific exemptions, or specially adapted rules for certain issuers whose core business is not payment services (MNOs), this uncertainty should be resolved.

Legal uncertainty has therefore discouraged new market entrants and hampered innovation. Besides, the discretion given to member states to waive some of the provisions based on certain criteria is another factor that is contributing to legal uncertainty by creating national differences.

5.2. Avoid hampering technological innovation

The Directive introduces a technology-neutral approach (recital 5), since it does not enter into technical specifications. The definition of e-Money clearly states that e-Money is “stored on an electronic device.” The directive is therefore applicable to all types of technologies, so it does not promote any in particular and therefore tries not to hamper technological innovation, avoiding the risks that strict technological rules might have on innovation and competition.

Although technological neutrality has been achieved, the lack of adaptation in the definition of electronic money might have hampered the development of account-based systems. Therefore despite the fact that the EMD has remained mostly technology-neutral, there are doubts over

the applicability to certain business models generally that have to do not with the electronic device used but with the nature of the product and the issuer.

The beneficial treatment of MNOs has hampered technological innovation. However, mobile operators see the application of the EMD to their business unnecessary since the risks involved are minimal. Besides EMD requirements such as capital and funding, limitation of investments, redeemability and anti-money laundering provisions will force mobile operators to create payment services that would be only developed in partnership with financial institutions.

On the other hand, the problems related with gift cards and vouchers have not allowed this market to become electronic. Besides, differing national implementations might jeopardize the technology-neutral approach proposed by the EMD. This is the case of account-based systems, where the value is stored on a centralized server, and where the applicability of the EMD is not clear. One possible solution to this is adding a definition of “electronic device,” including not only chip cards or computer memory, but also central servers, mobile telephones, PDAs, etc. However the risk is that, since it is impossible to foresee future technological developments, it may jeopardize technological neutrality in the longer term.

In conclusion, there are no technological restrictions in the EMD that might have hampered innovation. However too-strict requirements and burdens for ELMIS are excessive in view of the risks involved in e-Money issuance and may have delayed the entry of new operators and therefore hampered innovation.

5.3. Preserve a level a playing field

The Directive aimed at creating “The highest degree possible of a level playing field between different types of institutions” that can issue e-Money, whether they are traditional credit institutions or the electronic money institutions (recital 12). In order to ensure fair competition and adequate supervision of ELMIs, the explanatory memorandum states that the supervisory regime to which credit institutions are subject to should also be applied in an appropriate manner to electronic money institutions (recital 11).

This “appropriate manner” aims at creating a lighter and more targeted regulatory and supervisory framework for ELMIs with reduced capital requirements, capital adequacy ratios, non-application of solvency ratios and large exposure risks (recital 12). On the other hand, the investment possibilities of ELMIS are also much more restricted than those of banks (recital 12).

The issue of competition and “creating a level playing field” is one of the most controversial issues of the EMD. Although there are no serious issues in terms of competition between ELMIs and traditional banks, the most important concern in this regard is the appropriate treatment of prepaid services of mobile network operators vs. ELMIS.

In order to solve these issues, MNOs want to establish a clear distinction between issuers whose core business is not payments and issuers whose core businesses is payment services. The lack of a different regulatory framework discourages mobile operators due to the regulatory risk, and imposes disproportionate obligations in terms redeemability, guarantee schemes and accounting separation.

On the other side, most ELMIs consider that their requirements are excessive. In particular the capital requirements seem to represent a significant barrier to market entry. Reducing initial capital requirements would solve that problem, as well as the problem of becoming a fully

licensed ELMI when operating under a waiver. Reducing capital requirements to 0.5 million Euros is the solution proposed by the industry.

Finally, the waiver has the potential of facilitating the development of e-Money issuers when implemented in a comprehensive and harmonized way, such as in the Czech Republic. Raising the purse limit could be a way to strengthen this instrument without hampering competition with fully licensed ELMIs. Besides, national differences between member states should disappear in order to create a harmonized and unified regulatory framework.

5.4. Ensure the stability and soundness of issuers

The Directive emphasizes in its explanatory memorandum that the financial stability of ELMIs has to be secured with a regulatory framework that is light enough to ensure that electronic money institutions can compete on a level playing field with traditional credit institutions, but also one strong enough to ensure stability and soundness of issuers.

Recital 12 of the EMD states that “This is achieved since the above mentioned less cumbersome features of the prudential supervisory regime applying to electronic money institutions are balanced by provisions that are more stringent than those applying to other credit institutions, notably as regards restrictions on the business activities which electronic money institutions may carry on and, particularly, prudent limitations of their investments aimed at ensuring that their financial liabilities related to outstanding electronic money are backed at all times by sufficiently liquid low risk assets.” On the other hand, recital 13 also demands that ELMIs “have in place internal structures which should respond to the financial and non-financial risks to which are exposed.” The most important provisions contained in the Directive that ensure the stability and soundness of issuers are the ones that limit their business activities and investments, and that determine that electronic money must be redeemable at par value.

The EMD has indeed been successful in ensuring the stability and soundness of e-Money issuers. However, the regime might be too strict, which partially explains the low take-up of e-Money issuance. A less restrictive regime might have been sufficient to ensure the stability and soundness of e-Money issuers. There is room for adopting a more risk-based approach without endangering the stability of issuers or the adequate protection of consumers. A specialist source book (such as the United Kingdom), instead of the traditional one applied to credit institutions, would solve the problem.

Investment restrictions are perceived as the most important regulatory obstacle. That is why, under certain conditions, some issuers might even prefer the banking regime because it allows more flexibility on how to use and invest the float. Besides, accepting receivables as an allowed investment is of great importance for some issuers such as PayPal. When an e-Money account is funded through a credit or a debit card, e-Money is issued immediately and increases the float and thereby the required investments on liquid assets. However, since payments from cards are delayed one to three business days, PayPal’s parent company has had to inject very large amounts of cash in order to meet the requirements of the EMD directive. This problem would be resolved if card receivables were accepted as ELMIs’ allowed investments.

5.5. Facilitate access by ELMIS from one member state to other member state

The Directive aims at facilitating ELMIS from one member state to operate in another by allowing “mutual recognition of home supervision in the framework of harmonized prudential

rules as are applied to credit institutions.” To achieve this objective the Directive extends the concept of the “single license” also referred as “single passport” to e-Money institutions.

The passport regime of the provisions are appreciated but not widely used since the industry has not developed. However PayPal, the only ELMI that has been able to expand extensively in Europe, has found problems related to the fact that passport regimes for ELMIs are inferior to those applied by banks (2000/12/EC – article 2 (2)).

2.3. Review of the e-Money and Agent Regulation in Developing Nations

1. Review of the e-Money Regulation in Developing Nations³⁹

Most of the mobile banking success stories we have found have been based on flexible regulatory approaches to e-Money and agent regulation. *Over the last few years, some regulators, especially in Asia, have made an effort to regulate the issuance of e-Money.* For example, in the Philippines, where two of these success stories, Smart Money and GCASH, are based, the central bank, Bangko Sentral ng Pilipinas (BSP), has practiced a flexible but hands-on role in the emergence of mobile banking, finding ways to permit innovation within safe, sound and prudent standards.

In the past eight years, BSP has supported the development of two different arrangements for two mobile operators: in one model, banks are permitted to outsource a substantial range of activities to the mobile operator, Smart Communications (Smart), via a system of pre-paid accounts introduced in 2000 and expanded in 2003.

In the second, a subsidiary of the mobile operator, Globe Telecom (Globe) offers virtual stored-value accounts which enable mobile phone customers to make payments and money transfers. Globe’s subsidiary, known as G-Xchange, Inc. (GXI), is regulated as a remittance agent, permitting a non-bank-based model also using pre-paid accounts introduced in 2004. As a condition of their permission to launch, Smart Money and GCASH each agreed to furnish detailed operational data to the BSP.

This flexible but hands-on role policy was based on the Filipino government’s commitment to extending financial services to unbanked low-income populations. Indeed, with its fragmented geography and the limited reach of the formal banking infrastructure, mobile banking is a very efficient business model for expanding financial access among the unbanked. Besides, the widespread familiarity of and comfort with mobile phones and tendency to use mobile phones for more than voice services made Filipinos more willing to use their mobile phones for financial transactions.

After the initial success of GCASH and Smart Money, and following its hands-on policy, BSP issued In March 2009, an E-Money Circular (following the FSA model), giving more clarity to

³⁹ This chapter has been prepared reviewing the “CGAP, Notes on Regulation of Branchless Banking, January 2010;” available on www.cgap.org

the e-Money sector. Both GXI and Banco de Oro (Smart's bank partner) have applied and become e-Money issuers.

E-Money Circular 649 regulates e-Money as an activity rather than by the legal character of the e-Money issuer. The circular defined e-Money as: "monetary value as presented by a claim on its issuer that is i) electronically stored in an instrument or device; ii) issued against receipt of funds of an amount not lesser in value than the monetary value issued; iii) accepted as a means of payment by persons or entities other than the issuer; iv) withdrawable in cash or equivalent, and v) issued in accordance with Circular 649."

Circular 649 specifies that electronic instruments can be cash cards, e-wallets accessible through mobile phones or other devices, stored value cards or other products. It also specifically states that e-Money issued by banks is not considered to be a deposit. This ensures that the circular abides by the Manual of Regulations for Banks (MORB) and guarantees that agents can perform cash-in/cash-out functions.

Circular 649 classifies e-Money issuers as banks, non-bank financial institutions supervised by the BSP, and non-bank institutions registered at the BSP as money transfer agents (EMI-Others). There is an aggregate monthly load limit for e-Money instruments of PHP 100,000 (approximately US\$866). The circular prohibits the payment of interest on e-Money. In addition, pursuant to the circular, e-Money is not insured by the Philippines Deposit Insurance Corporation.

The circular establishes other principles such as a redress mechanism for consumer complaints, provision of clear guidance for consumers' right of redemption, as well as a requirement for tracking methods for e-Money instruments and users. Circular 649 mandates the establishment of minimum system controls (e.g., management, administrative and accounting procedures, computer systems, security measures and audit functions) before institutions can become e-Money issuers and also requires e-Money issuers to provide quarterly financial statements to the BSP.

Lastly, Circular 649 sets forth that e-Money issuers that are registered as money transfer agents can only engage in e-Money and related businesses such as remittances. If these institutions are dedicated to a different type of business they must issue e-Money through a separate entity formed exclusively to be an e-Money issuer.

In addition, customer funds are protected by requiring these non-prudentially regulated e-Money issuers to keep "sufficient liquid assets equal to the amount of outstanding e-Money issued." For this purpose, liquid assets include bank deposits, government securities and other assets as the BSP may allow. The circular also requires that, to be licensed as a non-bank e-Money issuer, the entity must be formed as a stock corporation and have a minimum capital of US\$2 million (PHP 100 million).

In Indonesia in April 2009, the Bank of Indonesia (BI) issued a regulation concerning electronic money (the E-Money Regulation) and a related circular (the E-Money Circular). Article 1.3 of the E-Money Regulation defines e-Money as a payment instrument that fulfills the following criteria:

- a) It is issued against equal value of the money deposited by the customer to the issuer.
- b) The nominal value of the money is stored electronically in a medium, such as a server or chip.

- c) It serves as a payment instrument for merchants that are not the issuer of the e-Money.
- d) The value of the e-Money deposited by the customer and managed by the issuer is not categorized as deposits, as defined by the Banking Act.

Both banks and non-banks can issue e-Money, and both types of issuers need to obtain a license from BI. The E-Money Regulation and E-Money Circular provide that non-banks are required to obtain a license if the amount of the float under management has reached, or is expected to reach, IDR 1,000,000,000 (approximately US\$100,000). Nonbank issuers have to place 100 percent of the float in a commercial bank where they can choose among a savings account, a current account, or a time deposit account. Float funds can be used only to fulfill the issuer's obligations toward customers and agents. Bank issuers have to report the float under immediate liabilities or other liabilities. Given that e-Money funds are, by definition, not deposits, they are not protected by the Indonesian deposit insurance (although there is no legal prohibition on paying interest on e-Money, BI's interpretation is that e-Money should not bear interest).

However, the ability of e-Money regulation to dramatically change the landscape is questionable, in part due to the requirement that each agent has to obtain a money remittance license. Indeed, although e-Money issuers are permitted, pursuant to BI's E-Money Circular, to use agents for uploading value to e-Money accounts (i.e., cash in), if an e-Money issuer wants to use an agent to offer money transfers and cash-out services, the agent needs to have a money remitter license.

Nor does the AML/CFT regulation favor the development of e-Money issuers. An e-Money issuer must, when opening a "registered" e-Money account, record the customer's identity data: name, address, date of birth and other data as listed in the customer's identity card (no such requirement applies to unregistered e-Money accounts). The issuer can record the customer's data by providing an application form that must be completed by the customer and accompanied by a copy of the identity card. The wording of the e-Money Circular makes it possible for agents to conduct KYC ("know your customer") on behalf of an e-Money issuer. However the requirement to send a copy of the ID card makes remote account opening difficult unless a camera or phone can be used.

Finally, article 27 of the E-Money Regulation stipulates that e-Money providers are required to provide systems that are connectible to other systems of e-Money. Article X of the E-Money Circular reiterates that in the framework of improving efficiency, smoothness and advantage to e-Money users, there must be efforts to develop systems which can be interoperable. As a result, BI may oblige the parties to follow and adjust its systems when criteria or requirements have become an industrial consensus.

Following the regulatory efforts undertaken in the Philippines and in Indonesia, the Indian regulator (RBI) issued its Prepayment Instrument Guidelines in 2009. Until 2009, only banks and financial institutions were permitted to issue e-Money and collect funds for payment to third parties. In April 2009, RBI issued its Prepayment Instrument Guidelines pursuant to the 2007 Payment and Settlement Systems Act. The Guidelines identify three categories of prepaid instruments, which term includes smart cards, magnetic stripe cards, Internet wallets, and mobile accounts and wallets, paper vouchers. The three categories are:

- “Closed” system payment instruments, which may be used only for the purchase of goods and services from the issuer itself and therefore, as explicitly stated, are not classified as payment systems.
- “Semi-closed” payment instruments, which may be used at a group of clearly identified merchant locations and/or establishments that have contracted to accept such instruments, but which may not be used for cash withdrawal or redemption.
- “Open” system payment instruments, which may be used at any point-of-sale (POS) enabled merchant and for cash withdrawal at automatic teller machines (ATMs).

In August 2009, RBI amended the guidelines to permit “other persons” to issue mobile phone-based semi-closed prepaid instruments, but MNO involvement has not materialized yet. Only banks may issue all three types of instruments (and only those banks which have been permitted by RBI to provide mobile banking transactions may launch mobile accounts and wallets).

NBFCs and “other persons” may issue only semi-closed or closed instruments. There are a variety of rules regarding the issuance of these instruments, including minimum capital requirements, special AML/CFT policies, maximum value (Rs. 50,000), minimum validity period (six months), and guidelines for how they can be issued and reloaded. There are also limits on how the collected funds can be used. For example, non-banks must keep the funds collected in a non-interest-bearing escrow account with a scheduled commercial bank, and can collect interest on only a portion of these amounts, and only if other conditions are met. This practice ensures that banks largely continue to control and benefit from the float, and encourages non-banks to focus only on fee-based (rather than float-based) business models.

RBI’s amendment permitted “other persons” to issue mobile phone-based semi-closed prepaid instruments, although such instruments are restricted to a maximum value of Rs. 5,000 (approximately US\$110), cannot be purchased or recharged with mobile phone airtime, and can be used only for the purchase of goods and services (i.e., no person-to-person transfers). RBI has since suggested that these revisions were intended in part to provide MNOs a way to offer customers a “mobile wallet” through banks, thus ensuring that the float would remain with banks, a clear objective of RBI.

In Africa, where two other success stories appeared, we see different levels of development in terms of e-Money legislation. Kenya, where mobile banking’s most relevant success story (M-Pesa) operates, has no laws or regulations dealing directly with e-Money yet. The adoption of e-payment regulations, which would govern e-Money issuers, is linked to the passage of the National Payment System Bill, which would be the basis of their authority. It appears likely that this bill, which has been under discussion for several years, will finally enter the Parliamentary process in 2010, although the speed of passage remains uncertain. The precise nature of regulation would be linked to the scope of the bill, but the expressed intent of CBK is to move to risk-appropriate regulation of the non-bank e-Money issuers. (The primary regulator of e-Money issuers and transferors will be CBK, according to the National Payment System Bill.)

In the absence of any legal framework, the issuing of e-Money by a licensed financial institution does not appear to raise any issues with CBK. With regard to non-banks, CBK’s current approach seems to depend on whether the activities involved in e-Money issuance fall under the definition of “banking business” in the Banking Act or “deposit taking microfinance business” in the Microfinance Act. A non-bank can avoid falling under the definition of

banking business by not lending, investing, or otherwise placing at the risk of such non-bank institution the funds mobilized (i.e., the e-Money proceeds). It is likely that the same conclusion will apply to the definition of deposit-taking microfinance business, although the definition is less easy to interpret.

In Morocco, the Banking law does not allow non-credit institutions to issue open-loop cards. However, closed-loop cards (*cartes privatives*) can be issued by non-credit institutions such as department stores and petrol companies. Currently, MFIs such as Al Amana are in negotiations with the Ministry of Finance and BAM to issue closed-loop cards. Also, the Moroccan government through APP is in the process of financing new initiatives that will allow closed-loop payments instruments to be used by Moroccan MFIs.

In South Africa, home of Wizzit Bank, the National Payment System Department of SARB recently issued a new Position Paper on Electronic Money that restated its position that only South African banks are permitted to issue electronic money (November 2009).

As a result, only banks registered under the Banks Act are allowed to engage in “the business of banking,” which includes taking deposits from the general public. Accordingly, retailers, mobile operators, and entrepreneurs wishing to offer branchless banking services that entail taking deposits from the public must do so alongside banks (whether in partnership, as a joint venture, or as agent).

SARB’s paper defines e-Money as “monetary value represented by a claim on the issuer” that “is stored electronically and issued on receipt of funds, is generally accepted as a means of payment by persons other than the issuer and is redeemable for physical cash or a deposit into a bank account on demand.” Aside from one e-Money program run by FNB (e-bucks), which was a loyalty program to encourage e-banking, there are no open network prefunded payment schemes currently operating in South Africa. The primary reason is that banks, the only institutions permitted to issue e-Money or other stored-value instruments, are heavily invested in the existing payments systems and therefore have little incentive to invest in new systems.

However, payments to third parties may be made by non-banks pursuant to the National Payment System (NPS) Act. The largest non-bank supplier of payment services is Net1/Aplitec, a private company listed on the NASDAQ stock exchange. Net1 provides two major payments products: bill payments and social welfare payments. As a result, a large proportion of payment services such as bill payments and social welfare payments are provided by non-banks, as permitted under the National Payment Systems Act.

For years, various provincial subsidiaries of Net1 have used a smartcard system to make social welfare payments on behalf of the South African Government. Net1’s non-bank character and the size of its business (3.8 million customers using its smartcard) make it significant from a branchless banking perspective. The smartcard operates as a closed-loop system that does not interact with other bank-based payment systems but rather requires the amounts loaded on the smartcards to be redeemed at Net1 mobile cash payment points or used to transact with other smartcards in the Net1 system. Net1 has avoided the prohibition on deposit-taking by non-banks through an arrangement with the relevant government departments pursuant to which Net1 first makes the payments to recipients and then claims from the government. However, the government has now indicated that, for security and welfare reasons, it wishes to move away from cash-based welfare payments in favor of account-based payments.

In Latin America, only Mexico has issued specific legislation on e-Money issuance. In Mexico, the banking law restricts banking business – characterized as deposit-taking – to credit institutions (i.e., licensed commercial and development banks and credit cooperatives). The Commercial Code defines a deposit as repayable funds. Deposit-taking occurs when i) the service is offered to unknown persons or through massive communication media, and ii) the service is offered in a habitual and professional manner.

A recent regulation identifies four types of banks according to minimum initial capital and types of operation. One type is categorized under the label “traditional banks” and three are categorized under the label “niche banks.” Traditional banks require higher minimum capitals and have broader operational scope, while niche banks benefit from lighter requirements (including much less complex prudential regulation) in exchange for a limited scope. This new regulation intends to create a more attractive entry door for non-banks to provide some financial services, such as e-Money issuing, without having to apply for a fully fledged bank license.

Although non-banks are excluded from the deposit-taking business, they may issue prepaid cards that can be used for purchases in commercial establishments which belong to the same business conglomerate as the issuer (e.g., gift cards).

Following a 2004 decree that created tax incentives for electronic financial transactions, Mexican banks formed a trust (FIMPE - Fideicomiso para el Impulso de la Infraestructura de Medios de Pago Electrónico) aimed at expanding the POS network in the country and promoting the use of card payments. A good portion of the total expansion of the POS network in the country is due to Fimpe’s work. However, after the termination of the tax incentives in 2009, the number of POS terminals has already decreased slightly, according to Fimpe.

In addition to its work on POS networks, Fimpe has created a platform for mobile banking to serve any bank, named Nipper. Banxico has also created a model mobile banking platform with direct settlement at SPEI, which seems unlikely to support low value transactions in the short term. However, neither Nipper nor Banxico’s model platform have so far attracted a considerable number of providers.

The government has plans to migrate the largest cash-transfer program – Oportunidades – to electronic payments that would be ultimately channeled into bank accounts. It is currently piloting with Bansefi (the government development bank) and a network of local shops known as Diconsa that function as cash-out points. Such efforts are still in the beginning stages.

Although Brazil led regulation in banking agents, no specific regulation on e-Money has been issued which is perceived as prohibiting non-banks from issuing e-Money. Although prepaid cards may not fall under the definition of deposit (because the prepaid funds may not be repayable), the requirement of the Banking Law that only CBB-licensed and supervised institutions are permitted to collect funds from third parties is generally viewed as prohibiting non-banks from issuing e-Money or other stored-value instruments, such as electronic accounts stored in mobile phones.

CBB has not issued regulations or other guidance on non-bank prepaid schemes. There are conflicting interpretations of the Banking Law regarding i) what constitutes collection of funds; ii) whether prepaid schemes could involve collection only or intermediation, and iii) how this fits with the legal requirement that only licensed financial institutions may engage in collection and intermediation of funds.

Banks with large agent networks are aware that going cashless is essential to providing a wider array of services at agents. Since cash handling is the main cost of agents in remote areas, the evolution of this branchless banking model will necessarily require CBB to push for innovation, efficiency and interoperability of electronic payment systems to diminish the use of cash.

CBB's Department of Banking Operations and Payments System is open to new models within the retail payment system and is currently considering regulations and/or guidelines on electronic stored-value accounts based on the experience elsewhere, such as in the Philippines, South Africa and the European Union. However, CBB has not issued any position or taken any measure regarding open-use prepaid instruments issued by non-banks. This lack of regulatory framework and the particular dynamics of the Brazilian market (the stage of competition in the mobile phone sector and the lobby exercised by banks) have hindered the development of non-bank-based branchless banking models.

In Colombia, there is no regulation on e-Money, viewed as prohibiting non-banks from issuing e-Money. Nonbanks can issue e-Money provided that it does not constitute deposit-taking (i.e., repayable funds). Regulations that explicitly allow non-banks to issue electronic money could end legal uncertainty around this issue.

The banking law defines credit institutions as those able to take demand or time deposits for financial intermediation. They are the only entities authorized to take deposits from the public. SFC is legally required to sanction others engaging in "massive and habitual collection of funds from the public."

A deposit is defined as repayable funds (other than loans). Massive and habitual deposit taking is defined as cash or virtual money kept by the "collector" with no obligation of providing a service or good in exchange when at least one of the following conditions is met:

- There are more than 20 depositors or more than 50 obligations (deposits).
- In a period of three consecutive months, the collector incurs more than 20 contracts to manage funds from the public or sells credit instruments with a resell obligation.

In addition, deposit taking requires one of the following conditions to be true: a) the value of the funds collected surpasses 50 percent of the collector's equity, or b) the operations result from offers to unknown people.

In Argentina, there is no regulation on e-Money, although the industry is developing with services like the Monedero transport card. Payment services not linked to a bank account, such as reloadable prepaid cards or prepaid mobile phone-based accounts, are hindered to a certain extent by the lack of specific regulation or generic e-Money regulation.

Services like Monedero (a reloadable metro card issued by a transportation company in the Buenos Aires area) are considered retail payment services and, therefore, are not subject to prudential rules, licensing or registration, even if they offer electronic storage of funds.

It is currently unclear whether non-banks may offer electronic storage of redeemable funds, given that only banks and cooperatives are allowed to take deposits from the public. This lack of legal certainty discourages potential market entrants.

2. Review of the Regulation on Agents Marketing Financial Services

The development of e-Money legislation goes opposite to the development of a regulatory framework for agents. For instance, Latin America, the least active region of the world in issuance of e-Money regulation, has been the most active in issuing agent regulation.

Brazil, the first country to massively use agents for the distributions of financial services, created the framework for retail agents in the 1970s and reformed it in 1999 to increase efficiency in the area of welfare payments.

Prior to 1999, the following services could be outsourced to agents: receiving loan applications, analyzing credit and personal information of loan applicants, collecting loan payments, and processing data. The 1999 reforms expanded this list to include receiving account opening applications, performing deposits and withdrawals, and effecting bill payments. Based on the 1999 regulation, Caixa Econômica Federal partnered with over 9,000 lottery outlets in what became the first large-scale retail agent scheme in the country.

Further regulatory changes in 2000 removed the prohibition on banks using agents in locations with bank branches. In response, Caixa rapidly covered all municipalities in the country, signing up other types of retail agents beyond lottery outlets. By year-end 2000, the total number of agents being used by banks reached 64,000. New regulations were issued in 2003 as part of the government's financial inclusion policy, permitting any financial institution to hire any type of agent.

Until 2008, CBB authorization was required if an agent were to engage in "banking services", namely checking and savings account transactions (e.g., account opening applications, deposits, withdrawals, investment funds, and payments). However, CBB no longer needs to authorize agents. The process is simple, and banks are required to register their agents online.

Today, there are more than 150,000 registered agents throughout the country delivering financial services on behalf of CBB-licensed and supervised entities, including credit cooperatives – a remarkable 60 percent increase in two years, from approximately 95,000 agents at the end of 2007. There is at least one agent or branch office of a prudentially licensed and supervised bank in each of the country's 5,564 municipalities.

Two major banks (Caixa and Banco Postal) cover every municipality in the country. Most agents are commercial establishments, such as grocery stores, post offices, notaries, and lottery outlets, but a financial institution may also act as an agent.

Agents conducted 2.3 billion transactions in 2008. This represents 5.24 percent of the 43.9 billion total bank transactions, up from 4.75 percent in 2003. Branch transactions, which used to represent around 20 percent of all bank transactions, now represent only 10 percent. (ATMs are the most used electronic channel.)

Agents offer several types of services, from bill payments to account opening procedures, but less than 30 percent of the agents handle bank accounts. Most specialize in receiving bill payments, which account for approximately 75 percent of all agent transactions (47 percent of which are utility bill payments). Withdrawals and deposits account for 12.6 percent and are nearly equally divided into savings and current accounts (including simplified accounts). Only 0.16 percent of the transactions are account opening; 7.3 percent are government transfers.

The central bank's supportive regulation governing the use of agents has resulted in an increase in access to financial services such as bill payments, transfers, and deposits. The CBB collects information from several of the major agent schemes (on an ad hoc basis only, as the overall risk of the agent business is deemed low) as a means to inform regulatory action. The principal is fully responsible for the services rendered by its agents. CBB requires the principal to: i) control the activities of each of its agents by setting transaction limits and implementing mechanisms to block transactions remotely when necessary, and (ii) to ensure compliance with all applicable legal and regulatory provisions, such as AML/CFT, customer protection, and data privacy. An agent must post a notice in its establishment that it acts on behalf of the bank.

The agent networks can be managed directly by the bank or outsourced to a third party, which is then considered an agent by CBB (and referred to as a network manager). Network managers provide a wide range of services, including selection of agents, training related to Anti-Money Laundering/Combating Financing of Terrorism (AML/CFT), maintenance of POS, software development, cash handling, and marketing. The network managers often respond to the bank for the actions of the agents in their network.

However, there are still obstacles to the expansion of banks' use of agents to deliver credit and savings to poor people:

- "Simplified accounts," which can be handled by agents, are subject to various transaction limitations, interest rate caps and other account-related costs that render microcredit unprofitable for banks, and there is poor credit information available for lower income borrowers.
- Unintended consequences of widespread outsourcing threaten the continuity of the agent model itself. There have been a variety of legal demands such as unions seeking wage equality between bank employees and agent employees and other government agencies dealing with matters such as physical security of agents. The central bank is analyzing the potential impact of these legal demands, but has not yet proposed or implemented changes addressing these or other obstacles.
- In contrast to the use of retail agents by banks (known as "bank-based branchless banking"), non-bank-based branchless banking is only in its incipient stage in Brazil. However, there is remarkable potential for non-banks to compete for customers with low-value accounts, since approximately 70 percent of the adult population still lacks access to bank accounts
- Moving and protecting cash is costly, risky and time-consuming. According to research conducted by CGAP and the Fundação Getulio Vargas business school, 41 percent of agents have been robbed in the past three years.

In Colombia the Decree 2233/2006 allowed banks and commercial finance companies to use agents. Decree 303/2007 and Decree 2965/2006 extended the permission to brokers and credit cooperatives, respectively. According to agency regulation, any type of legal entity, including savings and credit cooperatives, may with prior SFC authorization be hired by a SFC-licensed institution as an agent to deliver financial services either on its own premises or in other locations where its services/products are offered.

Agents may provide most banking services, including bill payments, transfers, deposits and withdrawals, disbursement or repayment of loans, receiving and forwarding account opening and loan applications for the bank's approval, and national wires.

The financial institution remains fully liable for services provided through agents and for the agent's actions. The financial institution must set up adequate internal controls to monitor their agents and may use a third party (e.g., a network manager) to manage the agent network. For the purposes of SFC review, the contracting financial institution must keep all information and documentation related to agent activities. SFC may inspect agents.

The agency regulation sets forth minimum contractual clauses that every agency contract must contain, such as: reference to the financial institution's full liability and the description of risk-mitigation measures (AML and combating the financing of terrorism [CFT], transactional limits, financial settlement, and insurance).

Agent transactions must be authorized online via dedicated terminals meeting minimum requirements set forth by SFC regulation. Agents cannot i) operate if the communication with the financial institution fails; ii) grant loans without authorization of the financial institution; iii) charge extra fees; iv) offer any guarantee to bank clients, or v) offer financial services without an agency contract with a financial institution.

The regulation requires banks to design their marketing and visual publicity around agents to inform the customer that the service is being provided on behalf of a licensed financial institution. Every transaction must produce an automatically generated receipt with the name of the bank. The bank is required to install mechanisms to receive customer complaints against agents. In addition, an agent is required to post various requirements on visible signs at its premises.

To avoid double incidence of the *cuatro por mil* tax in agent transactions, Banca de las Oportunidades successfully coordinated with the tax authority to exempt agent accounts (with their banks) from this tax (i.e., the transactions between the agent and its bank are considered part of a single taxable bank transaction).

A 2009 modification of the SFC Basic Banking Circular simplified AML/CFT procedures for low-value electronic accounts and mobile accounts that are opened via agents (who receive and forward the application materials). People opening such accounts are not required to complete the application form nor have an interview with a bank employee. Instead, they must provide identification information such as their name, identification number, and place and date of birth. Accounts opened remotely are to be subject to stricter AML/CFT monitoring by the bank.

However, Colombian banks' use of agents has not played out as expected. There was an expectation that banks would engage agents, thereby considerably increasing the number of financial service access points and the number of banked Colombians. However, for specific reasons, the model does not present an appealing business case for either side (banks or agents).

Three years after adoption of the agency regulations, there were 5,617 agents (most of them lottery agents) that handled an average of 1.1 million transactions per month, with a value of over US\$107 million. The majority of the transactions are utility bill payments. Only a few banks use agents to initiate account opening procedures (e.g., receiving customer applications and forwarding them to the institution) and disburse loans.

Most agents are located in Bogotá, the nation's capital, although 763 municipalities now have at least one agent. Citibank alone accounts for over 75% of the country's agents, and uses them almost exclusively for bill payments and deposits from existing customers. It successfully renegotiated contracts with utility companies to improve profits from utility bill payments.

On the other hand, Bancolombia, one of the largest Colombian banks, was working with agents for a few years before the agency regulation was issued. Its agents, known as PACs (Puntos de Atención Cercana), promoted services and initiated account opening (an agent would forward a client's application; the client would then go to a branch to open the account and transact). When the 2006 agency regulation came into force, 61 of the 240 PACs were transformed into agents (most likely all will transform, but the technology requirements are costly to implement). Although this network is not as large as CitiBank's network, in April 2009, 43 percent of all agent transactions were done through Bancolombia agents and approximately 64.7 percent of the aggregate amount of all agent-handled transactions were channeled through Bancolombia agents.

The expansion of the agent banking model faces challenges that are generally related to costs and profitability:

- Deposit fees: In remote areas where private banks were generally absent, the few existing agents deposited their excess liquidity in Banagrario, a government bank that owns the largest branch network in the country. Banagrario then charged high fees for this service, adding excessive costs to the agent business in rural areas.
- Cash handling is costly in some urban areas, too, where agents often hire expensive private cash transport companies to manage security challenges in a country still struggling with high crime levels. As of April 2009, approximately 77 percent of all agent transactions were cash-in transactions (deposits and bill payments), which shows the importance of cash-handling costs.

Some banks remain wary of using agents. Generally, the banking sector has limited experience with agents, particularly with respect to managing agent liquidity and mitigating the risk of agent fraud. Banks are concerned that selecting, equipping and training agents will require significant investment of time, money and equipment. This perception is further aggravated by "traditional" agreements between banks and utility companies to not charge for bill payments, thereby depriving banks of a potential source of revenue in the agent business.

Other obstacles include the meager marketing support offered by banks to their agents and constant failure of the systems connecting banks and agents. Aware of such difficulties and perceptions, BDO has, since mid-2008, provided subsidies for banks to cover some aspects of the agent operation in the municipalities that lack financial services.

In Mexico, banks have been using agents for many years, although the underlying regulatory framework has changed significantly over time. Until 1993, banks could use agents – known as *comisionistas* – to deliver a variety of services. The outsourcing was subject to the CNBV's supervision and the bank was held responsible for the agent's Acts. From 1993 until early 2008 banks were prohibited from using agents.

In December 2008, the CNBV issued its agency regulation pursuant to which banks may hire legal entities and individuals to deliver a wide array of services, subject to an authorization process that includes the submission of a full business plan for the agency business and the

compliance with a suite of security and technological requirements set in complementary regulation applicable to electronic payments. Agency agreements cannot be subcontracted to third parties and may not have exclusivity clauses.

CNBV has the prerogative to conduct on-site inspections of agents if it deems it necessary. The bank's general manager is held responsible for complying with the agency regulations. Agency regulations impose a particular limitation: agents may only receive monthly deposits up to the equivalent of 50% of the bank's average monthly deposits in the last 12 months. This limit does not allow the emergence of a bank that primarily operates through agents, but so far has not proved a real obstacle for the current players. Permission to use agents has not been extended to the popular finance sector (*cajas*).

Recently, Banxico issued a regulation on mobile accounts. Mobile accounts are accounts associated with a mobile phone number that permit relaxed identification and information requirements, provided that the accounts are subject to caps on the number and value of transactions. Banks can open these accounts via agents (including MNOs), and must produce a file with the client's name, date of birth and address. Monthly deposits are limited to MXN 8,720 (2,000 UDI).

The accounts are divided into three categories reflecting varying AML/CFT (and security) risk: low-transaction accounts, low-risk accounts and unlimited accounts. Mobile accounts may fall into one of the two lower-risk categories (i.e., "low-transaction" and "low-risk" accounts). The new regulations on types of electronic accounts are supposed to support three main business lines that may cater to the unbanked: mobile banking (no limits on transactions, high-value payments), mobile payments (low-value payments, with two levels of AML/CFT and security controls), and e-Money (micro-payments, up to a balance of MXN 305.20 or 70 UDIs, without security control).

However, a 2007 law, effective since June 2008, introduced a tax on cash deposits and may jeopardize the development of agents in Mexico. The IDE (Impuesto a los Depósitos en Efectivo) is a 2% withholding tax that applies to all cash deposits in the banking system that accumulate above 25,000 pesos (US\$1,947.60) within a month for a single bank customer. This tax has a significant effect on agents: each agent's operating account is subject to the IDE. Even though this tax is creditable towards annual income tax, many agents are likely to be informal, in which case this tax would represent a cost. In any case, this tax introduces complexity to the agent business.

In Argentina, BCRA is drafting a regulation to allow banks to use agents to deliver financial services through third-party establishments. The banking law does not define deposit-taking, but all entities carrying out habitual intermediation between demand and supply of financial funds are subject to prudential regulation and supervision by BCRA and cannot perform any other commercial activities. (Credit-only institutions, such as microfinance institutions (MFIs), credit card companies, and consumer finance companies are not regulated, supervised, or monitored by BCRA.)

The Banking Law and a general law on security set rigorous physical safety requirements for cash handling venues of financial institutions. The rules are tiered and get more demanding as more cash is handled at individual cash points. It is not clear whether these requirements would apply to agents. Although agents and their commercial establishments are, by definition, different from bank branches, conflicting interpretations regarding the applicability of branch safety requirements to agents could seriously threaten the development of branchless banking.

The success of future regulation in encouraging the use of agents will depend on how well that regulation balances risk-mitigation provisions (AML) with openness, as well as the regulation's timing. In addition, BCRA and some banks anticipate the possibility that agent employees will demand treatment equal to bank employees, especially with respect to wages (as has been the case in Brazil). This is a real concern given the political power of Argentine labor unions and the power of the labor law to supersede a future agency regulation.

In Africa the development of agent regulation has been slower than in Latin America. In South Africa, the South African regulatory framework gives wide discretion to banks to use non-bank third parties to offer banking services beyond their traditional branch network, either as agents or through outsourcing arrangements.

The Banks Act allows a bank to contract agents "to receive on [the bank's] behalf from its clients any deposits, money due to it or applications for loans or advances, or to make payments to such clients on its behalf." The only restriction is that a bank may not enter into an agency agreement until it has provisioned for the bank's organizational extensions, purchase of a business, losses (including any loss suffered from a sale of assets), and bad debts.

A 2004 SARB circular was issued in response to questions by banks regarding proposed outsourcing arrangements. It provides guidance for outsourcing arrangements that could i) have a bearing on the risk profile of a bank; ii) affect the systems and control of a bank; iii) be classified as being of strategic importance, or iv) have implications for SARB and its supervisory duties.

The circular does not specify which bank functions may be outsourced, but it does prohibit the outsourcing of a bank's compliance function and permits the outsourcing of the internal audit function only on a case-by-case basis. Furthermore, any outsourcing arrangement covered by the circular will be subject to SARB scrutiny.

The wide discretion accorded to banks in their use of agents has enabled banks to provide banking services outside of their traditional branches. However, requiring agents to perform in accordance with the internal policies and standards of the bank may result in the exclusion of smaller establishments that are more likely to be located in low-income areas but, unlike larger retailers, do not have the resources to satisfy the bank's internal control and audit standards.

In Kenya, legislative initiatives in banking agents and AML/CFT signal policy makers' keen interest in creating an enabling environment for branchless banking. The government of Kenya is keenly aware that the existing legal and regulatory framework (including banking, payment systems and telecommunications) is not optimal for the development or long-term growth of branchless banking models.

These initiatives include: i) a 2008 regulation permitting microfinance deposit-taking institutions to use agents; ii) a 2009 amendment to the Banking Act that permits banks to appoint agents to take deposits and perform other activities (currently drafted to be followed by detailed regulations) iii) passage by parliament in late 2009 of an AML/CFT bill, which applies to both bank and non-bank institutions. Unfortunately, the new bill poses potentially burdensome requirements on small-value transactions and remote account openings, and iv) In addition, a National Payments Systems bill is expected to enter the parliamentary process in 2010 which will include the regulation of e-Money.

With respect to non-depository MFIs, the Microfinance Act leaves it to the Ministry of Finance to prescribe regulations. Given that such institutions are not subject to any restrictions under the Microfinance Act itself, the ability of a credit-only MFI to use an agent depends on the common law of agency. Regarding other non-banks' use of agents, there are no specific restrictions under applicable Kenyan law.

Currently, none of the Kenyan commercial banks is using agents to conduct both cash-in and cash-out services. However, agents of Postbank (fully owned by the Kenyan Government) accept cash and pay out cash on behalf of Postbank.

Equity Bank is offering cash-out services at supermarkets, hotels, restaurants and an assortment of other consumer outlets, but only in combination with the purchase of goods and subject to limitations on how much may be withdrawn in any one transaction. There is no fee charged to customers for the purchase of goods and services. There is a fee of KSh 25 (approximately US\$0.32) for cash withdrawal.

A few new branchless banking services have recently sprung up in the area of money transfers. K-Rep Bank, in partnership with mobile service provider Zain and software provider PacketStream, has launched a money transfer service facilitated by POS terminals and with mobile phones facilitating data transfers.

A few MFIs that are preparing to apply for a deposit-taking license under the new Microfinance Act see branchless banking as an integral part of their growth strategy. Jamii Bora has already equipped all of its branches and field staff with POS terminals and its 250,000 members with magnetic stripe cards.

In Asia, the development of agent regulation has also been slower than in Latin America. India has made the biggest effort in terms of agent regulation. Until 2006, banking activities could be conducted only by licensed banks and could not be outsourced. In 2006, RBI issued a circular that, for the first time, allowed banks to use third-party business correspondents (BCs) to deliver financial services outside bank branches. However, early experiments by banks have failed to reach significant scale, and more generally, banks' interest in using BCs has been limited due in part to restrictions imposed by the circular. A 2009 revision to the circular removed some of the key restrictions, although it is not clear that banks see BCs as offering a compelling opportunity to grow their businesses.

Pursuant to the BC Circular issued by RBI in January 2006, 12 banks were permitted to use BCs for a variety of services: i) identification of borrowers; ii) collection and preliminary processing of loan applications including verification of primary information/data; iii) creating awareness of savings and other products and education and advice on managing money and debt counseling; iv) processing and submission of applications to banks; v) post-sanction monitoring; vi) disbursement of small-value credit; vii) recovery of principal and collection of interest; viii) collection of small-value deposits; ix) sale of microinsurance and other third-party products, and ix) receipt and delivery of small value remittances and other payment instruments. Pursuant to the BC Circular, banks are liable to their customers for their BCs' acts of omission and commission.

While the BC Circular was an important step in facilitating bank-based branchless banking models, it also placed restrictions on the model, including: i) limiting the institutions eligible to operate as BCs to non-profit institutions, post offices and cooperatives, and ii) prohibiting

banks from charging customers for services rendered by BCs, thereby preventing cost recovery and limiting available funds for fees to BCs.

On November 30, 2009, RBI issued significant revisions to the 2006 Circular. First, the revisions permit banks to charge customers “reasonable fees” for using BCs under Board-approved policies, a change that improves the business case for banks and should enable better compensation for BCs, particularly as they expand the range of services offered.

Second, the revisions expand the scope of permissible BCs to include individual “kirana” (local grocery stores), medical and fair price shop owners; individual Public Call Office (PCO) operators; individuals who are petrol pump owners; agents of small savings/insurance schemes; retired teachers; and functionaries of well-run SHGs linked to banks. NBFCs were notably absent from the new list of permissible BCs, despite being recommended for inclusion by the working group. Many believe that MFI NBFCs would be well poised to reach underserved customers on behalf of banks, given their extensive existing physical infrastructure and customer relationships. However, RBI appears to be concerned about commercial entities making a profit based on charges imposed on the poor, and consequently opted against NBFCs as BCs.

Third, the revisions make allowances for reaching the highly underserved northeastern regions, including exemption processes for permissible BC entities and from certain accounting standards. Also, in April 2009, RBI increased the maximum distance permitted between the place of business of a BC and the bank branch, from 15 km to 30 km, further facilitating the expansion of BCs.

In Indonesia, the Bank of Indonesia (BI) does not permit banks to provide financial services through agents (other than limited payment services for existing customers in regions that are already serviced by a bank’s branch), notwithstanding ambiguities in the law that could be interpreted otherwise, as acknowledged by BI. Indeed, payment points are a form of branchless banking, namely a bank providing services through a non-bank agent. However, they are subject to two major limitations. First, payment points are restricted to the same region in which the parent bank branch is located, which curtails the potential to reach very remote customers. Second, the benefit is reserved for already existing customers.

There are also restrictions on non-banks’ use of agents, including the requirement that any agent offering money transfer or cash withdrawal services be licensed as a money transferor. These restrictions limit the ability to achieve the necessary scale to make a low-value transaction business sustainable.

Furthermore, banks are not allowed to outsource “know-your-customer” (KYC) account-opening procedures, thereby precluding customer acquisition beyond the reach of bank branches. In addition, the KYC rules for account opening and financial transactions by non-banks engaged in the provision of financial services are costly and, for some providers, not feasible.

In the Philippines, the most significant regulatory obstacle to the further growth of branchless banking has been the restrictions placed on both banks’ and non-banks’ use of agents. Banks are not allowed to outsource their inherent banking functions to third parties, nor their KYC responsibilities, although the BSP is considering the possibility of permitting agents to perform KYC.

As a result, the commercial banking sector has been slow in taking banking beyond traditional bank branches, due primarily to these limitations on banks' use of agents. However, the strong government emphasis on microfinance is starting to change the traditional market focus of commercial banks, creating a strategic imperative to explore branchless banking models.

One of the strongest drivers of interest in branchless banking is the large flows of international remittances into the country by overseas Filipino workers (OFWs). Non-banks may use remittance agents only for distribution of payments and for KYC. However, certain requirements imposed on agents have inhibited the signing up of agents. With recent regulatory changes (including the permitting of mass licensing) the situation is already changing dramatically. For example, remittance agents' GCash and Smart strategies will change with mass registration of 15,000 new GCASH agents accredited by the BSP; as well as new Smart agents expected to be registered in the next couple of months.

Converting cash into electronic value, and vice versa, is a key feature for clients living in a largely cash-based economy. Yet until 2009, the network of places where GCASH and Smart Money customers could do so was limited. Until 2009, there were only approximately 5,000 agents that could do cash-in/cash-out, with many servicing as agents of both companies.

Regulation was cited as a primary reason for limited growth in the number of agents. Initially, agent registration required attending a one-day training session which was not widely available outside Manila. Since 2008, the Central Bank has allowed GXI and Smart Money each to conduct its own training. Both companies can also fly out some of their specialized instructors to train merchants outside of Manila. In addition to the training requirement, the documentary requirements imposed on agents (e.g., audited financial statements) are difficult for some smaller merchants to comply with.

3. Alternative Distribution Networks Based on Agents With Mobile Handsets Connected Through Cellular Technology

3.1. Emerging Mobile Banking Initiatives in Developing Nations

The rapid growth of mobile phone usage and the continuous rise in wireless coverage fuel the expectations that access to financial services through mobiles could resolve the problem of access to finance in developing nations. The involvement of banks and telecom operators in the delivery of financial services by mobile phone, creates – according to the Mobey forum⁴⁰ – four different mobile financial services ecosystems. David Porteous, in 2006,⁴¹ added to this analysis the distinction between four critical roles played in each scenario by the bank or the telecom operator. He argued that the first role to consider is who is legally responsible for the deposits; second, who bears the reputational risk, which implies whose brand is more exposed to the public; third, whether deposits can be accessed through agents or only through bank branches

⁴⁰ www.mobeyforum.org, 2006. Stomar, M., "Mobile Payments Value Chain and business model".

⁴¹ Report produced for the DFID, "The enabling environment for mobile banking in Africa".

or ATMs; and the fourth and final role considered is who carries the payment instruction. Based on this framework, the four business models defined by the Mobey Forum have the following characteristics:

Table 3.1

Classification of emerging m-banking models⁴²

Model name	Bank-centric models	Collaborative models	Independent service providers	Operator centric models
1. Who holds accounts/deposits?	Bank	Bank	Bank	Telco/ Non bank
2. Whose brand is dominant?	Bank	Joint- Non Bank or Telco	Usually non bank or telco dominant	Telco/ Non bank
3. Where can cash be accessed?	Bank	Bank+ alternative agents	Bank+ alternative agent network	Telco network+ other
4. Who carries the payment instruction	Any telco (sometimes 3rd party payment gateway)	Usually specific to one telco	Usually many telcos	Specific to offering telco
Examples	Additive models	Smart/ MTN	SSTA/Wizzit/ Mobipay	Globe/ MPesa

According to this classification, the “bank-centric model” implies only developing new channels for existing banking products. Porteous calls this model “additive” and argues that this type of business model does not resolve the problem of access to finance in developing nations. The three remaining business models presented in the table can however resolve the problem of access to financial services. Porteous call them “transformational models,” since these business models based on prepaid electronic payment systems and cellular technology address the supply inefficiencies that explain the lack of access to finance.

Institutions using these three business models could be the catalysts of a transformation in the way financial services are provided to the less affluent. This chapter will analyze, through case studies, the business models of companies that have implemented “transformational models” of mobile banking in developing nations. First, we will present the case of Smart Money in the Philippines, which shows a partnership between a telco and a bank. Second, we will present the case of SSTA, an independent service provider initiative launched in Colombia, which failed due to the lack of a clear business model. Finally, we will present the cases of GCash also from the Philippines and M-Pesa in Kenya, as examples of operator-centric business models that have succeeded and that today are considered to be best practices worldwide.

3.1.1. Smart Money Mfi Partnerships Build Up

On the 2nd of March 2010, the Philippine Long Distance Telephone Company (PLDT) announced in Manila (The Philippines) that its unaudited financial results for 2009 with

42 Porteous, David, 2006. Report produced for the DFID “The enabling environment for mobile banking in Africa”.

consolidated Reported Net Income increasing by 15% to P39.8 billion, from the P34.6 billion recorded the previous year.

Manuel V. Pangilinan, PLDT Chairman, stated that: “We are immensely pleased to have been able to fulfill our regular dividend commitment but more so, to have been able to declare a special dividend despite higher capex and the Meralco investment. This 100% dividend payout of Core EPS for the third year in a row was made possible by our continued record earnings and robust cash flows.”

Founded on November 28, 1928, PLDT is the leading telecommunications provider in the Philippines. Through its three principal business groups – fixed line, wireless, and information and communication technology – PLDT offers the largest and most diversified range of telecommunications services across the Philippines’ most extensive fiber optic backbone and fixed line, cellular and satellite networks. PLDT is listed on the Philippine Stock Exchange (PSE:TEL) and its American Depositary Shares are listed on the New York Stock Exchange (NYSE:PHI). PLDT has one of the largest market capitalizations among Philippine-listed companies.

Wireless telecommunications are the most important income driver of PLDT. PLDT’s cellular subscriber base reached 41.3 million with net subscriber additions of 6.1 million for the year; a year-on-year growth of 17%. Wireless service revenues increased by 2% to P95.8 billion while fixed line service revenues were up 4% to P51.1 billion; and ePLDT service revenues improved 5% to P10.9 billion, totaling consolidated service revenues to P145.6 billion (2% year-on-year growth).

Wireless services are provided by Smart Communications, inc., or Smart, and Pilipino Telephone Corporation, or Piltel. Smart Communications, Inc. (SMART) is the Philippines’ leading wireless services provider with 39 million subscribers on its GSM network as of January 2010.

While listening to Chairman Manuel V. Pangilinan, Smart’s Maybelle Santos, Senior Manager, Domestic Alliances Financial Services Wireless Consumer Division, and Anna Marie A. Cruz, Department Head, Domestic Alliances Financial Services Wireless Consumer Division,⁴³ thought of PLDT’s Chairman’s vision for Smart Money. Indeed, although financial services provided through mobile phones had been one of the most important drivers of Smart’s growth, PLDT’s exclusive focus on telecommunications hampered the development of its financial services value proposition through Smart Money.

Smart Money is a re-loadable payment card that may be accessed through either a Smart mobile phone or a MasterCard powered card, similar to a debit/cash card. Smart Money enables Smart subscribers to manage their money from their mobile phones. Although this service had proven very successful, with 2.5 million active subscribers out of the 39 million Smart voice subscribers, its development is limited by PLDT’s strategic decision⁴⁴ to focus on the telecommunications business. Indeed, as opposed to its main competitor GCash, it has not created its own financial services subsidiary to offer its customers more than mobile payments, i.e., truly mobile banking.

⁴³ Interviewed on March 18th 2010.

⁴⁴ Influenced by major stockholder Japan’s NTT DoCommo decision to stay out of the financial services industry, and by the current financial crisis that worsened investors’ perception of companies involved in the financial services industry.

*Mobile banking in the Philippines*⁴⁵

The Philippines is geographically fragmented with a substantial portion of its population living in remote rural areas. 80% of the Philippine population remains unbanked or underbanked, often traveling far to make a simple financial transaction. Commercial banks still have very limited reach to remote areas.

Mobile network infrastructure and distribution systems are well developed even in the remotest areas. The average mobile user is accustomed to loading and sharing airtime credit over-the-air and is comfortable with mobile phones' security features.

Extending formal financial services to the unbanked poor is a high priority for the Filipino government. In addition to a general concern about improving access to finance, The Central Bank of the Philippines (BSP) is particularly sensitive to the needs and interests of overseas Filipino workers (OFWs). OFWs sent home approximately US\$18 billion in remittances in 2008, accounting for approximately 11% of GDP.⁴⁶ Many OFWs also come from provinces where access to formal financial infrastructure is limited.

Approximately 8% of Filipinos live abroad and regularly remit money to their families at home, many of whom live far from metropolitan areas. The average inbound remittance to the Philippines is US\$300 and typically costs the sender between US\$7 and US\$33, or between 2.5% and 10% of the value. If routed via GCASH or Smart Money, the cost is less than 1% of the value. Finding a cost-effective way to receive these remittances is forcing many banks to explore new business models and new partnerships.

The emergence of the Philippines as an early pioneer in mobile banking is underpinned by the strong yet flexible involvement of national authorities. The approach of the BSP's top management is to "follow the market", facilitating emerging market developments and private sector innovation while managing risk.⁴⁷ BSP has also added capacity to ensure its ability to oversee and supervise mobile banking.

At the end of 2006, there were fewer ATMs (6,867) in the Philippines than islands constituting the archipelago (approximately 7,100). At the end of 2009, the Philippines had 8,207 ATMs, a 20% increase, but still a significantly small number in context. In 2009, over 50 percent of the adult population in the country had a bank account. With its fragmented geography and the limited reach of the formal banking infrastructure, the Philippines are a prime environment for the growth of mobile banking.

The commercial banking sector has been slow in taking banking beyond traditional bank branches, due primarily to the limitations on banks' use of agents. However, the strong government emphasis on microfinance is starting to change the traditional market focus of commercial banks, creating a strategic imperative to explore mobile banking models.

⁴⁵ This analysis summarizes the CGAP report "Notes on Regulation of Branchless Banking in the Philippines", January 2010.

⁴⁶ World Development Indicators; World Bank 2009.

⁴⁷ Interview with Pia Roman on March 16th 2010, Head, Inclusive Finance Advocacy- Bangko Sentral ng Pilipinas.

The development of e-Money regulation as a catalyst for mobile banking uptake

The Philippines Central Bank, Bangko Sentral ng Pilipinas (BSP), has practiced a flexible but hands-on role in the emergence of e-Money in the Philippines, finding ways to permit innovation within safe, sound and prudent standards.

In the past 8 years, BSP has supported the development of two different arrangements for two mobile operators. In one model, banks are permitted to outsource a substantial range of activities to the mobile operator, Smart Communications (Smart), via a system of pre-paid accounts introduced in 2000 and expanded in 2003.

In the second, a subsidiary of the mobile operator, Globe Telecom (Globe), offers virtual stored-value accounts which enable mobile phone customers to make payments and money transfers. Globe's subsidiary, known as G-Xchange, Inc. (GXI), is regulated as a remittance agent, permitting a non-bank-based model also using pre-paid accounts introduced in 2004. As a condition of their permission to launch, Smart Money and GCASH each agreed to furnish detailed operational data to the BSP.

The Smart Money and GCASH offerings emerged from the intense competition between the two parent companies. Smart first introduced Smart Money in 2000, and dramatically expanded the system in 2003 to eliminate physical scratch-off cards in favor of electronic reload of airtime. Globe introduced GCASH in 2004 to compete with Smart Money.

Smart passed some of the cost savings to merchants, in the form of bigger commissions for selling airtime. This helped attract small stores into the network of locations where customers could purchase airtime. The second strongest driver of interest in mobile banking has been the large flows of international remittances sent into the country by overseas Filipino workers (OFWs).

There have also been customer barriers to adoption. Some customers may resist becoming "formal," i.e., placing funds in accounts that are visible in the formal financial sector, possibly under scrutiny by tax authorities. In addition, completing an in-store purchase via a person-to-person GCASH or Smart Money transfer tends to be significantly more time-consuming than a card-initiated payment, which may dissuade some customers from using GCASH or Smart Money for this purpose.

In November 2005, after both Smart Money and GCASH had launched, BSP created the Core Information Technology Supervisory Group (CITSG) to act as the central group within BSP to i) address electronic banking issues, including m-payments and m-banking, and ii) supervise institutions engaged in providing these services. Indeed, the early government approach to mobile banking had been a "Test and See" approach.

However, in March 2009 when both Smart Money and GCASH had already been developed, BSP issued an E-Money Circular, giving more clarity to the e-Money sector. As of March 2010, both GXI and Banco de Oro (Smart's bank partner) have applied for and attained the status of e-Money issuers.⁴⁸ After observing Smart Money and GCASH for several years, in March 2009 the BSP issued Circular 649, which regulates e-Money as an activity rather than by the legal character of the e-Money issuer.

⁴⁸ Interview with Pia Roman on March 16th 2010, Head Inclusive Finance Advocacy- Bangko Sentral ng Pilipinas.

Agent regulation: the remaining challenge

The most significant regulatory obstacle to the further growth of mobile banking in the Philippines has been the restrictions placed on both banks' and non-banks' use of agents. Banks are not allowed to outsource their inherent banking functions to third parties, nor their KYC responsibilities, although the BSP is considering the possibility of permitting agents to perform KYC. As a result, the commercial banking sector has been slow in taking banking beyond traditional bank branches, due primarily to these limitations on banks' use of agents.

Initially, agent registration required attending a one-day training which was not widely available outside Manila.

Since 2008, the Central Bank has allowed GXI and Smart Money each to conduct its own training of agents. Both companies can also fly out some of their specialized instructors to train merchants outside of Manila. In addition to the training requirement, the documentary requirements imposed on agents (e.g., audited financial statements) is difficult for some smaller merchants to comply with.

Non-banks may use remittance agents only for distribution of payments and for KYC. However, certain requirements imposed on agents have deterred them from signing up. With recent regulatory changes (including the permitting of mass licensing) the situation is already changing dramatically. For example, remittance agents' GCASH and Smart strategy will change with mass registration of 15,000 new GCASH agents accredited by the BSP, as well as new Smart agents expected to be registered in the next couple of months.

Remittances from Overseas Filipinos Workers (OFW): the catalyst for mobile banking take-up?

The strong government emphasis on microfinance is starting to change the traditional market focus of commercial banks, creating a strategic imperative to explore mobile banking models. One of the strongest drivers of interest in mobile banking is the large flows of international remittances into the country by overseas Filipino workers (OFWs).

Remittance agents' regulation, BSP Circular 471, was issued in 2005 and covers all institutions that act as cash-in and cash-out agents. Under the circular, prospective remittance agents must i) apply to the BSP for registration, which entails the submission of various legal documents and the payment of a fee, and ii) send their officers and personnel directly involved in the cash operations for training by the BSP's Anti-Money Laundering Council (AMLC).

The requirement to send officers and personnel for AML training proved prohibitively expensive for many potential agents, particularly the typical neighborhood corner store, known locally as *sari-sari* stores. Since 2008, in response to requests by Globe and Smart, the AMLC has permitted GXI and Smart each to conduct its own AML training (as long as they follow Anti-Money Laundering Act (AMLA) guidelines and is certified by the AMLC), which has facilitated an increase in the registration of agents.

In January 2010, the BSP issued a resolution permitting GXI to register thousands of agents through one application to the BSP, provided that GXI retains the responsibility and liability for all of its agents. The mass registration has only been approved for GXI so far.

In anticipation of BSP plans, GXI completed much of the required paperwork prior to January 2010 and was able immediately to register 15,000 new remittance agents. Smart's mass

registration is still under negotiation. It is expected that Smart will register approximately 45,000 new remittance agents in the near future.

Up close: Smart Money business model

Smart Communications is the most important mobile network operator in the Philippines. In January 2010 it had 39 million voice subscribers. Smart Communications brands its mobile transaction system Smart Money. This service can only be used by Smart users who are offered prepaid accounts. As of January 2010, Smart Money had 2.5 million active subscribers out of its 39 million Smart Voice subscribers.

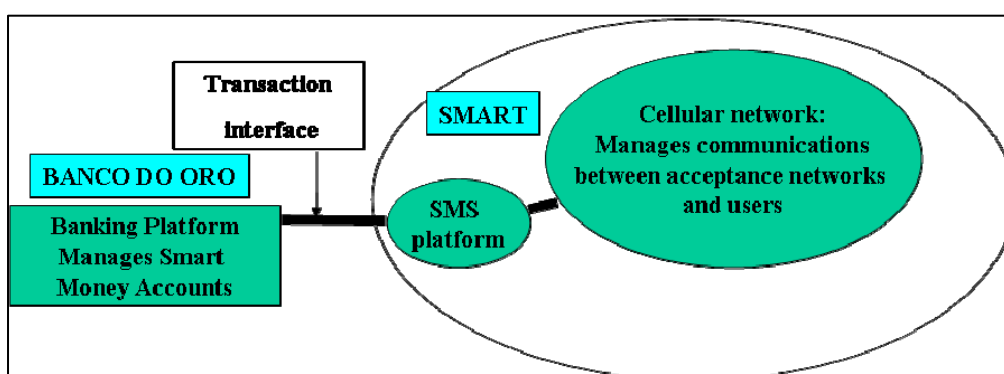
Smart Money’s Mobile payments business model is based on its partnership with a financial institution, Banco do Oro that issues its prepaid accounts.⁴⁹ The balances of the prepaid accounts are maintained by the partner financial institution. As a result, the issuer of the prepaid accounts is a fully regulated institution financial institution.

Originally the partnership was with First e-bank, a specialized bank later acquired by Banco do Oro. Smart’s role in this partnership is to provide the transport system, Smart cellular devices, communications, security and encryption through GSM technology. Although Smart receives additional income from Smart Money’s SMS usage and from a percentage of the float,⁵⁰ the business model of Smart Money was originally (and still is) based on making its top-up system more efficient and hence reducing costs. Generating income from mobile banking is not yet its main strategic goal.

Smart’s partner financial institutions handle the Smart Accounts as co-branded prepaid accounts. They handle accounts, transfers, and credit arrangements, and take full responsibility for meeting regulations. These partner institutions receive their income from cross-selling other financial services to Smart clients, debit card fees and other commissions and financial income from cash float.

Figure 3.1

Smart Money’s Business and Technology platform⁵¹



⁴⁹ Also with Landbank, and ChinaBank, but mostly for international remittances.

⁵⁰ Undisclosed percentage of the income BDO makes of the float deposited on Smart Money Accounts.

⁵¹ Infodev, 2006.

Smart Money mobile payments business model required little investment and no special regulatory approval. The payment network used is the Maestro payment network, managed by the financial institution's members of MasterCard. Since Smart Money uses the Maestro payment network, merchants have to pay the discount rate for debit transactions. The rest of the costs for the users of the system are very low, and very similar to its main competitor (GCash).

Table 3.2

Smart Money service prices

	Smart
Opening costs	0/30 pesos
Maintenance fee	0
Debit cards (per year)	220 pesos
Customer initiated SMS	2,5 pesos
Retail purchases with phone	1 peso
Discount rate	2,5%
Retail purchases with card	0
Cash in/ out at BDO (700), Smart (90)	0
Cash in/ out at pawnshops (1.200)	1-5% (3%)
Cash withdrawals at BDO ATMs	3,5 pesos
Cash withdrawals at non BDO ATMs	11 pesos

From a regulatory point of view the Smart Money Business model seems to be the easiest and safest option to implement mobile banking. Besides, its development in terms of acceptance network and number of clients seems to indicate that it is also the easiest and fastest to implement.

Table 3.3

Evaluation of Smart Money's Business model

		Smart
Key driver of success	Low cost/low value top up system	Yes
	Deposits, withdrawals, and remittances acceptance network (*)	9.990
Business model	Partnership with bank institution	Yes
Convenience	Basic payment functions provided	Yes
	Value added payment functions provided	Yes
	Easy Sign Up Process	Yes
	Service presentation based on SIM Card	Yes
Safety	SIM based encryption	Yes
	Authentication provided by the operator	Yes
	Authorization using PIN	Yes
Technology issues	Capacity problems	No
Regulatory issues	Regulatory special approval	No

- The key driver for the success of Smart Business Model has been its prepaid Top up function:

Smart created Smart Money to allow customers buy airtime directly over-the-air (OTA). The system was called Smart Load, transferring money from the Smart Money account (operated by Banco do Oro) to the Smart SMS system. The key to the success of this system is the low minimum top-up value. Minimum top-up is 10 times lower than the minimum top-up with a scratch card, and as a result has been the most popular service of Smart Money since it was launched in September 2003. Once Smart Money was functioning for top ups, it could be used for performing other payment functions and not only buying airtime.

Smart Money allows Smart to handle a huge number of low-value transactions at low cost. The system was created in order to decrease payment costs for a large number of top-ups. The cost of the scratch card system was expensive, and therefore required higher minimum top-up purchases. By using a more efficient payment system, Smart allowed customers to buy smaller top ups, and hence becoming a key differentiator of its value proposal.

Thanks to the success of its top-up function, Smart has been able to develop a very dense acceptance network. Almost all prepaid Smart customers (98% of its customer base) use Smart Money to buy airtime. The success of the system has allowed Smart to expand its network of acceptance to 9,990 cooperating dealers that also have Smart Accounts.

Smart Money consumer and business solutions

Smart Money is a reloadable payment card that can be accessed either through a Smart mobile phone or a MasterCard "power card" that is similar to a debit/cash card. Smart's bank partners hold the Smart Money accounts, making it a bank-based model, and Smart's bank partners are responsible for securing approval from and reporting to BSP. Smart offers two different platforms: a mobile banking platform⁵² and an e-Money platform (an e-wallet). The mobile banking platform enables customers to do the following: prepaid reloading, bill payment, funds transfer, checkbook request, balance inquiry and other transactions otherwise done through ATMs. The e-Money platform involves a reloadable electronic card that works with the phones; it can be used at any ATM of a partner bank. The mobile banking platform permits payments to third parties using the mobile phone only if the third party also has a Smart Money account; with the e-Money platform, payments can be made with the Smart Money card at any existing POS device that accepts MasterCard. Currently, Smart is working with 21 banks: all the banks utilize Smart's mobile banking platform and three utilize Smart Money's e-Money platform and issue smart money: Banco do Oro, Chinabank and Landbank. Smart's money e-Money platform is subject to the wallet limits imposed by existing e-Money regulation: Single transaction limit: PHP 10,000 (approx. US\$217); Daily limit: PHP 40,000 (approx. US\$866); Monthly limit: PHP 100,000 (approx. US\$2,165).

Smart Money e-Money platform processed payments worth PHP 96 Million (US\$2 billion) in 2009, from its 2.5 million active customers. Its account opening process involves two steps: 1) Customer accesses Smart Money menu on his/her mobile phone, chooses any transaction, is prompted to select a PIN and then selects "get account." A confirmation SMS informs the client that the PIN is set. 2) Customer goes to any Smart Wireless Centre, fills out an application form

⁵² However, this mobile banking platform is not transformational since it requires a bank account with the partner financial institution.

and submits a copy of a valid ID and pays a PHP 30 (US\$0.64) processing fee. Filipinos can also apply for a Smart Money card online.

Customer account records are held electronically on Smart servers. But, since its business model is based on partnerships with financial institutions, partner banks are provided with a real-time look at client data. Smart performs suspicious transaction monitoring for the partner banks.

The expansion of the network of money in money out agents (MIMOs) is Smart's next big challenge in order to increase consumer adoption of Smart Money. Since Smart Money clients have the option of obtaining a MasterCard-branded debit card linked to their Smart Money account, they can access the card payment infrastructure of the Philippines. Smart Money users have access to POS terminals of over 20,000 merchants accepting MasterCard, and 8,000 ATMs through the country's three main ATM networks (Bancnet, Megalink and Expressnet).

Smart Money users can do cash-in and cash-out at 1,990 Money-In Money-Out centers (MIMO or agents) and at 8,000 ATMs (in the Philippines). An additional 25,000 merchants have POS terminals that accept MasterCard. Agents can charge from 1% to 5% for cash in and cash-out.

Smart Money's MIMO network is composed of 90 wireless centers (where no commission is charged to customers); 1,200 money centers (mostly pawnshops) where commissions vary from 1% to 5% (3% average - 15 pesos);⁵³ 700 BDO branches (where no commission is paid by the customer); 8,000 ATMs, where the customer pays 3.5 pesos for cash out transactions at the 700 ATMs of BDO, and 11 pesos in other banks.

Reloading is provided via the mobile banking facility of Smart Money from 21 banks at no cost. Indeed, the purpose of this reloading facility is to allow the customer to send remittances and therefore make SMS income (2.5 pesos).

Unlike GCash, Smart has not applied for remittances license for its e-loading network of sub-distributors. Smart's e-loading network is composed of: corporate accounts; distributors; sub-distributors and retailers. The network is organized based on their area of coverage, with the sub-distributors (300,000) reporting to distributors located in the same region, and the retailers (800,000) to sub-distributors from the same area.

- Consumer solutions:⁵⁴
 - Bill payments
 - Money transfers
 - Reload airtime
 - ATM withdrawal
 - Shopping
 - Online shopping
- Business solutions:⁵⁵
 - Microfinance solutions
 - Payroll and disbursement

⁵³ Smart argued that these commissions are still cheap compared with the 13% rate which is the average commission Western Union charges for domestic remittances.

⁵⁴ <http://smart.com.ph/money/consumers/>.

⁵⁵ <http://smart.com.ph/money/business/>.

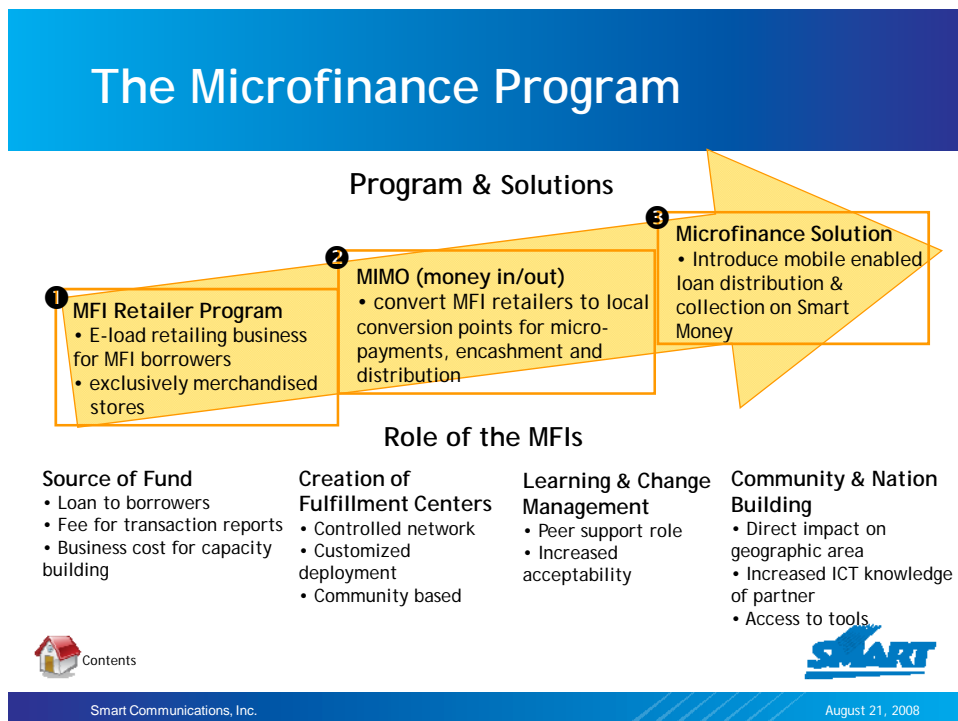
- Payment platform
- Consultancy services
- Remittance partnerships
-

Smart Money partnership strategy with MFIs: from mobile payments to mobile banking?

Since neither BDO nor PLDT wanted to enter the microfinance business, Smart’s Head of the Financial Services of the Wireless Consumer Division, Jojo Malolos, decided to enter the market through partnerships with MFIs. As of January 2010, they had established agreements with 23 Microfinance institutions, 11 of which were interested in becoming MIMOs; two in the disbursement platform and two in the collections platform. However, before rolling out this partnership strategy, Smart’s Management designed a Microfinance program split into three pilot phases.

The program supports the provision and development of solutions that Microfinance Institutions (MFI) can utilize to perform seamless and efficient loan disbursement and collection transactions. The solution includes provisioning SMART Money services and Mobile based applications in order to further expand opportunities for each MFI partner to serve more areas and increase their membership base. To build the Microfinance Program, Samart’s management decided there was a need to split the program into three phases which will build on each other, given the nature of the target market and the current availability of fulfillment or trade transactions in the segment.

Figure 3.2



Phase I: The MFI Retailer Program

The MFI Retailer Program involves creating a retailer network that provides ICT services to MFIs (airtime load, internet access, SMART Money usage for services, purchase/settlement, etc.). The MFI plays a critical part in providing funds that will fuel the retailer's ability to purchase airtime. The MFI grants a specialized loan for the retailers who join this program. In exchange, SMART lays the existing mainstream retailer program on the MFI borrowers and enables the MFI Partner (or Aggregator) to monitor the trade activity of the retailer. The MFI also provisions a different (in most cases lower) interest rate for borrowers who participate in the program.

Phase II: Money-In Money-Out (MIMO)

The second phase of the program involves the selection and transition of mature (and financially viable) stores from regular airtime retailers to MIMO centers for the community. These centers will be able to convert electronic cash in SMART Money wallets into physical cash, and vice versa. Given the existing loan disbursement/repayment transactions per MFI, Smart's management estimated that there was a need to create at least 1-2 MIMO per 100 borrowers.

Phase III: The Microfinance Solution

The third phase of the program involves the transition of loan collection and disbursement from manual to mobile-enabled. This includes the deployment of a SIM-based menu that tracks loan payments to target MFIs. Borrowers can reload their SMART Money accounts in MIMO centers and pay their MFIs remotely via the mobile menu. It is projected that Money Out will occur at ATM and MIMO channels when they involve P3,500 or higher. But Money In can be provisioned at the MFI's designated MIMOs since these typically involve conversions of P175 – 350 only. It is critical that borrowers do not experience an increase in transaction costs when they move from manual to mobile payments. A number of MFIs are exploring the possibility of absorbing the transaction cost via allowances, reimbursement or usage programs. This solution is designed to address major MFI operational issues by removing cash handling and the inherent security risks associated with manual loan collection.

The MFI partnership strategy aims at benefiting the retailers, the borrowers and the MFI partners. Retailers gain access to pre-approved loans on prepaid airtime retailing at an interest rate that is typically lower than regular loans. Those that transition to SMART Money conversion points can secure additional revenue by being fulfillment centers of Smart services. Also, the franchised MFI store would build their skills and create marketing and advertising strength for them at the community level.

Borrowers gain experience in ICT-enabled loan disbursement and collection transactions, which seeds interest in pursuing other, future ICT applications. There is reduced cost on transport and access (no need to travel long distances just to deposit loan payments).

MFIs are able to create new loan categories for borrowers involved in prepaid airtime retailing. Others have given rebates for retailer loans that are settled quickly. Some MFIs have even reduced their interest rates for borrowers who are able to pay on schedule (e.g., 1% for weekly turnover).

Indeed, MFIs (and also borrowers) benefit from the efficiencies realized by transitioning manual collection to mobile. It reduces security risk in cash collections, and loan officers are

able to focus on other targets such as increasing penetration and getting to underserved areas. Additionally, the platform allows end-of-day transaction monitoring since all loan transactions are now integrated at corporate account level rather than at branch level.

Microfinance program pilot Phase I: Partnership with Card and MicroVentures

In 2007 Smart partnered with MicroVentures, Inc.(MVI) – a Social Business Enterprise and a Capability Builder – to support the Hapinoy Program. The Hapinoy program aims to provide business assistance to the members/borrowers of MicroFinance Institutions HAPINOY – Enabling 4,000 Micro-Entrepreneurs.

The Hapinoy project is an effort to empower *sari-sari* stores by linking them directly to partner product manufacturers, through capacity-building and the community support generated by the network. As a result, Hapinoy *sari-sari* store owners are able to get higher margins on their goods sold, save on new efficiency measures and have the opportunity to enter new businesses such as the electronic financial services offered by Smart.

Each Hapinoy store will enjoy the following benefits – MFI Loan, provision of additional business opportunities (e.g., eLoading), merchandizing, “*pinagandang tindahan*” (attractive store), etc. The Hapinoy stores are envisioned to become Smart Money Exchange centers or Money-In, Money-Out (MIMO) centers.

The partnership’s aim is that the Hapinoy stores will be “repainted and merchandized exclusively with Smart products and services” (aside from their exclusive FMCG partners). Also, MVI may become an e-Loading Sub-Dealer and the Hapinoy stores will be their retailers.

Role of Smart and the Partner Institution

MVI provided a comprehensive package of benefits aimed at empowering micro-entrepreneurs and helping them grow their business. Hapinoy partners with MFIs and cooperative assisted store owners in growing their business. Partner MFI provided loans to their members who signed up for the Hapinoy Program.

Smart merchandized the store and enabled them as Smart Retailer of Prepaid airtime (they can also sell SIM packs and other Smart products). Hapinoy Community Stores (lead stores) also became a fulfillment point for MFI members as Smart Money Exchange Center.

As of end 2008, there were about 4,000 *sari sari* stores under the Hapinoy Program. MFI’s goal is to grow the program to 100,000 stores in 2010, in Luzon, Visayas and Mindanao.

Microfinance program pilot Phase II: Islands’ Activation Pilot From Cash to Mobile Money

In October 2008 SMART Communications designed a new partnership Program implemented with RHUDARDAMPC, a cooperative based in Polillo Island, Quezon. The Department of Agriculture Multi-Purpose Cooperative and Polillo Island RHUDARDA MPC (RMPC) is a cooperative based in Polillo Island, Quezon. The institution currently has 400 members. RMPC is the only financial channel operating in Polillo. The only Rural Bank on the island filed for bankruptcy in August 2008, while the government of Polillo stopped supporting telegraphic transfers in the area. The nearest available bank is 2.5 hours away (by boat) from the island. Polillo is an island located in the Northeastern part of the Philippines and is home to 63,448

individuals. The island is divided into municipalities: Polillo, Panukulan and Burdeos. Polillo is a fourth class municipality in the Province of Quezon, which means that the average annual income during the last three calendar years is P20,000,000 or more but less than P30,000,000.

To roll-out the project, the Institution was accredited as a Smart Money-In Money-out center (Smart MIMO Center), allowing the conversion of electronic cash in Smart Money wallets into physical cash, and vice versa. The Institution was also accredited as a Distributor Sales Personnel in the area (DSP) for the distribution of airtime credits for selling to Retailer-Members, earning profit from this business. Finally, members of the institution were also trained in the use of Smart Money services. Smart, in partnership with the institution, deployed a training strategy that addressed the acceptability and ensured “how to” training for the institution, its branches and clients.

Role of Smart and the Partner institution

Smart provided the technology and access devices (SIM, Smart Money Account) that made mobile money possible. As the telco operator, Smart’s task was to enable the platform and services while engaging with partners who were willing and able to run the technology. The Partner institution promoted and encouraged the use of Smart Money services among members of the community using merchandising collaterals and promotional materials provided by Smart. Loyalty and usage programs were also designed and implemented by the institution to further promote Smart Money reloading and encashment services.

From October 2008 to March 2009, residents of Polillo Municipality and neighboring towns were enjoying access to affordable and secure mobile-enabled financial services through RMPC. Remittances and collections of sales agents based on the island could now be easily sent to the mainland through the Smart Money service. The institution, on the other hand, found another business opportunity and expanded its service offering by becoming the payment center of residents for Smart Bro and Smart Gold subscriptions.

Over a period of 6 months, RMPC experienced an unprecedented increase in mobile money transactions from zero to 3,000. The value of sending and receiving transactions started at 17,000 per month and rose to an average of 500,000 per month.

Microfinance program pilot Phase III: Mobile-enabled Loan Collection in partnership with Negros Women for Tomorrow Foundation (NWTF)

Negros Women for Tomorrow Foundation (NWTF) is a non-government organization that provides a broad range of financial services such as savings, scholarships, micro-insurance and micro-credit to poor and low-income women in depressed urban and rural communities in the Visayas and Mindanao Regions.⁵⁶ Institutions like NWTF experience high risks in security and

⁵⁶NWTF implements the Grameen Bank Credit Methodology where poor women in the poorest provinces are targeted using the Progress out of Poverty (PPI) Industry. Recent results show that 60% of their clients were either moderately poor (belong to the upper half of those below the National Poverty Line) or very poor (belong to the lower half of those below the National Poverty Line) when they joined the program. The Institution operates in the Visayas and Mindanao Regions. They currently have 42 Branches and 80,000 women Borrowers. Services have broadened to include insurance packages, scholarship programs and micro-crop loans designed for farmers. For this particular loan, the salary of the farmer is worked into the loan since past experience show that production money is used for consumption money, since they have no other source of money while waiting for crops.

high transaction costs. It was for those reasons that NWTF decided to slowly transition loan payments of members from manual to mobile-enabled, beginning with one center in its Cadiz branch.

In 2009, Smart Money started the mobile-enabled loan collection pilot of NWTF including the issuance of Smart Money Accounts to the institution and borrowers, and the deployment of a SIM-based menu that tracked loan payments to the institution. Prior to loan payment, narrower of NWTF reloaded their Smart Money accounts from the designated MIMO Center for reloading and encashment services. As soon as accounts had been reloaded, borrowers were able to pay their loans remotely, via the mobile menu. The solution was designed to address major operating concerns of NWTF as this reduced cash handling and other security risks associated with manual loan collection.

This pilot enabled the use of mobile technology in doing cashless transactions, minimizing the cost of manual processes and the security risks attached to them. It also helped bring sustainable economic growth and social development to poor rural areas in the Philippines.

Role of Smart and the Partner Institution

Smart developed a menu-based application for microfinance institutions, utilizing the Smart Money platform. Transaction reports for loan payments via the mobile menu were also generated, and made available to the institution a day after transactions were done. NWTF, for their part, remained focused on their core competency, which is lending to micro-entrepreneurs, and doing their part in community and nation building.

The institution also continued to monitor the payment transactions of their borrowers for the pilot, through reports generated by Smart. And finally, the selection of mature airtime retailers who would be converted to MIMO centers is also the responsibility of the institution.

Smart Money MFI Partnership build up: Challenges for the future

In March 2010, Smart's Maybelle Santos, Senior Manager, Domestic Alliances Financial Services Wireless Consumer Division, and Anna Marie A. Cruz, Department Head, Domestic Alliances Financial Services Wireless Consumer Division, thought the microfinance program was ready to be rolled out with the major MFIs. When discussing these plans with Smart's Head of the Financial Services of the Wireless Consumer Division, Jojo Malolos, he asked them:

- Would Smart's current team have the capacity to roll out the Microfinance program with 22 MFIs?
- Should Smart offer the whole Microfinance program to all MFIs, or instead should it offer different services to each of them?
- Would its partner MFIs be able to train and deploy the required processes to ensure that Smart subscribers were trained in how to use the microfinance platform?

Annex I

Financial and Operating results of PLDT for 2009.

PLDT Group: FY 2009 Financial Highlights				
	2009 (unaudited)	2008 (audited)		% Y-o-Y
Service Revenues	P145.6bn	P142.9bn	↑	2%
• Wireless	P95.8bn	P93.6bn	↑	2%
• Fixed Line	P51.1bn	P49.3bn	↑	4%
EBITDA	P86.2bn	P87.7bn	↓	2%
• Wireless	P59.4bn	P60.7bn	↓	2%
• Fixed Line	P25.2bn	P25.9bn	↓	2%
EBITDA Margin	59%	61%	↓	
Core Net Income	P41.1bn	P38.1bn	↑	8%
Core EPS	P218	P200	↑	9%
Dividend per share	P218	P200	↑	9%
Reported Net Income	P39.8bn	P34.6bn	↑	15%
Year-end PhP:US\$1	P46.43	P47.65	↓	3%
Year-average PhP:US\$1	P47.64	P44.47	↑	7%

Annex II

The Microfinance sector in the Philippines

Top 10 MFIs in the Philippines*

Philippine MFI Snapshot (as of 2006)

3 millions households 30 members per center weekly ave of P250/member
 100K centers nationwide 20K center meetings daily P150M daily collections
 600K members per day 600K daily transactions

Microfinance Institution	Active Borrowers	Gross Loan Portfolio
TSKI	173,002	720,466,225
CARD NGO	159,673	789,020,391
TSPI	115,370	582,882,478
KMBI	83,167	278,064,840
NWTF	80,000 (2007 data)	385,330,131
CCT	70,000 (2007 data, borrowers)	313,859,862
ASKI	43,259	157,681,028
CARD BANK	40,634	340,816,187
ABS-CBN	39,756	200,472,786
PRODUCERS BANK	35,562	157,263,457



*Based on the number of active Clients, 2006 data.

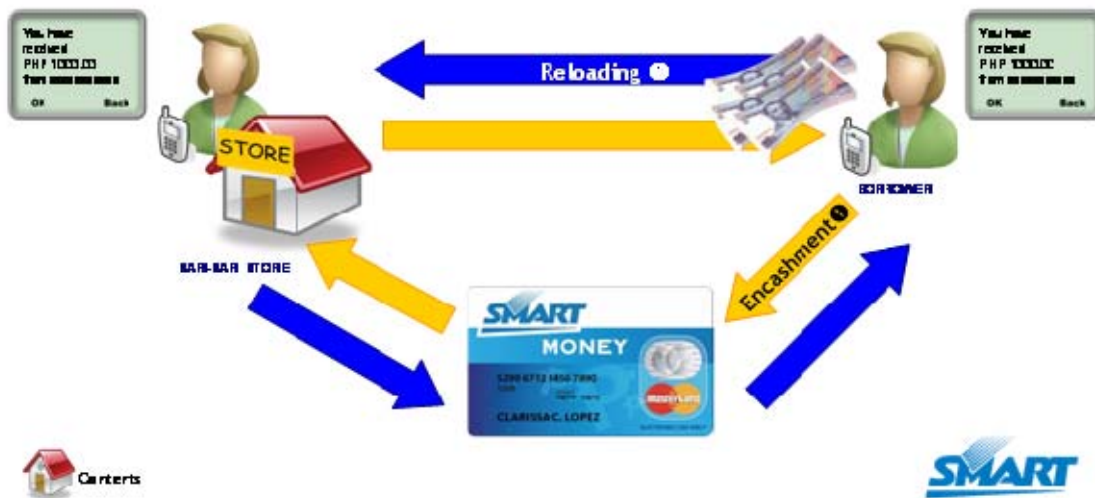


Annex III

Phase II of Smart's Microfinance Program

MIMO Program

Phase 2 of the MFI program implementation where participating Retailers are converted to fulfillment centers for close loop SMART Money MIMO services



Smart Communications, Inc.



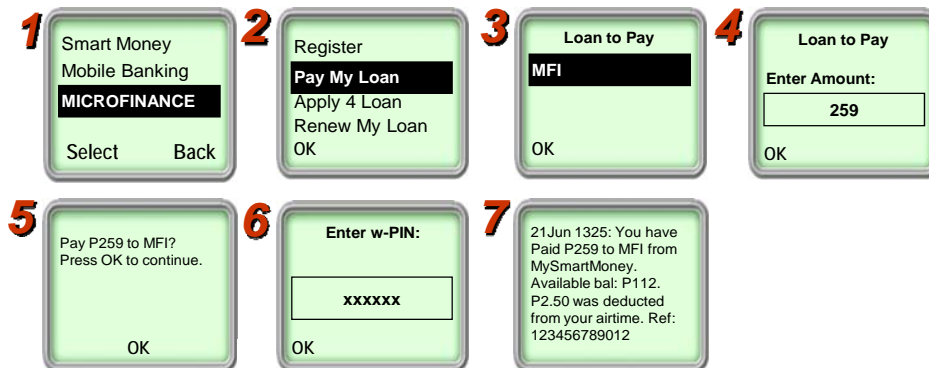
August 21, 2008

Annex IV

Phase III of Smart's Microfinance Program

Microfinance Solution

Third phase of the MFI program where Borrowers are able to pay loan amortizations using their mobile phone via the MICROFINANCE Menu*



*The MICROFINANCE Menu can be accessed from the SMART Menu. Payments are sent directly to the MFI's SMART Money Account.



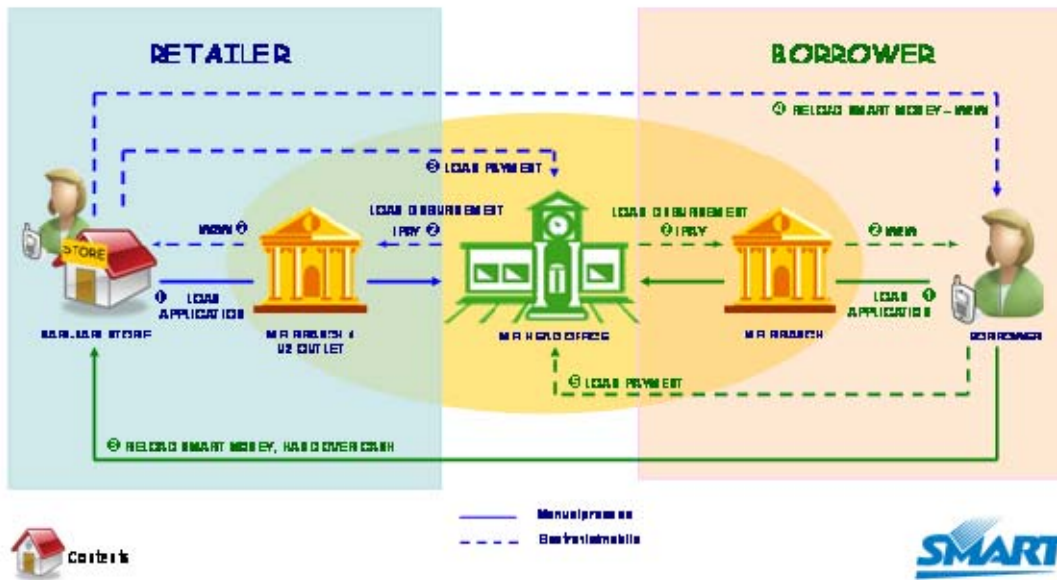
Smart Communications, Inc.

August 21, 2008

Annex V

The MFI Program Ecosystem

The MFI Program Ecosystem



3.1.2. Sociedad de Servicios Técnicos y Administrativos (SSTA)

This case study analyzes how the problem of low access to financial services in Colombia could have been solved using mobile banking business models based on prepaid platforms and cellular technology. In particular, it focuses on the case study of Colombia's proposed Sociedad de Servicios Técnicos y Administrativos (SSTA). This newly proposed entity aims to provide the technical platform, cards platform, the transactional network, customer relationship management and other services for the microfinance institutions of Colombia.

The SSTA initiative is designed to solve supply-related inefficiencies of the Colombian microfinance sector. The SSTA mechanism was conceived as an operational and technological instrument within a global policy framework of the Colombian government policy to increase banking access (Banca de las Oportunidades initiative). The mobile banking component was one of its defining characteristics, representing 40% of the total number of transactions managed by the SSTA. This percentage is very high in the context of a multichannel strategy, and especially relevant since the SSTA aims to serve the poor and unbanked.

The policy framework, called Banca de las Oportunidades, also consists of adapting the regulatory framework and promoting the development of low-cost distribution channels such as non-banking correspondents (*corresponsales no bancarios*) in order to resolve the problem of access to finance. These policies are very similar to the ones carried out by the Fox administration in Mexico with the new regulatory framework for MFIs called "*Ley de Ahorro y Crédito Popular*" and the creation of Bansefi with "*La Red de la Gente*" and the technical platform "Integrat-T."

Causes of low access to financial services in Colombia

Access to financial services in Colombia is low but higher than in neighboring countries. While in Colombia 55% of the population have no access to financial services, in neighboring Ecuador 66% and in Peru 65% of their population have no access to financial services (Orozco, 2006). In contrast, in developed countries such as Spain and the United States only 2% and 10%, respectively, of the population over 18 lacks access to financial services (Solo, Manroth, 2003).

Macroeconomic indicators of financial deepening show similar statistics to those of the population with no access to financial services. In 2003, the percentage of credit to the private sector with respect to Gross Domestic Product was 23.4% for Colombia. Ecuador and Peru had 19.9% and 20.8% respectively. In regional terms, Colombia has relatively high levels of access to financial services; these levels are higher than those in Mexico and Central America (Honduras, Guatemala, El Salvador), but lower than those of Brazil and Chile. Although Colombia's figures are relatively high in Latin America, they are very much below the developed countries' average of 158.3% in 2003.

Table 3.4

Financial Deepening in Colombia, Ecuador and Peru - Regional and Global Comparisons (World Development Indicators, 2003)

	Private sector credit/GDP		Liquid liabilities/GDP		Capital Markets/GDP	
	1990	2003	1990	2003	1990	2003
(%)GDP						
Colombia	30.8	23.4	29.8	32	3.5	18.1
Ecuador	13.6	19.9	21.1	21.7	0.6	7.9
Peru	11.8	20.8	24.8	29.8	3.1	26.5
Venezuela	25.4	8.6	38.8	22.3	17.2	4.5
Mexico	17.5	18.5	22.4	29.1	12.4	19.6
Brasil	38.9	34.6	26.4	30	3.6	47.6
Chile	47.2	63.3	40.8	38.2	44.9	119.2
Developed countries average	125.8	158.3	92.8	104.3	51.6	100.1
Average income	43	64.2	42.2	81.4	19.4	44.5
Low-middle income	39.3	58.6	41.1	76.9	18.8	43.5
Low income	22.3	27	36.2	51.9	10.5	37.3

The analysis of the elements of the supply of financial services explains the inefficiency and inadequacy of the distribution models in Colombia. This section looks at the cost/price levels of basic financial services, the density of the financial service distribution networks, risk analysis methodologies, database analysis systems and the regulatory context.

Prices, interest rates, minimum balances, maintenance fees and commissions for cash transfers and withdrawals are very high when compared to the prices paid by financial institution clients in more developed countries such as Spain and the United States. The high prices charges in Colombia by financial institutions are not only due to their low efficiency, but also to the lack of competition in the Colombian financial sector.

Financial service distribution networks are not dense enough in Colombia, and Latin America in general, because traditional banking networks are too expensive to serve low-income clients such as those found throughout the region. As of 2004, there were only 8.7 bank branches per every 100,000 people in Colombia. These ratios are low compared to the 35 branches per 100,000 in Spain, but with the exception of Peru (4.2), they are average in the Latin American context.

Credit risk analysis methodologies in Colombia, and Latin America in general, are not well adapted to their economic realities; in particular they neglect the importance of their large informal economies. Bank credit risk analysis methodologies currently use mostly stable and proven cash flows (e.g., wage income), leaving income from the informal economy out of the determination of creditworthiness. Moreover, banks concentrate on offering credits to those who are already banked by placing a greater weight on variables that tie the client to the institution. Nevertheless, these methodologies rarely include socio-demographic variables that would generate a more accurate client profile and a speedier and cheaper creditworthiness

determination through more flexibility in the supporting document requirements to be submitted to the institution.

Addressing these difficulties, found not only in Colombia but generally throughout Latin America, demands changes in the risk analysis methodologies that would enable faster and cheaper decisions. There are also specific problems in Colombia related to the legal acceptance or recognition of certain kinds of collateral guarantees, as well as the information to be received by credit grantors, which comes almost exclusively from financial institutions. By not including the payment history with commercial establishments of unbanked customers in their credit profile, banks are in fact being overly restrictive in denying them access to the formal financial system.

From the regulatory point of view, the normative context creates additional barriers to financial services access. In the three countries analyzed, there are different regulatory realities that have different ways of impacting the already inefficient cost structures of the financial institutions there. Financial institutions in Colombia have historically had a less favorable regulatory context than in neighboring countries such as Ecuador and Peru.

Interest rates in Colombia are limited by the usury rate, while there are no controls over the interest rate in Ecuador and Peru because service fees are liberalized. Colombia also taxes financial transactions, and forces investments in unprofitable activities that add costs to financial institutions which in turn are reflected in higher prices to Colombian clients for financial services.

In terms of credit portfolio provisions, the current legislation penalizes the generation of microcredits not only in Colombia but also in its neighboring Andean countries. Although the Colombian government defines the concept of microcredit as an independent figure, its regulatory system forces financial institutions to provision this portfolio more restrictively than other credit portfolios, even though delinquency rates are not particularly higher.⁵⁷ In the Colombian case, as in Peru, the system of guarantees is inadequate to the economic reality of the country, further complicating credit granting to the population that operates in the informal economy.

In terms of control and requirements of the distribution network, although the Colombian legislation has traditionally been very strict in this regard, it has recently become more flexible with the passage of the law of non-banking representatives, which hopes to solve the problem of scarcity of bank branches in the country. Also in Colombia, illegal activities related to drug trafficking, regulation of international transfers and information requirements on the owners of banking products make it difficult to access financial services in general and the bancarization of remittances in particular. These requirements do not exist in Ecuador or Peru, resulting in a less-strict environment in these countries. Since the Ecuadorian and Peruvian systems are more flexible than the Colombian system, auxiliary financial service networks have been developed in Ecuador, and teller representatives have been implemented in Peru; these solutions partially solve the problem of lack of access to bank networks.

Nevertheless, in terms of public policy, the Colombian government has pushed a new initiative called "Bank of Opportunities,"⁵⁸ which would allow microfinance institutions to generate

⁵⁷ This problem is also relevant in neighboring countries such as Peru and Ecuador.

⁵⁸ Banca de las Oportunidades.

economies of scale. Enabling the achievement of or access to scale economies is necessary for the application of best practices in banking the unbanked and to optimize migrant remittances since these require infrastructures that are too expensive to be developed individually by most microfinance organizations. The “Bank of Opportunities” initiative in Colombia also aims to reduce the above-mentioned regulatory obstacles, allowing these restrictions to be solved in the short or medium term.

Economic and Financial Structure in Colombia

The macroeconomic context in Colombia has been favorable in recent years. Even after passing through severe economic and financial crises at the end of the 90s, Colombia has retaken the growth path within a stable macroeconomic situation in terms of inflation, exchange rate and interest rates. However, despite the economic growth of the past years, the percentage of the population living in poverty has not decreased noticeably. Poverty is one of the structural problems of Colombia and the whole region. Other common socioeconomic problems in Colombia and the region include income inequality and the great importance of the informal economy.

The 1998 banking and financial crises in Colombia forced the government to intervene to rescue its bankrupt financial system. As of December 2005, the rescue package had increased public debt levels to 46.8% of GDP (Felaban, 2006). The importance of public debt as a percentage of GDP is another common characteristic in Latin America; this debt generates a steady flow of income to the financial system and does not foster lending to the private sector (Garrido, 2005).

Public debt in Colombia shifts the liquidity of the banking system away from the private sector. This move from servicing the private sector to servicing the public sector is due to the fact that servicing the public sector has fewer operational costs and produces higher returns on assets to institutions with inefficient cost structures. This argument is also valid in explaining why financing to the private sector is concentrated on large corporations, leaving out small enterprises and individual clients. The financial institution industry in these countries obtains financing from access to considerable levels of unremunerated deposits. These deposits mainly finance public and corporate credit, yielding high profits and low delinquency rates without having to invest in the infrastructure to bank the rest of the country’s population.

Along with the inefficiency of their financial service distribution business models, the macroeconomic structures of Colombia, and most Latin American countries in general, explain why financial institutions have not directed their supply of services to low-income segments of their populations. The scarcity of a microfinance services supply in a context of increasing demand favored the emergence of specialized institutions that serve the financial needs of low-income segments of the populations in Colombia. The increasing demand for their services and the implementation of best practices made it possible for these institutions to obtain high profits and reinvest their earnings to expand their activities. This is the case of Banco Caja Social in Colombia, a leading banking institution in the microfinance sector.⁵⁹

Cooperative systems in Colombia, traditionally more likely to service low-income segments, were severely affected because of managerial inadequacy and failings during the banking crises of the 90’s in the country. The cooperative sector in Colombia was particularly relevant since it

⁵⁹ Part of the Acción International Group.

represented almost 10% of domestic savings before the crisis, while today it retains only marginal weight in the financial and microfinance sector.

Institutions specialized in consumer finance, following business models that were successful in Chile, have been moving progressively into the niches neglected by banks in Colombia and other Andean countries. These institutions can take deposits and at the same time offer consumer credit through electronic banking products distributed by non-banking networks; primarily retail stores and shopping centers. Though not yet very important, a few consumer finance institutions, such as Finamerica and Compartir,⁶⁰ have begun to gain significant market share in Colombia's microcredit sector.

The commercial success of institutions specialized in the microfinance segment has attracted the attention of certain leading banking institutions, which have changed their strategies by investing in the growth in the unbanked sectors. Bancolombia is a leading banking institution that has followed this path; its new priority is to develop, through the implementation of new business models, value propositions aimed at low income segments. Due to its enormous investment capacity, and the development of business models adapted to the needs of the market, this institution leads the microfinance markets in Colombia, displacing operators specialized in microfinance from their former leading positions.

Other factors have also driven the entry of leading commercial banking institutions in Colombia into the microfinance market. First, the macroeconomic stabilization in the country has decreased the financing needs of the public sector. Second, the development of low-cost banking technologies and techniques has enabled the development of business models that profitably serve the needs of the low-income segments of the population.

However the potential of the leading bank in microfinance in Colombia, Banco Agrario, remains untapped. Banco Agrario, founded in 1999, is the result of the restructuring and liquidation of Caja Agraria. It is the fifth-largest bank in Colombia in terms of assets and the leading banking institution in microcredit. It is the only state-owned bank remaining in Colombia after the privatization of Bancafé, and the banking institution with the densest retail network. It is present in every corner of the country with more than 720 branches. Its presence is especially relevant in rural and conflict areas where guerrillas are active. In these areas it is sometimes the only visible presence that the state has.

Banco Agrario's funding is based on the forced contributions that the banking industry has to provide to FINAGRO, a fund that represents most of the liabilities of Banco Agrario. The rest of the liabilities are deposits provided by their customers, most of them poor and living in rural areas. Banco Agrario's assets are mostly invested in government debt, although an increasing proportion is financing microcredit activities.

However, Banco Agrario's potential in banking the poor remains clearly underdeveloped since it lacks a technology platform. As a result, it needs to outsource its core banking applications, communications and databases. An initiative such as the SSTA could therefore provide Banco Agrario with the necessary infrastructure in order to provide financial services to the poor much more efficiently. Besides, the SSTA could leverage Banco Agrario's extensive network in order to build up the proposed "opportunities network." Despite all this, due to political issues

⁶⁰ They are also relevant in other Andean countries such as Ecuador (Unibanco, Centromundo), and Peru (Financiera Cordillera).

regarding the relationship between banks and the cooperative sector, Banco Agrario has been left out of the SSTA proposal. It is, however, part of the CGAP funded project to develop mobile banking correspondents with Credibanco although, according to the information available at the time of writing, this initiative is facing important obstacles.

Remittances Received from Emigrant Workers

Remittances from emigrant workers received in Latin America reached US\$52.6 billion in 2005 (FOMIN, 2006), of which Colombia received US\$4.126 billion in remittances, 4.1% of its GDP. Migrant remittance flows are significant in macroeconomic terms not only because of their importance to GDP, but also as a source of foreign exchange and thus for their impact on the current account. Additionally, remittances have a multiplier effect in the receiving economies because of potential growth opportunities in hometown associations, and industries such as tourism, transportation, trade, telecommunications, and even the money transfer industry itself (Hinojosa, 2003).

Table 3.5

Main countries in Latin America that received workers' remittances in 2005 (FOMIN, 2006)

2005	Millions US\$	%GDP
Mexico		2.8%
Brasil	6,411	1.1%
Colombia	4,126	4.1%
Guatemala	2,993	9.3%
El Salvador	2,830	17.1%
República Dominicana	2,682	9.1%
Perú	2,495	3.2%
Ecuador	2,005	6.4%
Honduras	1,763	
Jamaica	1,651	19%

Nevertheless, the potential impact of remittances on promoting access to financial services in Colombia has not been optimized, since only a negligible percentage of remittances are received through a bank account (9%). Moreover, remittance flows are not considered as income for those who receive them when analyzing their potential as credit subjects, leaving 35% (Prior, 2006) of the income received by families in the first quintile of income in Colombia out of the credit risk assessment.

Remittances could play a principal role in the development of a sustainable model of financial service distribution aimed at granting recipients access to the financial system. Also, alliances between remittance operators and financial institutions willing to incorporate remittances into the financial system would benefit from operational and income synergies. If remittance operators take advantage of these synergies, a segment of the financial industry in Colombia could see an increase in competition. As seen before, the lack of competition in the sector is reflected in higher prices of basic financial services, placing additional obstacles to bringing these services to a greater portion of the population.

The microfinance industry and the SSTA initiative

Recently, the growth of the microfinance sector in Colombia has begun to address the supply problem relative to the low levels of access to basic financial services in these countries. The

emergence of microfinance in Colombia is led by two types of institutions: banks specialized in microfinance and the leading banking institutions in each country.

Financial institutions in this market segment have been able to create sustainable and profitable business models that serve the segments of the population not served by traditional banks, through the introduction of products specifically designed for this purpose and based on the efficiency of electronic payment methods and best practices in credit risk analysis.

On the other hand, microfinance institutions still face great hurdles in their efforts to massively provide basic financial services to the unbanked segment of the population in Colombia. Because they are small, these institutions lack the investment capacity needed to implement the infrastructures needed to apply best practices in terms of products, risk, alternative channels and the optimization of the impact of remittances.

The second type of institution leading the microfinance markets in Colombia are the leading banking institutions. To optimize their existing infrastructures in the distribution of low-cost financial services, these institutions have decided to use downscaling strategies. This is the case of Bancolombia, applying best practices in the generation of alternative models of distribution of financial services. Bancolombia, through the development of alternative distribution channels, has been able to create a highly efficient business model that makes it possible to bring financial services to a large portion of the population in the country.

Nonetheless, other experiences that have yielded better results in countries such as Spain, Germany, Canada and France, where there are highly inclusive financial systems, show that public policies that promote the necessary scale for institutions specialized in microfinance are needed to massively provide financial services to the population. The Colombian government moved in this direction with an initiative called “Bank of Opportunities”, which aims to apply international best practices through the creation of a technical association of financial services (SSTA) that could provide these services to cooperative, financial or banking institutions whose small size prevents them from gaining access to these technologies individually.

This SSTA case study reviews whether this initiative will be able to accomplish its objectives as a provider of low-cost financial products and distribution networks in a sound financial manner. The information used to analyze the SSTA initiative is the study prepared by the consulting company Coinfin⁶¹ and presented to the Ministry of Finance and the Banca de las Oportunidades Committee in 2007. The initiative is currently deadlocked due to the cooperative sector’s lack of interest and the Colombian government’s decision not to participate in this initiative.

The SSTA plans to fulfill its objectives with a very light structure, since many of its activities are supposed to be outsourced. The SSTA initiative aims at being an entity that could offer effective support for regulated as well as non-regulated entities that provide financial services for people with low income. This effective support would be provided by strengthening the efficiency and coverage of the microfinance financial system which, by its nature, is closed to the poor.

The clients of the SSTA would be any microfinance institution (MFI), regulated or not, that provides microfinancial services. The proposed entity would provide the technology platform, build a transactional network and provide business intelligence services to these MFIs. The SSTA would exclusively attend MFIs and it would not directly provide services or attention to

⁶¹ Financed by PRAD/PNUD /00041324.

customers. First floor activities, particularly credit activities, would be the responsibility of the MFIs and the SSTA would not intervene in any way on the definition of such policies.

The SSTA aims at offering a consolidated value proposition that includes technology and back office operations, transactional services within a proprietary network and in the future connected also to an open payment networks, and business intelligence services to the MFIs. Those services are separated in three business lines: First, the Application Service Provider (ASP) or Business Process Operations (BPO) profit center. Second, the establishment of a proprietary network of the SSTA called “Network of Opportunities” (*Red de las Oportunidades*). This business line would provide a transactional network and methods of payment to the MFIs and their customers. Third, business intelligence services.

The Independent Service Provider Model- The WIZZIT Experience in South Africa

The SSTA initiative used the Independent Service Provider Model as a reference. WIZZIT in South Africa and Mobipay in Spain are good examples of this model. We briefly present some of the main characteristics of WIZZIT, since Mobipay is presented in the chapter dedicated to developed nations.

WIZZIT business model

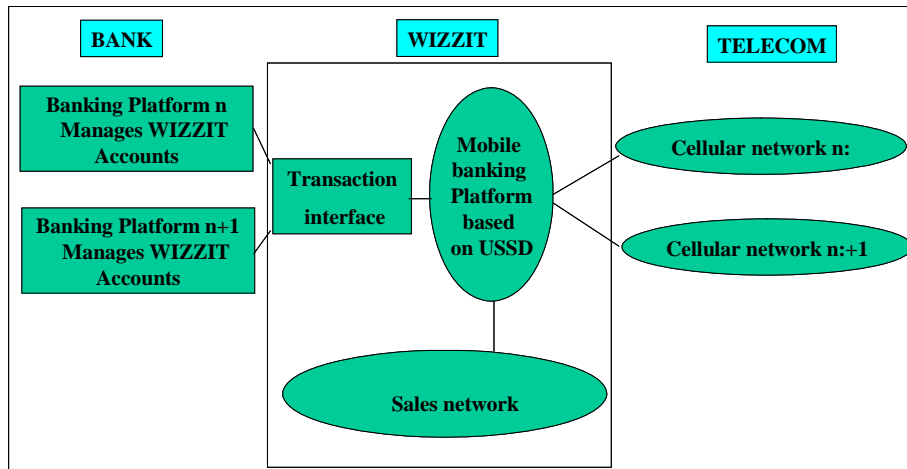
WIZZIT is a cell phone-based financial facility whose target market is the estimated 16 million unbanked or underbanked South Africans; about 60 percent of the country’s population. WIZZIT is a start-up mobile banking provider that offers a transaction banking account accessible via mobile phone and debit card. WIZZIT is formally a division of the South African Bank of Athens, which is legally liable for the deposits taken. However, the brand is owned and the operations are run by a separate entity started by independent entrepreneurs, with stakes by the IFC, Africap and Oiko Credit. The accounts are held by the South African Bank of Athens. The linkage to a clearing bank provides WIZZIT account holders access to the banking cards system of South Africa.

WIZZIT’s mobile banking business model is based on its partnership with financial institutions (the South African Bank of Athens). This fully regulated institution is the issuer and holds WIZZIT-branded bank accounts. However, WIZZIT is fully responsible for marketing, brand image and sales distribution network. WIZZIT manages its distribution, composed of commission paid agents, called Wizz Kids, Dunn’s clothing stores and Vodashops (Vodafone retail network).

WIZZIT’s payment instructions are carried by several telecommunication companies. As a result, every single telephone of South Africa could potentially be used as a method of payment. Additionally, WIZZIT’s proprietary platform allows several banks to issue WIZZIT-branded accounts.

Figure 3.3

WIZZIT business and technology platform



The table above presents WIZZIT's role as an independent service provider. First, it manages the proprietary transaction interface between the banking platform of WIZZIT's financial institutions partners and WIZZIT's mobile banking proprietary platform based on USSD technology. In South Africa the service is based on the exclusive partnership with the South African Bank of Athens, but this service could potentially be linked to any bank that wanted to issue WIZZIT accounts. Second, it manages the interface between its proprietary mobile banking platform and the telecom operators that carry the payment instruction. Third, it manages its network composed of commission-paid agents called WIZZkids. This network does however only allow users to open accounts; it does not provide any functionalities in terms of deposits/withdrawals, or acceptance network for retail purchases using the phone.

Since WIZZIT's accounts are handled by its partner financial institution (South African Bank of Athens), this bank assumes full legal responsibility for meeting regulations. These accounts are regular bank accounts, since in South Africa prepaid accounts are not accepted as a different type of account by the regulator. As a result, WIZZIT's business model does not require special financial services regulatory approval.

In addition to being able to conduct cell phone-to-cell phone transactions, WIZZIT account holders are issued Maestro debit cards that can be used at any ATM or retailer. Since the payment network used is the Maestro payment network, managed by the financial institution members of MasterCard, retailers pay the South African discount rate when WIZZIT customers use WIZZIT's cobranded Maestro card.

WIZZIT's business model is based on income from transaction fees that range from 99c (US\$0.15) to R4.99 (US\$0.78). However, in order to make the accounts more affordable to low-income users, WIZZIT does not charge a monthly fee, nor does it require a minimum balance. There are no transaction limitations, and the service is purely pay-as-you-go.

Table 3.6

WIZZIT service prices (exchange US\$1/6.8 ZAR)

Opening costs	5.2 USD
Internet banking maintenance fees	2.9 USD
Internet banking transfer intra Wizzit accounts	0.4 USD
Internet banking transfer with external bank accounts	0,7 USD
Maintenance fee	0
Debit cards (per year)	0
Telephone customer initiated transaction	0.13-0.66 USD
Discount rate	SA debit discount rate
Retail purchases with card	0

Table 3.7

Evaluation of WIZZIT's Business model

		Wizzit
Key driver of success	Access to financial services through agents	Yes
	Deposits, withdrawals, and remittances acceptance network	2000+ banks network
Business model	Partnership with bank institution	Yes
Convenience	Basic payment functions provided	Yes
	Value added payment functions provided	No
	Easy Sign Up Process	Yes
	Service presentation based on SIM Card	No
Safety	Technology used for encryption	USSD
	Autentification provided by the operator	Yes
	Authorization using PIN	Yes
Technology issues	Capacity problems	No
Regulatory issues	Regulatory special approval	No

Account opening

The accounts are open remotely by commission-paid agents called WIZZkids (main distribution channel), Dunn's clothing stores and Vodashops (Vodafone agents in South Africa). WIZZkids are typically unemployed university graduates, from low-income communities, who promote the product and help unbanked customers open accounts.

Users are provided with a welcome pack that includes educational material and a Maestro debit card that allows them to purchase goods at retail outlets and withdraw money at ATMs. This is another difference with the Smart Business Model, where the debit card is optional. Agents, especially WIZZkids, play a major role in explaining to clients how to use the accounts. Those clients, often well-known by the WIZZkids, are typically young individuals drawn from the lower income population.

For new users, registering requires the name, date of birth and national ID number. Signing up requires inserting one's national identification number into the mobile phone. The PIN number is stored in the cell phone, and therefore users can only use their own cell phone. Basic KYC responsibilities are therefore carried out by the agents, although additional information is required for account balances higher than 25,000 ZAR (US\$3,676) or individual transactions higher than 5,000 ZAR (US\$735).

The cobranded WIZZIT accounts are regular, not-remunerated checking accounts managed by the issuing bank, the South African Bank of Athens. As a result, this institution gets the income generated by the float. WIZZIT's revenues are based on the fees paid by the customers for the different transactions.

Cash deposits are not required in new accounts. However, a 20 ZAR (US\$5.20) opening fee applies. No hardware setup is required since the system is based on USSD technology. Unlike its competitors (FNB and MTN), WIZZIT does not require users to have a bank account and is compatible with early generation cell phones popular in low-income communities. The facility even works with customers who use pay-as-you-go cell phones, another distinction from WIZZIT's main competitors.

- The key driver for the success of WIZZIT's business model is the ability to remotely open and access an account.

Before WIZZIT, clients could not open bank accounts using agents. Furthermore, WIZZIT allows remote access to clients who did not previously have bank accounts, by allowing them to open an account via an agent.

Remote account maintenance is another value added provided by WIZZIT that differentiates its value proposition from its competitors. Thanks to its internet banking service, iWIZZ, users can check balances, view statements and make payments online. These services were not previously available to unbanked customers, and thanks to WIZZIT now can be used by non-affluent customers (WIZZIT market segment). Additionally, thanks to WIZZIT's tailored customer service and its network of WIZZkids, questions regarding the use of the internet banking service are easily resolved.

Transaction functionalities

WIZZIT provides full transactional capability. The account offers: cell phone functionality for person-to-person payments; airtime top-up; electricity vouchers and payments of accounts. Also, the Maestro-branded debit card allows for purchases in the formal retail sector. The account provides full banking functionality including debit orders through its internet banking service.

- Basic electronic transfer of money (P2P)

The sender initiates the transaction by sending a USSD message, using a code that is specific to the kind of transaction the user wants to make. The handset prompts the user for the necessary data, on a separate USSD message (e.g., phone#amount, PIN), and then presents a transaction summary for confirmation by sender.

The user authorizes the transaction when the PIN goes over the network in a USSD message. The PIN is therefore not stored in message history, since USSD security standards are used. The

sender gets an SMS message notifying the conclusion of the transaction. The recipient also gets an SMS with the sender's name and number and the amount received.

This system of P2P over-the-air is only available to WIZZIT registered users. However, users can send money to and receive money from non-users by using the internet banking system provided by the South African Bank of Athens through iWIZZIT.

- Cash in/out transactions

WIZZIT's value proposition does not offer any value-added services in terms of cash in/out functionalities. WIZZIT account deposit/withdrawal processes are the same as any other regular account of the South African Bank of Athens, by either using the branch or the ATM. The only difference is that WIZZIT accounts can be accessed from branches of two additional banks other than Bank of Athens, which increases its network for cash in transactions. However, this functionality is not available for cash withdrawals in these two additional banks.

The accounts can also be topped up using the internet banking service iWIZZIT from accounts in any other South African banks. Customers can use the Maestro debit card to withdraw cash in ATMs and points of sale with cash-back functionality that are part of the MasterCard network.

- Merchant transactions (purchases at retailers)

Purchases at retailers are not available using the mobile phone. WIZZIT accounts' Maestro debit card is the only electronic method of payment offered to WIZZIT account holders. WIZZIT debit cards are accepted in the MasterCard network of POS and ATMs.

Network and technology issues

The introduction of WIZZIT has had no impact on the network of South Africa, since the service can be accessed through several mobile operators. However, WIZZIT's investment in developing a technology platform that can connect multiple banking platforms with multiple telecom operators is very relevant, and is the main differential characteristic of its business model. Handset compatibility is not an issue since it uses USSD technology. Security aspects are however a priority in the development of transaction interfaces, especially in the case of South Africa with mobile operators. However, the use of USSD technology allows WIZZIT to resolve these issues without upgrading the handsets.

Regulatory issues

All transactions are held within the system of the banking partner that is responsible for meeting the central bank requirements. The partner banks handle WIZZIT accounts exactly as any other bank account. However, WIZZIT sells financial services using agents, and as result has to comply with South Africa's regulation on banking correspondents.

On the other side, WIZZIT poses no Telecommunications Regulatory Issues, since it offers traditional cellular services through multiple operators with tariffs consistent with current practices, and poses no risk to the capacity of the network.

Review of the SSTA proposal

1. Business model and revenue sources

The feasibility study of the SSTA prepared by Coinfin⁶² argued that the market potential of the proposed entity should be estimated using the existing number of clients of potential members such as Credit Unions (*cooperativas*), family allowance funds (*Cajas de Compensación*), regulated financial institutions serving the non affluent segments of the Colombian population, and NGOs. In the final draft however, only the institutions that provided an expression of interest to Coinfin and therefore their clients were considered. These institutions were:

Table 3.8

Institution	Number of clients
Compensar	1,300,000
Comfama	600,000
Comultrasan	181,309
WWB Colombia	174,000
Confiar	96,224
FMMB- BUCARAMANGA	89,321
CMM Bogotá	54,733
FINAMERICA	47,179
Corporación Mundial de la Mujer en Medellín	41,178
Comuldesa	31,023
Cootradepmeta	20,100
Compartir	18,493
Total	2,653,560

The model used to estimate the number of clients of the SSTA assumes an annual increase of 2% in the population and an increase of 8% in the population with banking access (number of customers for the institutions members of the SSTA). The model assumes that the new clients of the MFI members of the SSTA will automatically use its centralized services, while the existing clients will be migrated to the technology platform provided by (SSTA) according to the following estimates: 20% of the existing clients will be migrated the first year, 50% the second year, and 30% the third year.

Coinfin assumes that in the first year of operations the SSTA will have 900,000 users, and the projections of the model presented estimate that in year 10 of operations the SSTA will have 7,566 million users (7,222 million in average for the year). If we consider that by year 10 the Colombian population will be around 50.5 million people, the estimated market for the SSTA would represent some 15% of the population.

Coinfin argues that only when the SSTA is fully operational, it could serve the rest of the financial institutions that aim serving at low income segments of the Colombian population. Besides, it also states that the SSTA should only serve the non-bank MFIs, leaving aside Banco Agrario which is the most important MFI in Colombia and lacks the technology platform. This is a very controversial issue and is based on the existing conflicts between the cooperative sector and the banking sector. Leaving Banco Agrario out of this initiative jeopardizes the

⁶² PRAD/PNUD /00041324.

sustainability of the SSTA, since Banco Agrario is the leading MFI in terms of clients, and forces Banco Agrario to partner with another institution that offers exactly the same services as the SSTA but with worse terms.

The feasibility study of the SSTA is based on three revenue streams that mirror the business model of Bansefi in Mexico. First, the creation and coordination of a transactional network based on electronic methods of payments and prepaid cards for non-deposit-taking institutions. The network called “*Red de las Oportunidades*” will offer clients of the member MFI a full array of transactions including withdrawals, deposits and POS payments. Second, the SSTA will offer its member MFIs a common technology platform, outsourced to an Application Service Provider to manage their core banking activities.

The decision to outsource the technology platform is partially based on the problems that Bansefi experienced developing its Integrate-T platform in-house. Third, the SSTA will offer its members market intelligence through data mining and Customer Relationship Management techniques. In addition, the market intelligence unit will also provide non-bank financial services such as insurance and pension funds from third-party providers. This model of wholesale provider of non-bank products is also copied from Bansefi’s *Red de la Gente* business model.

1.1. Creation and coordination of a transactional network based on electronic methods of payments- prepaid cards

In order to estimate the number of cards issued by the SSTA, Coinfin assumes that only a small percentage of the clients of the MFIs will have SSTA-issued cards. Considering that most of the MFIs that have expressed an interest in participating in the SSTA do not currently offer cards, and that the functionality of the proposed network is based on prepaid cards, these assumptions seem to be too conservative and unrealistic for the success of the SSTA. The business model presented by COINFIN estimates that, in the first year, the SSTA will have a stock of 51,993 prepaid cards (debit cards for deposit taking institutions). By year ten the stock of active cards is estimated to reach 1.288 million out of the 7.5 million clients that the SSTA is supposed to have.

The model assumes that these cards will allow cardholders to make deposits (2 per month), withdrawals (2 per month), payments (2 per month), access to information on balances and transactions (2 per month), and transfers (2 per month). As a result, and based on the number of customers presented before, the estimated number of transactions on the network managed by the SSTA will grow from 6.3 million in year 1 to 154.8 million in year 10.

These transactions will be conducted using the two channels that the SSTA Opportunity network will build: the POS infrastructure located at existing branches and agents (retailers), and the use of cellular phones located at agents (retailers) and connected to the POS infrastructure. Coinfin estimates that, in the first year of operations, all the transactions will be conducted using the POS terminal located in existing branches of the MFIs. However, by year 5 an estimated 40% of transactions will be conducted using mobile phones. This increase in the importance of mobile transactions will however be limited, since, according to this feasibility study, mobile transactions will remain at this level after year 6.

This mix of transactions per channel is too conservative. The SSTA should be a pioneer in connecting mobile phones to its card system. Besides, since (as we will see in the investment part of this review) the budgeted cost of the POS terminals is very high, the development of a

mobile banking based transactional network could be the catalyst for the success of the Opportunities network. In addition, due to the problems that the Credibanco Visa CGAP funded project is currently having, it would be recommendable to redirect funds/efforts?, or allow this investment to also support the mobile banking capabilities of the SSTA.

On the other side, the number of SSTA customers using third-party networks, mostly ATMs but also other points of service such as banking correspondents of non-SSTA institutions, has been estimated at 5% of the total number of potential customers. This estimate is, however, calculated beginning the third year of operations of the SSTA, since the model assumes that three years will be needed in order to have network interoperability. Interoperability will be achieved by connecting the SSTA network to external networks. Given the price difference between using its own network and other networks (due to the different costs paid by the SSTA), the model assumes that only 361,000 clients of the member MFIs will be using external ATM networks and other points of service with the card issued by the SSTA by year 10 of operations.

The external payment networks considered in the feasibility study are the most important providers of card payment systems in Colombia. Coinfin lists the following card systems as networks where the SSTA could connect to: Credibanco (Visa and Amex); Redeban Multicolor (MasterCard and Diners); A Toda Hora (ATH), the private card system of Grupo Aval (Banco de Bogotá) and Servibanca, the network owned by Grupo Gilinski that manages ATM card systems for some cooperatives. The study also mentions Baloto, the lottery network that provides utilities and also other public services payments. The example of Casas Lotéricas in Brazil shows how the payment of public services could also generate important income for the SSTA.

1.2. Application Service Provider

The Application Service Provider (ASP) profit center will manage the core banking platform of the member MFIs. To estimate the number of transactions outsourced to the ASP, Coinfin took the number of customers and cards forecasted. Credits will be granted using the prepaid card platform managed by Coinfin. The number of credits to be issued by the ASP is estimated using two scenarios: First, the conservative scenario where 30% of the cardholders use their cards for receiving credit; second, the aggressive scenario where 100% of the cardholders receive credit on their cards. In the case of accounts, 100% of cardholders will have accounts managed by the SSTA.

For each credit, Coinfin estimates that 18 transactions will be processed by the ASP. For each deposit account Coinfin estimates 11.2 transactions. The cost and prices of these processes were estimated based on the Bansefi experience in Mexico (Bansefi charged its MFI clients US\$500 per terminal, and between US\$0.1 and 03 per transaction).

1.3. Data mining, CRM and third-party product offering

The data mining and CRM profit center (defined in the feasibility study as *Inteligencia de negocios*) has revenues coming from insurance and pension products sold to SSTA member customers. It also offers services to SSTA members such as market research, data mining, risk analysis and customer relationship management. The model prepared by Coinfin, however, does not include revenues from these activities in order to follow a conservative approach.

The model assumes that the market research unit of the SSTA would be able to offer insurance and pension products to 20% of the SSTA's potential customers. Based on this assumption, the model estimates that by year 10, insurance and pension products will be bought by 1.444 million clients out of the 7.566 million customers the SSTA will have.

2. Review of the mobile banking component

The SSTA's business model estimates that by the end of the year 4, 40% of the transactions managed by the SSTA will be channeled via a mobile phone. This assumption is very aggressive, since there is no example in any other country in the world where mobile banking transactions, whether deposits, payments or withdrawals, represent such an important percentage of transactions of any multichannel network. Then, somewhat surprisingly, once the infrastructure is in place mobile banking transactions are not forecast to increase as a percentage of total transactions.

Mobile banking in Colombia has not developed as extensively as in other countries such as the Philippines, Japan and South Africa. A technology pilot has been developed by the card processor Redeban Multicolor (MasterCard processor) and the three major mobile operators Comcel, Movistar and Tigo. This pilot currently offers the customers of Bancolombia and AV Villas access to their accounts and internal transfers within the same financial institution. However, in the near future it is expected to offer cash withdrawals, merchant purchases and bill payments.

This system is based on a platform developed by Gemalto that each operator owns and which is connected to Redeban's Switch. As a result, the mobile operators charge Redeban per transaction; Redeban charges the banks and the banks charge the customer. According to the conversations we have had with Comcel executives, they are also planning to develop private systems directly with banks (Fondo Nacional del Ahorro), without connecting first to Redeban.

Based on the transactional mix presented in the feasibility study, the SSTA network system bases a great part of its value proposition on offering transactional services through mobile phones. The system is not clearly described in the feasibility study, although it clearly states that it needs the customer to have a mobile phone. The merchant or agent can have either a POS or a mobile phone (provided the adequate software has been downloaded). The system is supposed to work with any of the three major mobile operators (Comcel, Movistar and Tigo) although nothing is being said regarding the technology investments required or the necessary partnership with an Independent Service Provider or Redeban.

The SSTA system is supposed to provide access to account information directly from the customer handset, and mobile transactionability within the opportunities network by phone. An example of a mobile banking transaction presented in the SSTA feasibility study is as follows:

1. The customer approaches a Point of Service within the Opportunities Network (Punto de Servicio de Red de las Oportunidades- PDS) and identifies himself by presenting an ID.
2. The Point of Service uses its terminal (either a POS or a mobile phone) to conduct the transactions offered: deposits, payments or withdrawals.
3. The telecom operator sends the transaction to the SSTA.

4. If the transaction is authorized by the SSTA, the ASP sends a message to the telecom operator of the client that reroutes it to the client who confirms the transaction details.
5. The system requires authorization from the user by inserting the PIN (no details are provided on whether this authorization will be processed via an SMS or a USSD-based system).
6. Authentication is provided by the customer's mobile phone, properly registered in the SSTA database.
7. The SSTA debits the client's account and credits the Point of Service's account.

Although no details are provided of the technical description, nor the financial model of how this system would be implemented, it seems as if the basic questions – such as customer identification, transaction functionalities and security issues related to the authorization and authentication – are being considered but not yet resolved. However, the feasibility study does not consider critical elements such as the interface with the telecom operators provided by the Independent Service Provider, and the regulation of prepaid accounts. As a result the investments are not properly estimated, transactions are not accurate and the regulatory risk is not properly considered.

The use of external networks is also considered in the feasibility study prepared by Coinfin, although not properly analyzed. Coinfin estimates that access to external networks will be possible when the switch is introduced in year 3, so communications can be established between these financial networks, such as Redeban, and the SSTA's card processor, the SSTA's central processor and the individual MFI's processor. However mobile banking transactions are estimated to take place as of year 2, which implies that a proprietary private system is being used. No details of this system are provided, nor the investment required.

3. Investment and other costs

According to the feasibility study analyzed, the Opportunities network will require the purchase of 500 POS during the first year of operations. The cost of each POS is estimated at US\$400, which implies that the initial investment in POS in year 1 will be US\$200,000. The following POS purchases will be financed by the income generated from the transactions managed by the SSTA. In the financial model, those new investments are forecast in year 3 (US\$60,000), year 6 (US\$60,000) and year 9 (US\$60,000).

In year 3, the SSTA's financial model assumes that a Switch for connecting to external networks will be bought. The investment estimated in the financial model is US\$1 million. Both the POS system and the Switch will require maintenance during the SSTA's years of operations, financed by the income generated from transactions. Annual maintenance costs are estimated at 20% of the initial investment.

The technology platform of the Application Service Provider business model does not require any initial investment since it is outsourced. Data mining and CRM services require initial investments of US\$15,000 USD with annual maintenance of 20% of the purchase value.

Investments to equip the administrative area are estimated at 30 PCs costing US\$1,600 each, totaling US\$48,000. In addition, the financial model includes an additional investment of US\$1,000 required to equip the offices with furniture and other hardware, totaling US\$30,000. Maintenance of equipment and furniture are considered expenses in the P&L and estimated at

around US\$7,500 a year. Other relevant expenses are public services, communications and legal issues that, with the rent of the headquarters, total approximately US\$300,000 the first year, and US\$100,000 annually thereafter. Salaries are estimated at US\$46,000 annually.

The total investment required in order to set up the SSTA is approximately US\$4 million during the forecast 10 years, with the most important investment being the purchase of the Switch infrastructure. These investments assume that the SSTA outsources its technology platform and uses low-cost transaction channels such as POS and mobile phones.

Conclusions

The model proposed is technically feasible, as the Mexican experiences of SYNCRONET and BANSEFI prove. According to the feasibility study prepared by Coinfin the SSTA would also be financially sound and will begin generating profits as of year 4. The SSTA can charge higher prices in the first years of operations due to existing market conditions in order to break even as soon as possible. Once the SSTA breaks even it can lower its prices to allow the MFIs to benefit from its economies of scale while preserving its financial sustainability.

However, the analysis of the investment plan presented previously shows how some of the required investments seem to be underestimated. There are no migration plan costs in the ASP business model for cooperatives with existing technology platforms or databases and no investment plan for developing mobile banking functionalities. As a result, the estimated US\$4 Million seems to be unrealistically low for developing a proprietary network based on POS and mobile banking. In addition, the feasibility study proposes a channel mix highly based on mobile banking transactions using an Independent Service Provider (ISP) business model without mentioning either the potential technology providers or the involvement of telecom operators.

As in the case of ASP providers, ISP providers would charge as per the transaction model used in the cards industry, known as the “cobranded business model.” These operating costs are not clearly specified in the feasibility study either. Besides, as previously mentioned the technology platform offered under the scheme of an ASP should be of interest to mid-sized cooperatives that are aware of the importance of technological platforms. However, some of them have already started developing their own platforms. Migrating to the SSTA would require that the required migration costs are sufficiently based on cost savings, increased transactionality, product offering and migration feasibility.

Based on the conversations held with the consultants that prepared the feasibility study, Coinfin assumed that the MFIs would assume the migration costs to the new platform. This can be however a very important obstacle and explains why most of them, and especially the bigger MFIs with existing platforms, are not willing to participate in and finance the SSTA initiative. Although the feasibility study assumes that the ASP will lead and help MFIs make the migration painless, and that the government will help small MFIs finance their migration, this factor is a very significant obstacle that explains the lack of support that this initiative has within the cooperative sector.

The SSTA’s key financial sustainability driver is the number of users it has and the transactions they conduct. This is why it is so important to get members with a large number of existing customers into the SSTA. The expressions of interests received by Coinfin prove that there is

sufficient demand among MFIs to make the SSTA break even. Once break-even is reached, the SSTA could offer its services to all the institutions aiming at banking the unbanked, including NGOs that currently lack the size to become members of the SSTA in the first phase.

However, as in the case of the investments, some of Coinfin's assumptions in the feasibility study do not seem to be accurate. The estimated stock of cards for the first year is 50,000, out of the SSTA's estimated 900,000 customers and the 2.6 million potential customers of the MFIs that have expressed interest in this initiative. As the transactional channels built by the SSTA are based on electronic banking products, having such a conservative forecast in terms of cards is not consistent with the proposed business model. Indeed, the services as a card and transactional network provider are by far the most demanded function of the SSTA. This demand is in part explained by the monopolistic control that the banking industry has over the card network in Colombia and which has prevented the participation of non-banks. Indeed, the cooperative sector is very interested in being able to issue cards and use low-cost intermediation channels such as POS and mobile phones.

Although the feasibility study states that cards should be the primary transactional instrument of the network, the very limited number of cards estimated may make us think otherwise. The conversations held with Coinfin executives confirm this view, and electronic banking products were finally considered only a complementary instrument instead of the primary transaction instrument to be used by the customer (even incumbent retail banks such as BBVA have already implemented this strategy of a issuing, by default, a debit card to every customer). This approach misses a great and unique opportunity of harmonizing and increasing the efficiency of the MFI systems, and as result reduces the interest these institutions may have in the SSTA.

Another problem not solved by Coinfin is the management of the MFIs' customer databases. According to the feasibility study, the management and the databases will be transferred to the ASP provider. Although the data mining and CRM functions provided by the SSTA are not perceived by the MFI sector to be so important, the control of their clients' data has been a major issue in the Bansefi initiative, and it could also become an obstacle for the development of the SSTA. As a result, the solution proposed should describe in more detail the databases' access and control methods. However, it is justifiable to exclude any potential revenue from these activities in the short term. The MFI sector is not yet aware of the importance of commercial and marketing techniques such as data mining and CRM. However, they do perceive as very useful the role of the SSTA providing non-banking services such as insurance and pension funds to MFIs and its ability and leverage to negotiate with providers.

In this regard, the non-provision of remittances is one the major weaknesses of the proposed initiative. As previously shown, remittances in Colombia represent very significant flows of capital received by that part of the population which is mostly served by the MFI sector. As a result, the non-provision of remittances is a weakness in its value proposition that could jeopardize the future sustainability of the SSTA. In the case of Bansefi, the most appealing product offered by "*La red de la Gente*" to its network of MFIs is indeed remittances.⁶³

The proposed legal form of the SSTA is a *Sociedad Anónima*, a form that prevents possible conflicts of interest among the members/clients. From an organizational point of view, the proposed SSTA has a very light structure due to the outsourcing of most of its functions except

⁶³ Although they have not been very successful in gaining market share, and manage just 1% of the total amount of remittances received in Mexico.

for data mining and CRM. Its main responsibility is therefore to find reliable external providers and negotiate good prices on behalf of its members.

One of the most controversial issues regarding the SSTA is its political autonomy. The state's participation is a controversial issue. Although the state's participation was proposed at the beginning by Coinfin mirroring the Bansefi example, the *Banca de las Oportunidades* committee decided that the government should not have any direct participation in the proposed entity. This decision was based on the complexities of a possible privatization within the current regulatory framework in Colombia. Besides, the cooperative sector had enough funds resulting from the privatization of Megabanco to finance the investments required in the feasibility plan without the participation of the state. However, at this point the priorities of the cooperative sector seem to be something other than the development of the SSTA, which explains the initiative's current deadlocked situation.

In conclusion, although the SSTA initiative aimed at increasing the efficiency and the range of products offered of the MFI sector following an adequate architecture, it did not solve the basic operational issues to make the initiative successful. First, it did not give electronic banking products and prepaid cards in particular the required importance. Second, it did not propose how to use low-cost distribution channels efficiently since it did not solve operational issues such as interfaces, relations with mobile operators, and the building up of the private network. Besides, the cost of the POS proposed is much higher than the optimal cost to make the system financially sound. Third, it did not solve problems related to the access and management of customer databases. Its failure to do so prevents the proposed SSTA from offering centralized credit scoring or customer relationship management services. Fourth, it did not offer remittances services. Given the importance of remittances in Colombia, the lack of this offering makes the SSTA especially irrelevant for the Microfinance Sector since most of its clients are remittances receivers. Fifth, it did not solve incentive and management issues related to the participation of the state. Indeed, our previous research clearly identified the search for economies of scale as one of the five pillars on which the proposed model was based. It also presented the cases of Spain, France, Germany and Canada as best practices to be looked at when defining policies for increasing the efficiency of the MFI sector. All these experiences, including the more recent initiative of Bansefi in Mexico had, in some way, the state's participation. The refusal of the Colombian state participation (lead by Marulanda Consultores, and the *Banca de las Oportunidades* committee) was another obstacle that explained the failure of the SSTA initiative.

3.1.3. G-Cash And The Banko Initiative: Evolution And Convergence

Speaking to an audience of microfinance and mobile banking experts, Rizza Maniego-Eala, President of G-Xchange, Inc., Globe's wholly-owned subsidiary running its m-commerce business with its flagship service, GCASH, presented the company's new strategy for mobile banking in the Philippines.

"The first element in our strategy is to offer not only a mobile wallet but participate in full banking services in partnership with a new bank. As we have reported, Globe recently purchased a 40 percent stake in BANKO, a savings bank in partnership with our sister company, Bank of the Philippine Islands (BPI) which retained a similar 40 percent stake. The remaining

20 percent was purchased by our common major shareholder, Ayala Corporation. The bank's new name, BPI-Globe BanKO Savings Bank, was recently approved by the central bank.

"The ultimate thrust of this investment is to find new products that link mobile with microfinance activities that could help propagate financial inclusion to more than half the Philippine population still unable to have access to various financial services. We want to extend our understanding of both banked and unbanked customer needs with the intent of coming up with more innovations that may be shared with all our rural bank / MFI partners over the medium-term.

"For example, we are looking to understand how to develop credit scores using GCASH and other mobile data points to deliver loans remotely. We don't know what this score will look like and how we will go about testing it. We hope to test this within our current customer base. If we come up with a solution, we would like to use the insight to develop tools for rural banks and other MF providers in the country.

"The second element in our strategy is to offer a larger network of cash-in and cash-out points that will benefit not only remittances but other financial transactions that GCASH offers today such as access to deposits and withdrawals, salary and fund disbursements, donation, online purchases and bills payment facilitated simply by text messaging. One of the challenges we experienced at the provincial level was being able to further grow the merchant partner ecosystem. There needs to be more cash-in and cash-out points closer to the areas where potential users live or earn a living.

"We tried to find a solution to this constraint, and currently, GXI is in the final stages of getting the central bank's (Bangko Sentral ng Pilipinas - BSP) approval to enable all of Globe's 15,000 load sub-distributors nationwide to form part of GCASH's cash-in and cash-out network with GXI being fully responsible for this network's KYC and AML compliance. The addition of these 15,000 sub-distributor outlets, together with GCASH's existing 3,000 cash-in and cash-out points will significantly increase touch points to our customers."

In March 2010, Josaias T. de la Cruz, the newly appointed vice-president of BANKO and a former executive of the Bank of the Philippines Islands (BPI), was trying to solve the same problems. In their new functional offices in the ground floor of the BANKO centre, he was discussing with Mac P. Garcia, the other vice president of BANKO, how to successfully launch their newly created financial institution.

Low-income banking strategy of the Ayala Group

Ayala Corporation is a holding company for the diversified interests of the Ayala Group. It was founded in 1834 and is the oldest and the largest conglomerate operating in the Philippines. The company has a portfolio of diverse business interests including investments in retail, real estate, banking, telecommunications, electronics, information technology, water infrastructure and management and business process outsourcing.

In the late 1800s, Ayala participated in the construction of the Colgante and the Ayala bridges and in 1888, it introduced the first tramcar service in the Philippines. Ayala was mainly responsible for the development of Makati as the financial district of the Philippines. Ayala was recently named (2007) by Asiamoney as the country's best managed large-capitalization company.

The Ayala Corporation holding company currently manages the following group of companies:

- Financial Services: *Bank of the Philippine Islands*
- Telecommunications: *Globe Telecom, Inc.*
- Real Estate: *Ayala Land, Inc.* which includes *Ayala Malls*, *Avida* (formerly Laguna Properties), *Alveo* (formerly Community innovations), *Ayala Land Premier*, *Ayala Business Scapes*, *Ayala Hotels*, *Makati Development Corp.* & *Ayala Property Management*
- Utilities: *Manila Water Company Inc.*
- Electronics and Information Technology: *Integrated Microelectronics, Inc.*; *Azalea Technology Investments, Inc.*
- Automotive: *Ayala Automotive Holdings Corporation*; *Honda Cars Makati, Inc.*; *Isuzu Automotive Dealership, Inc.*
- International: *Ayala International Pte Ltd*; *Integreon Managed Solutions, Inc.*
- Social Commitment: *Ayala Foundation Inc.*
- BPO Call Center: *eTelecare*

Bank of the Philippines Islands is the Philippines' oldest bank,⁶⁴ and the third largest in terms of assets behind Banco do Oro and Metrobank. BANKO was the result of the expansion and development of the microfinance activities of BPI that started in 1989 when it was the first Filipino bank to lend to MFIs through the BPI foundation. In 2005 it created a microfinance unit that managed wholesale banking with the MFIs. By 2009 it had lent more than US\$940 million, with US\$705 million outstanding.⁶⁵

In 2006, chairman Jaime Augusto Zobel de Ayala⁶⁶ decided to converge the different Corporate Social Responsibility Initiatives of the Ayala group of companies to serve the "base of the pyramid." As a result, in 2008 the President of BPI, Aurelio Martinola III, and the President of Globe, Gerardo Ablaza, decided to create BANKO.

BANKO, which in Filipino means "my bank,"⁶⁷ was launched on February 2, 2010. BANKO's shareholder structure is 80% owned by BPI and Globe equally, and the remaining 20% directly by the Ayala Corporation. BANKO aims to provide financial services to the base of the pyramid by:⁶⁸ 1) managing the wholesale business that BPI had with MFIs, and 2) developing retail microfinance activities serving the lowest income segments of the Filipino population (d and e as defined by the central bank), using the mobile telephone as a transaction and distribution

⁶⁴ It began in 1828 when, as the Philippines reaped the benefits of increased trade, King Ferdinand VII of Spain issued a decree mandating the establishment of a public bank in the Philippines. However, it took 23 years before that bank could become a reality.

⁶⁵ Information provided by Josaias T. de la Cruz (vice president of Banko) in March 2010.

⁶⁶ In January 2006, the board of directors publicly announced the decision by Jaime Zobel de Ayala to retire as chairman of the corporation by April 2006. The board also announced Zobel de Ayala's appointment as chairman emeritus upon his retirement. His older son, Jaime Augusto Zobel de Ayala, is now the current chairman and CEO of the corporation while his younger son, Fernando Zobel de Ayala has assumed the position of president and COO. The family holding company Mermac continues to hold a majority stake in Ayala Corporation.

⁶⁷ Similar to the brand Mibanco (My bank), a very successful microfinance institution operating in Peru.

⁶⁸ Strategy explained by Josaias de La Cruz (vice president of BANKO) in March 2010.

channel, through the platform developed by GCash.⁶⁹ BPI will continue to serve the affluent and middle class segments (segments a, b and c) and undertake corporate banking through its 800 branches and ATMs.

BANKO just launched a 6-month pilot, to develop and test the following financial services:

- Microloans based on the ASHA and Grameen methodology to groups of 30 women: loans from 3,000 to 5,000 PhP paid in 3 to 5 months without collateral. Weekly group payments in *Kaban* (groups).
 - a) The disbursement of the loan, after credit analysis and approval, will be delivered through the phone onto the GCash wallet.
 - b) Cash in/out will not be performed at BPI branches, but at the GCash cash in/cash out (CICO) network if it is considered adequate.⁷⁰
- Forced savings. This type of savings will not be used as collateral but rather as a way to promote education for savings. They will amount to 10% of the loan, and will be remunerated at a 3% interest rate.
- Life Micro insurance. The guarantee of the loan will be provided by the Life microinsurance⁷¹ attached to it. This micro insurance will cost 66 pesos per month, and in the case of death of the beneficiary or his/her spouse, will ensure the payment of the loan by providing:
 - a) 65,000 PhP for the beneficiary (usually a woman) in the case of death of the spouse.
 - b) 65,000 PhP for the spouse in the case of death of the beneficiary.
 - c) 10,000 PhP per child (maximum 3) in the case of death of either the beneficiary or the spouse.
- Micro savings: Voluntary savings, remunerated at 3% rate per annum. It includes free insurance and covers up to 5 times the value of the loan.
- Other products envisioned and not yet developed:
 - a) Microhousing loans (50 to 100,000 PhP).
 - b) Microagriculture loans.
 - c) Microenergy loans, to buy solar panels for communities that are not connected to the electrical grid.

Mr. de la Cruz envisioned BANKO's ultimate strategy⁷² as a way of developing a services platform for Microfinance Institutions (MFIs). This platform could be used by MFI's either by outsourcing its services platform while keeping deposits and assets on their balance sheet, or by becoming a BANKO agent. This second possibility is being negotiated with the Central Bank,

⁶⁹ However, and due to the current banking regulation, it will need to create a network of 17 regional branches, since Filipino regulation requires having a branch less than an hour's distance from where the depositor is located.

⁷⁰ This is the main challenge that Mr. de La Cruz thinks BANKO needs to resolve.

⁷¹ The insurance is provided by Ayala's insurance subsidiary.

⁷² Once the services platform described earlier is successfully tested.

since banks are not allowed to outsource their inherent banking functions to third parties, nor their KYC responsibilities, although the BSP is considering the possibility of permitting agents to perform KYC.⁷³

This value proposition will be coordinated from the 17 regional offices BANKO is setting up, whatever the model chosen by the MFI. In the service package BANKO would therefore include: the Payments platform (GGash); the Banking platform (BANKO) and also access to wholesale finance (BANKO).

Up close: GCash Business Model

GCash is the mobile wallet service of GXchange (GXI), a wholly-owned subsidiary of Globe Telecom. Globe Telecom is the second most important cellular telecom provider of the Philippines, with 23 million voice subscribers as of January 2010.⁷⁴ GCash can only be used by Globe users who are offered prepaid accounts held by GXI.

As of January 2010, GCash had 1.2 million active subscribers out of 23 million Globe voice subscribers. In 2009 It managed an annual transaction volume of PHP 60 billion (US\$1.3 billion), based on a monthly average of PHP 5 billion.

GCash aims to transform a mobile phone into a virtual wallet, enabling subscribers access to a cashless and card-less method of facilitating money transfer with just a text message. As a result there is no linked debit/ATM card. GCash offers customers:⁷⁵

- Domestic and International Remittances: Sending of money via GCASH is supported by a wide cash-handling network, including leading local and international remittance companies backed by reputable settlement banks.
- Send GCASH: Person-to-person (P2P) money transfer allows sending GCASH to any Globe or TM subscriber.
- Buying prepaid load: Buying prepaid load with GCASH allows customers to get 10% back.⁷⁶
- Micro-Payments: Payments for purchases from a growing list of merchant partners, including essentials such as government taxes, medicines, boat fares, food, and school and office supplies.
- Micro-Credit Payments: Allows disbursement of loan principals, payment of loan interest and amortization payments to lower-income consumers with limited access to banks.
- Bills & Tuition Fee Payments: Allows payment of bills of various utility companies, internet service providers, insurance companies, as well as schools and universities.
- Donations: Provides a quick and safe processing of GCASH donations to different institutions.

⁷³ CGAP, 2010.

⁷⁴ CGAP, 2010.

⁷⁵ See details on www.GCASH.com.ph/.

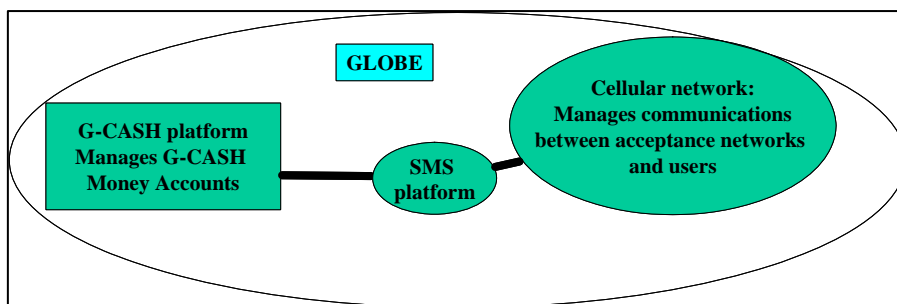
⁷⁶ Promotion offered in March 2010.

GCASH presents a non-bank-based model of mobile banking. GCASH clients load cash onto electronic “wallets” from which they then make payments (via SMS) to other GCASH clients using their Globe mobile phone. Value in GCASH accounts, and information about transactions, is held by GXI, which is registered with BSP as a remittance agent and an e-Money issuer. Customer funds are pooled and deposited by GXI in several commercial bank accounts held in GXI’s name. GXI follows an internal policy of matching the value in GCASH accounts on a 1:1 basis with funds deposited in GXI’s bank accounts.

The GCASH business model is based on its in-house prepaid platform, developed by its fully owned subsidiary GXI and built by Utiba. GXI holds the deposits managed by its platform, and therefore takes full regulator responsibility. Customer account records are held electronically by GXI, which has an in-house system for monitoring and reporting of suspicious transactions. The development of this platform has been costly. However, since it is an in-house development it allows GCASH to offer tailored services to its customers.

Figure 3.4

GCASH Business and technology platform⁷⁷



The GCASH mobile banking business model is more complex and costly than Smart’s solutions. Furthermore, it also required special regulatory approval by the Central Bank of Philippines. The BSP-GXI relationship has been a model of a successful partnership between government and private actors and both parties note that dialogue was critical in forging a workable arrangement.

Its independence from any given financial institution gives GCASH the ability to develop more value-added services, generate income from its cash float and future financial activities. The float is limited, however, due to wallet limits imposed by e-Money regulation: Single transaction limit: PHP 10,000 (approx. US\$217); Daily limit: PHP 40,000 (approx. US\$866); Monthly limit: PHP 100,000 (approx. US\$2,165).

GCASH has a simplified two-step account-opening process with no cost for the consumer: 1) The client applies by sending GXI (2882) a text message with the letters “REG”, a 4-digit PIN, client’s mother’s maiden name, client’s name, and client’s address. The client receives confirmation via SMS. 2) The client must present (at one of 1,500 Globe-owned stores or merchants certified as remittance agents under BSP Circular 471) two forms of valid ID and complete a registration form every time a transaction is performed.⁷⁸

⁷⁷ Infodev, 2006.

⁷⁸ www.smart.com- see more details in Annex I.

Table 3.9

GCASH Business model

		G-Cash
Key driver of success	Low cost/low value top up system	Yes
	Deposits, withdrawals, and remittances acceptance network	3,000+ 15,000 (accredited)
Business model	Partnership with bank institution	No
Convenience	Basic payment functions provided	Yes
	Value added payment functions provided	Yes
	Easy Sign Up Process	Yes
	Service presentation based on SIM Card	Yes
Safety	SIM based encryption	Yes
	Autentification provided by the operator	Yes
	Authorization using PIN	Yes
Technology issues	Capacity problems	No
Regulatory issues	Regulatory special approval	Yes

Unlike Smart, GCASH runs its own clearing system: each retailer and user has an account with GXI. GXI assumes liquidity, fraud and money laundering responsibilities with the central bank. Settlement is carried out through Globe’s merchant bank and with retailers’ banks via the cash management system of Globe’s merchant bank.

- The key driver for the success of GCASH has been its function as a prepaid airtime payment method.

The efficiency of this micropayment instrument allowed Globe to offer low minimum values for top-ups or credit transfers (sachet purchasing or micropayments) at competitive prices. That is why this service is offered over-the-air with occasional promotions that save customers up to 10% of the value of their top-up. However, as opposed to Smart, GCASH does focus on developing new revenue streams from traffic and financial revenues.⁷⁹ These additional revenue sources should help GXI break even on its investment in the development of its proprietary platform. Since this platform is not an add-on infrastructure as in the case of Smart, additional sources of income (and not only increased efficiency) are required to finance it.

⁷⁹ GCASH financial income is mostly based on the float kept by GXI.

Table 3.10

Evaluation of GCASH Business Model

		G-Cash
Key driver of success	Low cost/low value top up system	Yes
	Deposits, withdrawals, and remittances acceptance network	3.000+ 15.000 (accredited)
Business model	Partnership with bank institution	No
Convenience	Basic payment functions provided	Yes
	Value added payment functions provided	Yes
	Easy Sign Up Process	Yes
	Service presentation based on SIM Card	Yes
Safety	SIM based encryption	Yes
	Autentification provided by the operator	Yes
	Authorization using PIN	Yes
Technology issues	Capacity problems	No
Regulatory issues	Regulatory special approval	Yes

Mobile banking with GCASH: More than mobile payments?

Until starting up BANKO, GCASH offered mobile banking through two partnerships. The first was with BPI, also part of BANKO and the Ayala Group of companies. The second, and the most relevant in terms of value proposition, was offered to GCASH customers via its partnership with the Rural Bankers Association of the Philippines and the Microenterprise Access to Banking Services of the USAID in the Philippines.

Mobile Phone Banking via BPI Express Mobile allows customers to check their accounts, perform fund transfers, or load GCASH wallets straight from their BPI accounts. In order to have the mobile banking facility, customers need to sign-up for BPI Express Mobile.⁸⁰ Loading GCASH wallets via BPI Mobile Banking is subject to a banking fee of P20 or 1% of the transaction, whichever is higher. The amount is debited from the source account upon successful loading. Transferring funds from a GCASH wallet to a BPI account via BPI Mobile Banking is also subject to a banking fee of P70 or 1% of the transaction, whichever is higher. The amount is debited from the source account upon successful transfer.

The partnership with the Rural Bankers Association of the Philippines and the Microenterprise Access to Banking Services of USAID in the Philippines was launched in November 2004, when the Rural Bankers Association of the Philippines (RBAP), in coordination with the MABS Program, signed an agreement with Globe Telecom-GXI to pilot test the RBAP Text-A-Payment service. Text-A-Payment, or TAP for short, is an innovative micro loan collection service conceptualized and initiated by the MABS program.

After RBAP and its MABS program conducted an initial assessment and got approval from the Philippine Central Bank (BSP) on February 1, 2005, 4 banks were selected (2 banks in Mindanao and 2 banks in Luzon) as pilot test sites for TAP. In January and February 2005, MABS and GXI jointly conducted training for the pilot banks. The training included orientation

⁸⁰ See details on www.GCASH.com.ph/.

of bank staff and borrowers on GCASH and Text-A Payment policies and procedures, which included security considerations, borrowers' and banks' responsibilities, and contingency plans for handling any potential problems and concerns.

The conduct and experience of the TAP pilot test was documented, discussed and analyzed, then expanded to other banks. By late 2005, RBAP, through the support of its MABS program, got approval to expand mobile phone banking services to offer GCASH CICO services in order to facilitate mobile phone-based money transfers. By September 2006, rural banks further expanded these services to include deposit taking (Text-A-Deposit) and by June 2007 rural banks were authorized to offer mobile phone-based withdrawal services (Text-A-Withdrawal).⁸¹

Management of the network of agents: the problem to be resolved by BANKO: Which network to use?

GCASH users can do cash-in and cash-out at more than 2,750 Globe-owned stores and outlets of GCASH partners registered as remittance agents under Circular 471, and they can do cash-out at an additional 250 remittance agents. Cash-in is also available at 2,500 ATMs and cash-out at 9,000 ATMs. An additional 6,000 merchants accept GCASH for purchases.

In January 2010, BSP approved the licensing of 15,000 GCASH agents. They are in the process of becoming fully functional. Clients of the Bank of the Philippines Islands (BPI) can transfer funds between their BPI account and their GCASH account. GCASH also permits transfers between several rural banks and GCASH accounts.

Agents can charge from 1-3% for cash in (though Seven Eleven stores can charge up to 5%), the same for cash-out. GCASH has started paying agents cash-in fees so they stop charging consumers the additional cash-in fee.

- *Cash in* transactions per network:
 - Globe Business Centers (180): Customers can go to any Globe Center and request a GCASH *cash-in* transaction. They will need to fill in a GCASH Service Form, and present any valid ID to complete their transaction. Cashing in at a Globe Center is free.
 - Accredited GCASH Partners (1,570): As in a Globe Center, customers need to fill in a GCASH Service Form and present a valid ID to complete their GCASH *cash-in* transaction. They may be charged a transaction fee, which may vary per partner (1-to 5%).
 - Bancnet ATM (2,500): Customers can also convert the cash in their Bancnet account to GCASH. To convert, they just need to go to any Bancnet ATM, select the option to transfer funds to Asia United Bank/GCASH. Customers will then be asked to key-in the 11-digit number of the mobile number they wish to load. After the transaction is completed, they will receive a text confirmation. Bancnet currently

⁸¹ For more details visit www.rbapmabs.org/.

only accepts cash to GCASH conversions. Customers are charged P25 per transaction.

- Customers can cash in their GCASH at 1,000 Rural Bank branches accredited as remittance agents. Commissions vary, but usually do not exceed 1%.
- *Cash out* transactions per network.

Converting GCASH to cash is done at a Globe Center or at any accredited GCASH partner. There are several networks that can be used to convert GCASH to cash, and customers can choose the option that is most convenient.

- Globe Business Center (180): Customers can go to any Globe Business Center and request a GCASH cash-out transaction. They will need to fill in a GCASH Service Form, and present any valid ID to complete their transaction. Cash out transaction fees at Globe Business Centers apply (1%).
- Accredited GCASH Partner (1,820): As in a Globe Center, they will need to fill in a GCASH Service Form and present a valid ID to complete their GCASH cash out transaction. Customers may be charged a transaction fee, which may vary per partner (1-5%).
- Bancnet ATM (9,000): Customers can also convert the GCASH to cash in their Bancnet. To convert, they just need to go to any Bancnet ATM, select the option to cash out GCASH. Customers will then be asked to key-in the 11-digit number of the mobile number they wish to unload. After the transaction is completed, they will receive a text confirmation. Customers are charged P25 per transaction.
- Customers can cash out their GCASH at 1,000 Rural Banks branches accredited as remittance agents. Commissions vary, but usually do not exceed 1%.

The remaining challenge: the CICO network

GCASH has an extensive network of CICOs, but they have different marketing and pricing policies and products, unlike M-Pesa in Kenya⁸² where the unified marketing has proved to be one of M-Pesa's keys for success. With the new registration process agreed with BSP, GCASH has been able to obtain the accreditation for 15,000 sub-distributors⁸³ serving 700,000 retailers. These retailers provide e-loading and other telecom services but are not registered as remittances agents and as a result cannot provide CICO transactions.

Josaias T. de la Cruz and Mac P. Garcia, the newly appointed BANKO vice presidents were about to meet Rizza Maniego-Eala, President of G-Xchange. While preparing for this interview, Mr. de La Cruz and Mr. Garcia were thinking what BANKO's strategy should be regarding its network. Indeed, they had decided that BANKO should not make the client pay for CICO transactions; BANKO should also have a standardized network in terms of image, products and prices; and should be able to serve all existing GCASH customers. Having made these decisions, they needed to decide whether they would use the GCASH network or create their own, by answering the following questions:

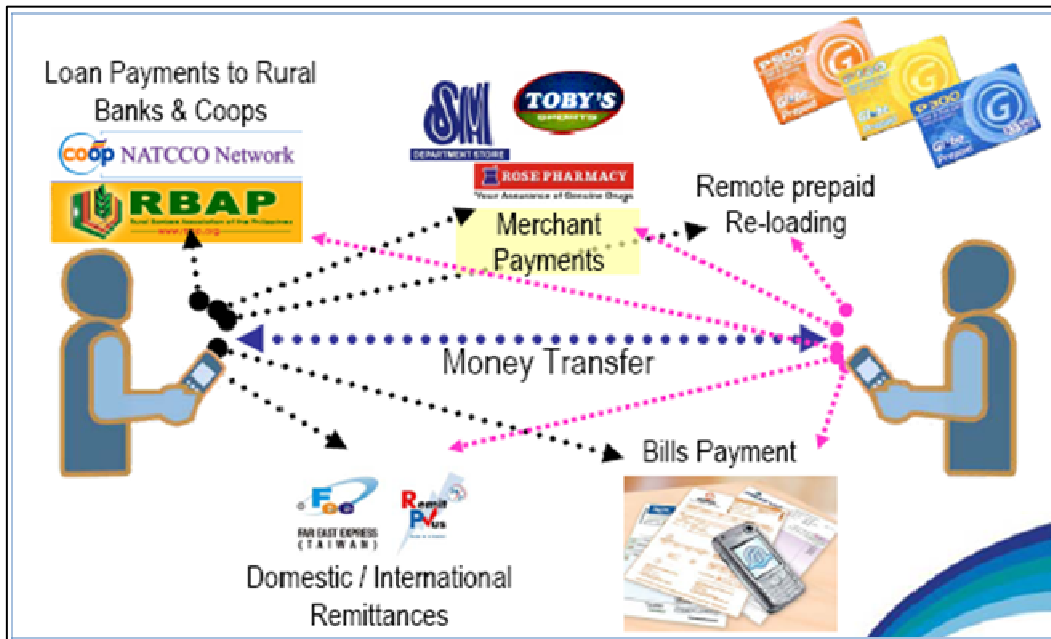
⁸² Gates Foundation, 2009.

⁸³ The e-loading structure of Globe is composed of territory-exclusive distributors of Globe; sub-distributors that have a contract with the distributors, and retailers that have a contract with the sub-distributors.

- Does GCASH have the capacity to train the 15,000 newly accredited partners?
- Can GCASH unify its network in terms of image, products and prices?
- Does BANKO have the capacity to create and monitor a newly created CICO network from BANKO's regional offices?

Annex I

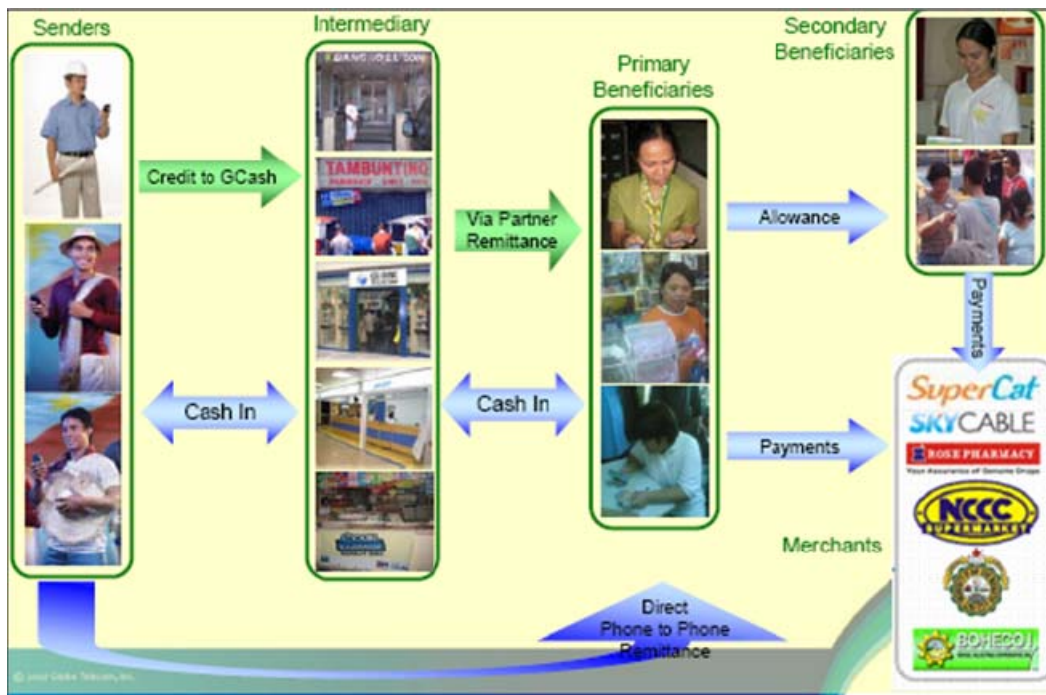
GCASH Mobile Wallet Service



Source: Globe Telecom Inc: Presentation of Rizza Maniego- Eala (September 2007).

Annex II

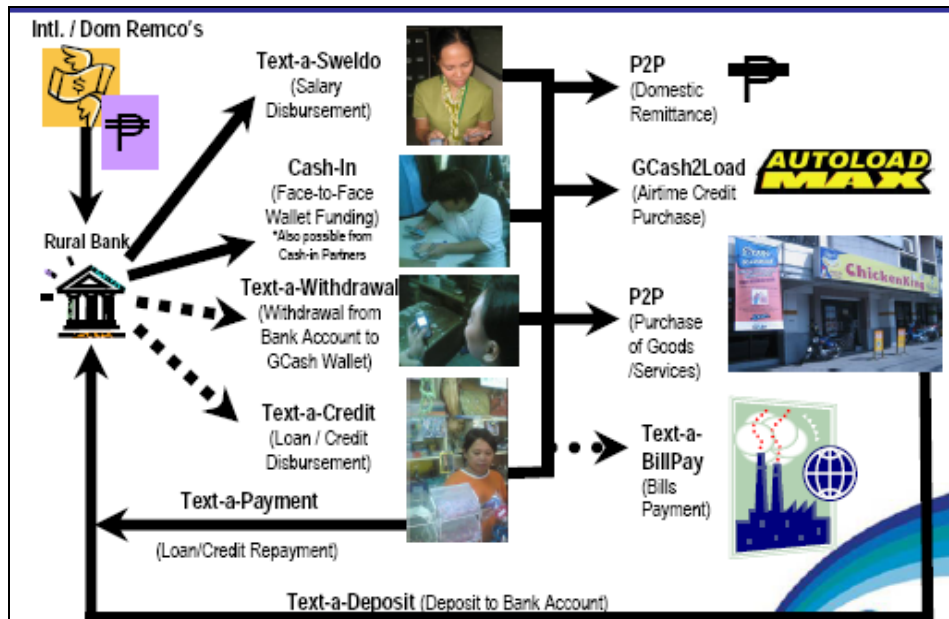
GCASH business model- A simplified ecosystem



Source: Globe Telecom Inc: Presentation of Rizza Maniego- Eala (September 2007).

Annex III

Microfinance Partnership with the Rural banks ecosystem

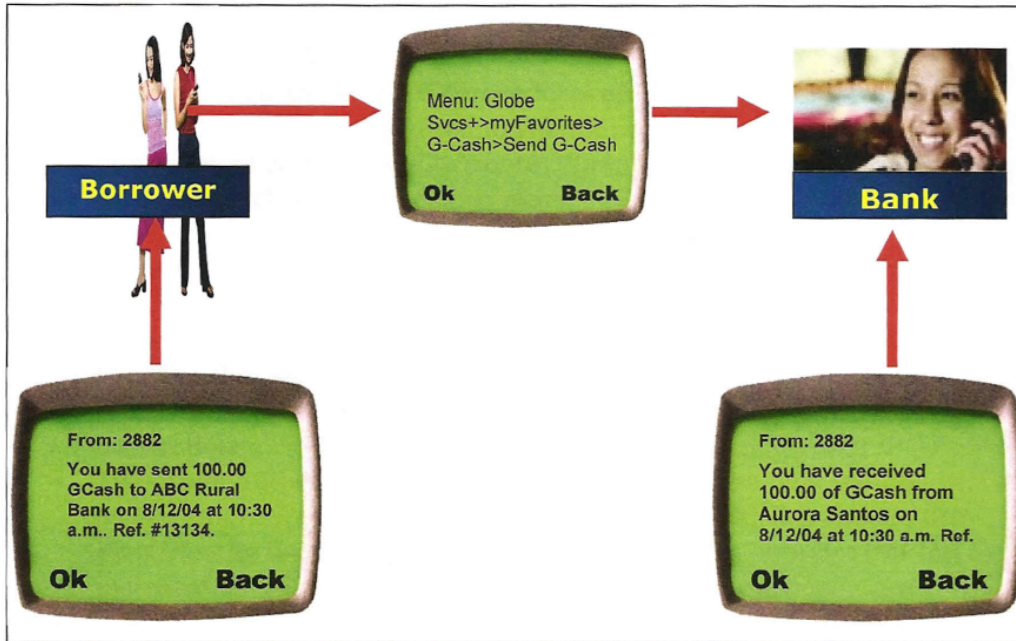


Source: Globe Telecom Inc: Presentation of Rizza Maniego- Eala (September 2007).

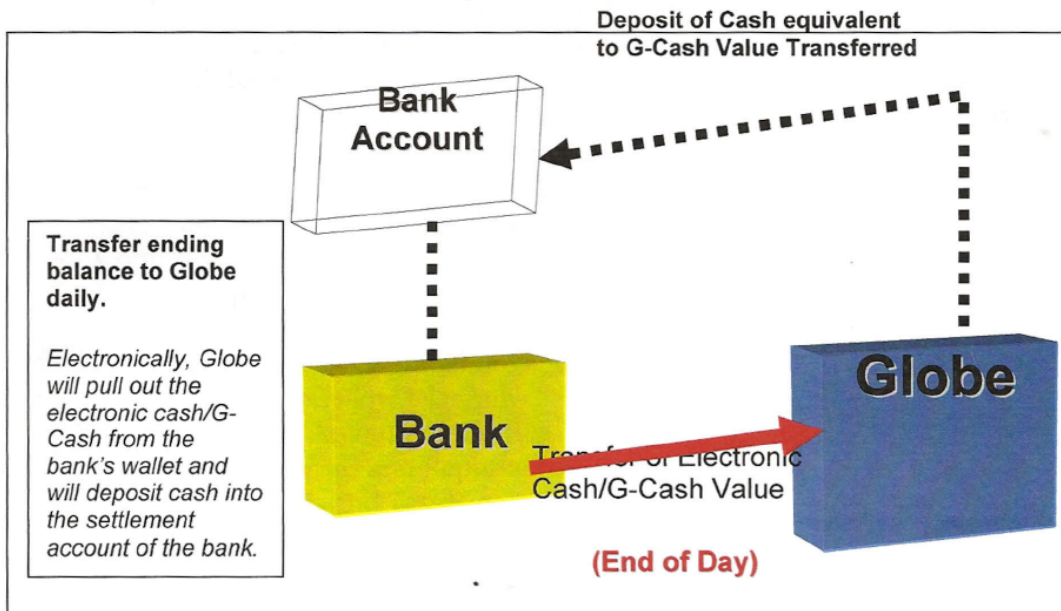
Annex IV

Text-A-Payment Transaction Flow

A. Sending of G-Cash Value through a Menu Interface



B. G-Cash to Cash Settlement through Bank Accounts



Source: MABS, 2010.

3.1.4. M-Pesa: Redefining its network strategy in order to make its business success durable

Talking to a group of academics, Safaricom's CEO Michael Joseph, was trying to explain how Safaricom's subsidiary M-Pesa had become the world's most renowned success story in mobile banking in just two and half years of operations. Indeed, who would have thought that over one third of Safaricom's customers would become regular users of a mobile phone-based electronic payments system that manages more transactions domestically than Western Union does globally? How do you explain such an innovative service to people, how do you get them to trust such an intangible electronic service and make them comfortable using the technology? How do you get the ball rolling so that more and more people find value in joining the payments network?

Safaricom, a joint venture of the Kenyan government and Vodafone, pioneered branchless banking in Kenya with its M-Pesa mobile-phone based payment service, launched in March 2007. In the 3 years since that launch, M-Pesa has achieved tremendous growth: as of January 2010, it has 14,700 agents and approximately 9 million users and has facilitated approximately KSh 300 billion in person-to-person transfers.

Joseph presented how M-Pesa's experience demonstrates how powerful a payment network that offers convenience at an affordable cost can be once a critical mass is reached. It also shows that achieving critical mass takes significant investment in marketing, branding and building up the retail channel. M-Pesa is now enjoying economies of scale as much on the demand side as on the cost side. In Joseph's view, the success factors from the Safaricom side have been:

- **Brand development.** From the beginning, Safaricom knew it had to develop customer trust in the new payment mechanism, and understood it needed to achieve critical mass quickly in order for existing customers to be the prime mechanism for drawing in new customers. This was helped by a rapidly expanding base of retail stores which carried the M-Pesa brand visibly into the heart of communities where people worked and congregated. It was also supported by heavy advertising focused on the key customer need that M-Pesa was addressing. Furthermore, it built on the trust that people already had with Safaricom.
- **Pricing.** Customer pricing was designed to encourage customers to experiment with the service: free and quick registration to the service, free deposits, and ability to send money to any mobile phone subscriber whether or not they were subscribed to the service. Safaricom's profit margin is loaded on P2P transfer fees rather than on the cash in/cash out fees, reflecting that customer willingness to pay is higher for remote payments where customers' alternatives are weakest. Stores receive new customer registration bonuses which not only incentivized growth but also provided good cash flow to stores in the early days while transaction volumes were low.
- **Store channel development.** Safaricom understood that the primary role of the mobile phone is to enable the creation of a retail outlet-based channel for cash to-digital value conversion. Senior managers strongly pushed the development of a fully managed retail channel: stores have consistent branding, receive substantial on-the-spot training, and are frequently visited and supervised.

After his presentation, Joseph realized, the audience was impressed not only by the business model they had been able to experience but also by his clarity in explaining why it was the current world's best practice in mobile financial services. However, when alone, he knew he had to face a major challenge that could jeopardize its past successes: indeed, channel restructuring was required, and it could not wait any longer.

Access to Finance in Kenya and mobile financial services as a catalyst for its uptake

As in most developing countries, access to finance is limited in Kenya, although the picture has improved significantly over the past few years. In 2007, an estimated 19 percent of the adult population had access to formal financial services through banks, with 8 percent served by microfinance institutions (MFIs) and savings and credit cooperatives (SACCOs). According to a 2009 survey,⁸⁴ an estimated 40.5 percent of adults in Kenya were “formally” served, with the term “formal” including services by banks as well as non-bank financial institutions (such as MFIs and SACCOs), Postbank, and insurance companies. According to the survey, “usage of non-bank financial institutions has more than doubled from 7.5 percent in 2006 to 17.9 percent—this can be mostly attributed to the new M-Pesa service provided by Safaricom.”

The low access figures are likely due in large part to the fact that banking is expensive in Kenya. A 2007 survey of barriers to banking, using data from 62 countries, indicates that minimum balances required by Kenyan banks are quite high. The average minimum balance in Kenya equals to 44 percent of gross domestic product (GDP) per capita, versus the 62-country average of 8 percent. Annual fees in Kenya are also high, at 2 percent of GDP per capita versus 0.38 percent.⁸⁵

In addition, Kenyan banks have limited infrastructure for reaching out to customers. As of December 2008 there were 876 bank branches and 1,424 automated teller machines (ATMs).⁸⁶ While 40.5 percent of adult Kenyans are served by formal financial institutions, an even greater percentage (47.5 percent) own a mobile phone (up from 26.9 percent in 2006). Just as the population is skewed toward urban and away from rural areas, so too is mobile phone ownership: in urban areas the percentage of mobile phone ownership rises to 72.8 percent, and to 80.4 percent in Nairobi, specifically.

The use of mobile phone services has also increased: 37.1 percent of adult Kenyans send airtime (versus 20.6 percent in 2006), and 43.1 percent send text messages (versus 29.2 percent in 2006). Mobile internet access country-wide is 4.5 percent, and in Nairobi it is 19.2 percent. ATM usage nationally is 13.4 percent, while the number of landlines decreased from 300,000 to 250,000 in the period of 1999 to 2008 (in part due to rampant theft of copper wires and alleged corporate sabotage), while mobile phone subscriptions have gone from virtually 0 to 17 million.⁸⁷

The Government of Kenya is keenly aware that the existing legal and regulatory framework (including banking, payment systems, and telecommunications) is not optimal for the development of long-term growth of branchless banking models (many, however, believe that

⁸⁴ FinAccess National Survey, June 2009. According to the survey, there are an estimated 300 deposit accounts in commercial banks per 1,000 adults in the country. For context, in high-income countries there is an average of more than 2,000 accounts per 1,000 adults.

⁸⁵ Beck et al., “Access for All: Barriers to Banking Access and Usage,” draft, World Bank, 2007.

⁸⁶ http://www.fsdkenya.org/pdf_documents/09-02-19%20Survey%20on%20bank%20charges.pdf.

⁸⁷ Jack, William and Tavneet Suri, “Mobile Money: The Economics of M-PESA,” October 2009.

Safaricom benefited from the lack of regulatory structure, arguing that regulations drafted in a vacuum, without any experience of branchless banking, would have been too strict and confining). And although M-Pesa is thriving (still in a largely unregulated environment), prior to the launch and in M-Pesa's first year, Safaricom benefited from having the government of Kenya as its majority owner, and Vodafone, a significant international mobile network operator (MNO), as its minority owner (with 40 percent).

There is little doubt that this assisted Safaricom in its initial stages and gave the Central Bank of Kenya (CBK) some comfort as well. It would have been a different situation had the first mobile phone financial service been a small start-up with unknown or financially insignificant owners. Notwithstanding Safaricom's credentials, in the run-up to the M-Pesa launch, the Ministry of Information and Communications, the Ministry of Finance (MoF), and CBK met to discuss the legal and policy implications of the M-Pesa model. The varying reactions of the different government authorities to M-Pesa illustrated the need for coordination among policy makers and regulators to ensure that i) the regulatory environment does not hamper innovation and growth, and ii) regulators are able to engage in adequate oversight to ensure the safe and healthy development of branchless banking.

Mobile Banking in Kenya: Safaricom's M-Pesa and Other MNOs as Payment Service Providers

Safaricom launched M-Pesa, the first mobile phone payment service in Kenya, in March 2007. Since then, two other MNOs have entered the market: Zain (with its product Zap) and Essar Telecom Kenya (with its product yuCash). In addition, Telecom Kenya, owner of the Orange brand in Kenya, has applied to CBK to approve its mobile money transfer service. Having three (soon likely to be four) mobile payment services makes Kenya unique among developing markets.

M-Pesa is a separate electronic wallet on a mobile phone that can be used i) to deposit and withdraw money at an M-Pesa "agent," and ii) to send money and buy prepaid airtime via SMS. "Agents" include Safaricom dealers and other retailers with distribution networks, such as petrol stations. There is no minimum account balance; the maximum account balance is KSh 50,000 (approximately US\$650). The maximum daily transaction value is KSh 70,000 (approximately US\$910).

Although M-Pesa involves accepting repayable funds from the public, Safaricom structured the product in such a way that it falls outside the definition of "banking business." Specifically, the float is held by M-Pesa Trust Company Limited in trust accounts with two commercial banks that pool client funds (a third bank is to be appointed soon). Any interest earned on this pooled account cannot benefit Safaricom (without triggering the definition of "banking business"). Safaricom has had discussions with CBK regarding what to do with the interest. Customer claims against M-Pesa Trust Company arising from negligence or intentional wrongdoing by the trust company or by Safaricom are covered by Safaricom.

M-Pesa has had extraordinary success notwithstanding, or perhaps in part due to, the absence of a governing framework. CBK did not formally approve M-Pesa, stating in a private letter (based on reports from parties involved), that M-Pesa would be subject to the National Payment Systems Bill once it became law. The letter reportedly also stated that Safaricom should establish a full audit trail for all transactions and abide by the draft AML Bill.

Safaricom held its initial public offering in June 2008. Twenty-five percent of the company is now floated on the Nairobi stock exchange, with the government maintaining a 35 percent stake, and Vodafone holding the remaining 40 percent. In January 2010, Safaricom partnered with Equity Bank. Equity Bank is Kenya's biggest lender by number of accounts, with 4.3 million in total, representing nearly half of the bank accounts in the nation.⁸⁸ Under the terms of the agreement, Safaricom customers can withdraw money from (but cannot deposit at) Equity's ATMs. An important feature of the arrangement is that any M-Pesa customer can withdraw money from Equity's ATMs regardless of whether they are a customer of Equity. Withdrawal amounts range between KSh 200 and KSh 35,000. Equity has 550 auto branches in Kenya, and the partnership will increase access for M-Pesa customers as well as help mitigate liquidity problems presented when M-Pesa agents do not have cash on-hand. The withdrawal fees will be the standard KSh 25–170 (approximately US\$0.32–US\$2.22) charged by M-Pesa.

Essar Telecom Kenya Limited launched its "yu" mobile phone service in mid-2009 and its yuCash mobile money transfer service in December 2009. Essar is implementing yuCash through its agent partnerships with Equity Bank. The infrastructure is provided by Obopay, which is active globally in mobile banking and payments technology.

Zain Kenya launched its mobile money service Zap in March 2009, and as of January 2010, it reported a customer base of approximately 400,000 and total person-to-person transaction volume of close to KSh 1 billion. Zap has a current network of 6,000 agents, though its outreach is poised to expand. In January 2010, Zain announced that it would partner with mortgage lender Housing Finance. Zap customers will be able to withdraw and deposit at Housing Finance's 10 branch locations. Housing Finance benefits from an income stream from an increasingly diversified range of business activities as well as the opportunity to cross-sell its established products.

The growth of mobile financial services in Kenya is a testament to Safaricom's vision and execution capacity, but also to the very positive regulatory stance of the Central Bank of Kenya. The CBK's bold "experiment first, regulate later" stance has been decisive. The Kenyan regulator was consultant from the inception of the idea, and has been actively involved in the development of M-Pesa since its earliest pilot stages in 2004. The CBK and Safaricom worked out a model that provided sufficient prudential comfort to the CBK. The CBK insisted that all customer funds be deposited in a regulated financial institution, and reviewed the security features of the technology platform. In turn, the CBK allowed Safaricom to operate M-Pesa as a payments system outside the provisions of the banking law.

Safaricom has had to pay a certain price for this arrangement. For instance, interest earned on deposited balances must go to a non-profit trust and appropriated by Safaricom or passed on to customers. There are also limits on transaction sizes to address anti-money laundering concerns. But, fundamentally, Safaricom was able to design the services it saw fit, without having to contort its business model to fit within a prescribed regulatory model.

The CBK has continued to support the development of M-Pesa, even in the face of pressure from banks. In late 2008, after a lobbying attack from the banking industry seeking to shut down the service, the Central Bank did an audit of the M-Pesa service at the request of the Ministry of Finance and declared it safe and in-line with the country's objectives for financial

⁸⁸ Bloomberg, "Safaricom, Equity Bank Join for Cardless Withdrawals" (Update1), January 14, 2010.

inclusion. The CBK has also enhanced its institutional oversight capacity, keeping abreast of innovation and technologically driven financial services.

So far, the Central Bank appears justified in its confidence in M-Pesa as there have been no major reports of fraud. System downtime, although frequent, has not been catastrophic. As the system has become more ubiquitous, the public have also come to rely on it increasingly, with 84% of the respondents in a recent large survey saying they would be worse off if M-Pesa did not exist.⁸⁹

Beyond the actions of Safaricom and the CBK, it is necessary to point out that there are also some country-specific factors which no doubt made Kenya a conducive environment for a mobile money proposition:

- Mobile market: Kenya has a concentrated mobile operator market, where the dominant operator has a market share of around 80%. It enjoys relatively low prepay airtime commissions: Safaricom gives 6% of sales to the channel, of which 5% typically goes to the retail outlet. For its size and level of income (\$770 per capita), Kenya has high mobile phone penetration of about 42 connections per 100 population, similar to richer countries such as Mauritius, Tunisia and Morocco.
- A large market for domestic remittances, given the large rural-urban migrations, which often results in split families. In common with many other developing countries, in Kenya there is cultural pressure to retain connections with one's ancestral village,
- Poor financial alternatives, especially for domestic remittances. Prior to M-Pesa, the most common way of sending money around the country was through the bus system. The Post Offices had an expensive, inconvenient service which was not highly valued by users.
- A base of 'microentrepreneurs', who were ready to seize new business opportunities created by the M-Pesa agency model. Whereas initially M-Pesa relied on existing Safaricom airtime outlets, today it is common to find M-Pesa stores that were established to do nothing else.

M-Pesa has been successful beyond what anyone could have imagined at its launch, but the model still has substantial room to develop further. It needs to link to a fuller range of banks, so that customers can avail themselves of the broader product set offered by regulated financial institutions. It can enable a broader range of institutional payments, such as government social welfare payment distributions and tax collections, so that customers have more incentive to leave money in their M-Pesa account. M-Pesa can introduce more finely segmented tariff and sub-agent models that work (affordably for customers, profitably for Safaricom) at much smaller transaction sizes. There are some recurrent problems of agent cash liquidity and system down-time which still need to be resolved. Finally, its regulatory treatment as a payments vehicle needs to be formalized so that it can become regulated in the most appropriate way.

⁸⁹ See Suri, T. and B. Jack, "The performance and Impact of M-PESA: Preliminary Evidence from a Household Survey", June 2008.

M-Pesa's brand development: the first key to success

In the beginning, Safaricom was confronted with the challenge of developing trust in the new payment mechanism. This was all the more difficult because Safaricom was introducing not only a new product, but an entire product category to a market that had little experience with formal financial services. Safaricom also had to quickly achieve a critical mass of customers to defeat adverse network and chicken-and-egg effects. The internal launch target for M-Pesa was about 1 million customers within one year, equal to 17% of Safaricom's customer base of about 6 million customers at that time.

While Safaricom may not have had a fully articulated marketing plan, it nonetheless took a series of decisions which helped it to overcome these daunting challenges as it first introduced M-Pesa to the market. Possibly most importantly, management recognized the potential impact of M-Pesa and committed the company to heavy investments in marketing before the proposition could be proven. The gamble paid off.

Safaricom managed to develop a strong service brand, which some market research has shown is even stronger than Safaricom's corporate brand; itself already a powerful brand in Kenya with a dominant share of the mobile phone market. M-Pesa amply surpassed first-year forecasts, quickly turning the network effects in their favor as new customers begat more customers and turned M-Pesa into lucrative business for more stores.

In order to maximize the chance of acceptability in an unprepared market, Safaricom went for a full-blown national launch, and was deliberate in its messaging and marketing mix. Safaricom was able to leverage public goodwill that existed with the corporate brand, and treated M-Pesa stores as valuable brand outposts. All this was supported by a service that was designed to be simple and easy-to-use. Below, are the most important aspects of this strategy.

A single, simple message: M-Pesa's brand development and awareness-raising were driven by clear and specific messaging. Safaricom had a clear understanding of the key customer need they were addressing. As Safaricom market-tested the mobile money proposition, they shifted the core proposition from repayment of microloans to helping people make person-to-person remittance payments to their friends and family.

Unlike many other mobile money deployments, Safaricom has not set out to replace cash in day-to-day life; they simply offered a new solution for those situations – remote payments – where cash is not very effective and there are few convenient alternatives. Moreover, in the early days they articulated the value proposition around a simple notion expressed with just three words: "send money home." This single compelling use, which was well adapted to the common Kenyan phenomenon of split families, was the unique focus of all its marketing for the first year, and remains the main (though no longer only) marketing message three years later. The same TV ad was used for the first 2 years.

While the M-Pesa platform was able to provide a wider range of services, Safaricom chose not to clutter their message with multiple claims on the attention (and anxieties) of a public not familiar with the service. Although people have proved creative in the use of M-Pesa, sending money home continues to be one of the most important uses – the number of households receiving money has increased from 17% to 52% since M-Pesa was introduced.

National launch at scale: After small pilots involving less than 500 customers, M-Pesa launched nationwide, making the value proposition equal for all subscribers and increasing the

likelihood that the service could reach a critical mass in a short time frame. At launch Safaricom had 750 stores, and had made sure to cover all of Kenya's 69 district headquarters.

This was a high risk strategy that not all operators or regulators are willing to countenance, since the brand of the parent company was at stake across its entire user base. It was also a massive logistical challenge, that led to a great deal of customer and store confusion and, in the first months after launch, several days' delays to reach customer service hotlines. User and store errors were frequent since everyone was new to it. But it achieved the purpose of establishing national visibility and top-of-mind awareness among large segments of the population. Logistical problems subsided after a few months, leaving strong brand recognition.

An appropriate marketing mix. Initial marketing featured and targeted the wealthier city dweller with the need to "send money home." This choice of the richer urban dweller as the initial customer created an aspirational image for M-Pesa and avoided the impression that it was a low-value product aimed at the poor. Over time the marketing moved from young, up-market urban dwellers with desk jobs to more ordinary Kenyans from lower-paid professions.

While M-Pesa's launch was associated with a significant advertising campaign in traditional media such as TV and radio, there was also massive outreach through road-shows travelling around the country signing people up, explaining the product and demonstrating how to use it. This is a common marketing approach in Kenya for products that reach lower-end markets because the traditional media are not viewed by the poor as relevant or trustworthy, and Safaricom made best use of this channel.

Over time, as people become more familiar with the product and how to use it, it was no longer necessary to do this kind of hands-on outreach. TV and radio were largely replaced by the omnipresent M-Pesa branding of its outlets, supported with a few large billboards. Newer ads feature a general emotional appeal with a wider range of services indicated.

Consistent customer experience: M-Pesa stores carried the new M-Pesa brand into local communities. The stores are immediately recognizable as they are painted Safaricom green with a prominent M-Pesa logo. Today, with 14,000 outlets, the M-Pesa brand has become omnipresent.

Once a customer enters any store, the experience is remarkably consistent. Safaricom achieved this by investing in store training and actively supervising the store network. Stores are chosen for their good knowledge of English and Kiswahili (Swahili). Store clerks know how to use and explain the service to customers. In the early days, they were in the front line of dealing with customers' concerns and intimidation with having to deal with a new technology and a new range of financial services. As we will see later, maintaining the quality of the customer experience as the network has grown, while at the same time containing costs, has been a major challenge for Safaricom, causing it to reevaluate its approach.

The need for strong branding and consistent customer experience at the store led Safaricom to require operator exclusivity of M-Pesa agents (i.e., they could not sell or promote the products of competing mobile operators). Safaricom had not required this of airtime resellers, but they thought it to be more important for the M-Pesa business.

Service branding building on a strong corporate image: The heavy investment in branding was built on the already well-known and Safaricom brand, using the same color scheme. As the mobile operator with a dominant market share (over 80% at M-Pesa's launch and scarcely less

today, despite the entrance of two new operators), Safaricom was already a broadly respected company that had introduced products favored by the public including prepaid airtime accounts and per-second billing. It was perceived by ordinary Kenyans to be a home-grown, private-sector success story, outside of the establishment and associated tribal rivalries; they took pride in it and trusted it. Safaricom's image was bolstered by its charity work in Kenya, which involved small projects in every village that were directly tailored to local concerns. In addition to these brand assets with the public, Safaricom had a tried and tested marketing team that had a good understanding of its customer base, and a relationship with a marketing company (Top Image) that it could trust to deliver training and branding at the store level.

An easy, intuitive service design: The customer interface was simple, working on even the most basic phones. Its menu structure mimicked that of airtime transfers, a recently introduced product, which served as a 'stepping stone' for introduce early adopters to the concept of electronic value transfer: M-Pesa uses an application resident on the customer's SIM card, so M-Pesa customers needed to get a new SIM card, which Safaricom provided for free (including a SIM card transfer service that transferred stored address books from the old SIM to the new). While this was costly for Safaricom, it introduced a face-to-face opportunity for Safaricom to explain the service to new customers.

The service sought to offer reassurance to customers in several ways. Customers receive instant confirmation of their transaction, which is important in helping customers to learn by experience to trust the system. From an early stage, Safaricom invested in customer service to help people deal with and resolve the problems they faced using the system, including the things they most feared: lost SMSs, lost PINs and lost phones. Although customer service was overwhelmed in the early months, customers quickly learned that M-Pesa transfers were secure. In fact, whenever there were issues with the service customers tended to blame M-Pesa stores rather than Safaricom.

M-Pesa Customer Tariff and Store Commission Structure

Below we summarize the customer pricing and agent commission structure by type of transaction.⁹⁰ Each agent HO is free to distribute their commissions down their retail channel as they see fit, but most pass on 70% of the commissions they receive from Safaricom to the retail outlets. In addition, there is a 21% tax levied on cash transactions at retail stores – 16% as value added tax and 5% withholding against income tax.

Transactions against cash: Deposits are free to customers, but each deposit transaction costs Safaricom 13.3c (US\$) in total commissions, of which 7.4c goes to the retail outlet after tax. Withdrawals cost customers 33.3c. Safaricom pays 20c to the channel, of which 11.1c goes to the retail outlet. Thus, a round-trip savings transaction (one deposit + one withdrawal) costs the customer 33.3c (0c on deposit + 33.3c on the withdrawal) which is in fact equal to what the channel gets (13.3c on the deposit + 20c on the withdrawal). So, assuming equal volumes of deposits and withdrawals, Safaricom doesn't make any money on cash transactions: Safaricom merely "advances" commissions to the channel when customers deposit and recoups it when customers withdraw (this works on aggregate, but not store by store). The average agent channel commission per cash transactions is 16.7c (average of 13.3c and 20c), of which the retail outlet gets 9.2c (average of 7.4c and 11.1c) after tax.

⁹⁰ The exchange rate used is KSh75 per US\$.

Withdrawals from M-Pesa at ATMs are slightly more expensive than at a retail outlet (40c versus 33.3c). This is in fact a recent price change: it used to be the same as regular withdrawals at a store. But Peso Point, the provider of the ATM network, renegotiated its deal with Safaricom (at the same time as it raised its fees to banks) to get more commission as it claimed to be losing money on such transactions.

Electronic transfers of value

Person-to-person (P2P) transfers cost a flat rate of 40c. This is where Safaricom makes the bulk of its revenue. Thus, customers pay more than double for a purely electronic transaction than they pay for the average cash transaction (17c) – despite the cost to provide being lower for purely electronic transactions than those involving cash.

This reflects a notion of optimal pricing that is less based on cost and more on customer willingness-to-pay: enabling remote payments is the biggest customer ‘pain point’ which M-Pesa aims to address. For remote payments, M-Pesa is cheaper than the other available mechanisms: money transfer by the bus companies, Kenya Post’s Postapay or Western Union.

But this pricing limits the suitability of using M-Pesa for face-to-face transactions, for which the alternative of cash is much less costly. This limits the frequency of use of M-Pesa. In a survey of users in late 2008, only 8% reported using M-Pesa daily or weekly.⁹¹ M-Pesa customers can send money to non-M-Pesa customers, including any person with a GSM mobile phone in Kenya, whether they are subscribers of Safaricom or of any of the other three competing networks (Zain, Orange and yu).

The ability to send money to any mobile phone subscriber was particularly important at the launch of the service when only few customers were registered, and proved to be an effective customer-acquisition mechanism. This increased the speed at which technology laggards registered with the service. Under this service, money is debited from the sender’s account, and the recipient gets a code by SMS which they can use to claim the monetary value at any M-Pesa store. Thus, it’s an account-to-phone service, with the receiver’s experience being similar to how Western Union works today. The pricing on this service is interesting: it’s a lot more expensive for a customer to send to a non-customer than to a customer (US\$1 versus 40c), but at the other end cashing out is free for a non-customer which is not the case for a customer. This may seem odd: the customer is penalized while the non-customer gets a free service. The logic, though, is to put the pain on the sender, who has the money and the understanding of how M-Pesa works – and hence the clout to insist that the receiver register as an M-Pesa user.

Bill payment was launched in 2009 and is analogous to a P2P transfer, except that customers send money to the M-Pesa account of the recipient institution. Customers must enter the biller code (a number that uniquely identifies the biller) on the M-Pesa phone menu, and also have the option of entering an account number (which is necessary if the biller cannot associate the customer’s phone number with their bill account number). M-Pesa charges the same amount for transfers of money for bill payment as for P2P (i.e., KSh 30 per transfer). However, in the case

⁹¹ FSDT(2009b). Jack and Suri, 2009, p. 15, further report, on the basis of the same survey, that households send and receive remittances on average once every three to four months. Monthly remittances sent are smaller, amounting to approximately 4.5% of monthly expenditure, while those received are about 5.6%. About a third of remittances are sent and received via M-Pesa, and they tend to be smaller than the average remittance, amounting to about 1.5% of monthly household expenditure on average.

of paying bills, the cost of the transfer can be shared between the biller and the customer in the proportion defined by each biller. For instance for electricity bill payments, the utility and the customer split the charge (i.e., customers can pay KSh 15 per bill paid). Safaricom does not offer bulk discounts to billers at present, partly because it is still not seeing sufficiently large transaction volumes.

Customers can buy airtime directly from their mobile wallets, at zero cost but without a discount either. There is some channel conflict here: when a retail outlet sells a prepaid card, the channel gets 5% on the value of the card sold; if the customer buys the airtime through M-Pesa, there is no direct channel commission (though at some point there may be a cash-in fee of 13.3c). M-Pesa is aware of this cannibalization for the channel, and does not actively promote the purchase of airtime through M-Pesa like many other mobile money schemes, for which airtime purchases is their primary driver of transaction volume. The fear of cannibalization actually drives main airtime resellers to sign-up as M-Pesa outlets, but Safaricom has been careful not to undermine their subsistence.

M-Pesa can also be used to send international remittances from the United Kingdom to Kenya. Safaricom has partnered with Western Union and two Kenyan emigrant companies (one that shows Kenyan TV channels on UK cable) to provide a cash-in network in the United Kingdom. The cost is high, GBP 4 to send GBP 100, and offers only a small discount from standard Western Union pricing. As a result, traffic on M-Pesa's new international remittance channel with the United Kingdom is low.

Non-monetary transactions: Users can register for M-Pesa for free, and initially customers requiring a SIM card upgrade got a new one for free. As all new SIMs are now M-Pesa-enabled, Safaricom now charges customers 27c (KSh 20) for a SIM card replacement.

Despite the free customer registration, the channel gets \$1.07 per customer registered. This constituted a powerful customer acquisition incentive for stores during the early days of M-Pesa when there were few customers (and hence relatively little transaction commission to be had). Registration commissions were initially paid entirely upfront but were subsequently split (50% given when the customer signed up and the other 50% after the customer made the first deposit) in order to avoid the incomplete registrations that occurred during early stages.

Balance inquiry costs the customer 1.3c. Initially this was free, but fairly early on Safaricom decided to impose this modest fee because they found that customers were checking their balance unreasonably frequently. To reduce the cost to customers of checking their balances, Safaricom started stating available balances in the SMS receipt following any transaction.

M-Pesa's Channel management restructuring: The remaining challenge

For M-Pesa to be broadly available to the bulk of the population, Safaricom had to design a channel structure that could support thousands of M-Pesa stores spread across a broad geography to offer CICO services. Safaricom built a channel that was based on the key requirements of profitability (providing incentives for third-party retail players to get involved), scalability (achieving rapid growth) and control (over the brand, customer experience and geographic distribution of stores).

To support the customer-facing activities of M-Pesa stores, the channel needed to support a range of activities, among the most important of which were:

- Identification, screening, contracting and training of new stores.

- Supervision of existing stores.
- Distribution of commissions across stores.
- Liquidity management, enabling stores to periodically rebalance their holdings of cash and M-Pesa balances.

Safaricom did not wish to directly manage thousands of retail stores. Hence, it sought to engage partners to help manage the individual stores, thereby reducing the number of direct contacts Safaricom had to deal with. While Safaricom wanted a scalable structure, it also wanted to maintain control over the customer experience. Safaricom opted for two parallel mechanisms for channel management.

First, Safaricom created two-tier structure with individual stores (sub-agents, in Safaricom's parlance) reporting to master agents (referred to by Safaricom as Agent Head Offices [HO]). Agent HOs maintain all contact with Safaricom, and perform two key functions: i) liquidity management (buying and selling M-Pesa balance from Safaricom and making it available to individual stores under their responsibility), and ii) distributing agent commissions (collecting the commission from Safaricom based on the overall performance of the stores under them and remunerating each store). Individual stores may be directly owned by an agent HO or may be working for one under contract. In the latter case, Safaricom does not prescribe the terms of agent HO-store contracts, so they are free to work out their own liquidity management arrangements and split of agent commissions. Stores are free to switch between agent HOs.

However, Safaricom did not rely on the broad base of agent HOs to perform all channel management functions. In addition, Safaricom engaged a local firm, Top Image, to conduct the evaluation and training of new stores, as well as to perform the periodic on-site supervision of all stores. Top Image was charged with visiting stores monthly and scoring them against a range of criteria. Top Image acted as direct sub-contractor to Safaricom, and not through the agent HOs.

Thus, we see that Safaricom delegated the more routine, desk-bound, non-customer-facing store-support activities to a larger pool of agent HOs. At the same time, Safaricom retained direct, centralized control (through its contract with Top Image) over the key elements of the customer experience, including vetting and training new agents and ensuring that stores met guidelines and offered reasonable service. Thus, it created some degree of competition among HOs, but not on aspects that were crucial to maintaining quality and consistency of the customer experience.

As the M-Pesa store base grew this structure became too heavy and onerous for Safaricom. At the same time, lack of liquidity continued being a limitation for many stores. This prompted Safaricom to introduce changes into their channel management roles and structure, and to introduce a new liquidity management mechanism as discussed below:

Recent changes in channel management roles and structure

Safaricom is presently undertaking a major overhaul of its M-Pesa store channel. This is to address two key concerns with the current system:

- **The channel is flat.** 60% of M-Pesa stores belong to agent HQs with less than a dozen stores. Thus, Safaricom has to deal with too many agent HOs to manage their channel, which is getting to be a challenge as the number of stores shoots past 14,800.

- **Safaricom absorbs too much cost:** Safaricom pays Top Image for on-site services directly, in addition to paying channel commissions through agent HOs. There is a costly duplication of channel players.

The first point is being addressed by creating a new class of players called agent aggregators sitting at the top of the agent channel. There will be no territoriality assigned to the aggregators: they can have sub-agents wherever they like. They have now appointed 10 (of which 8 are based in Nairobi), with the aim that each will manage 2k-4k agents. Safaricom have selected the aggregators on two key criteria:

- i) Liquidity, as aggregators are required to have a minimum deposit in their M-Pesa account with Safaricom.
- ii) Performance, based on the number of customers they are serving and the volume of transactions they are performing per day.

Safaricom expects a consolidation of the existing 14,700 agents under these newly appointed aggregators within 6-8 months.⁹² Safaricom has stipulated that only aggregators will be allowed to open up new agents, so anyone wanting to grow the number of agents they manage will have to “sign up” with an aggregator. We can expect that in few months Safaricom will tell independent agent HOs and subagents that they have to sign up under one of the approved aggregators if they want to continue in business. The aggregators have not yet been given any set of targets, but we can expect that they will be targeted on two things: i) minimum number of subagents they must have in order to retain aggregator status, and ii) minimum number of new sub-agents they have to open up in rural, under-served areas.

The aggregators are being introduced fundamentally to take on the role now played Top Image. Safaricom wants to make the aggregator fully and singly responsible for giving support to and supervising the agents. Under the new structure, the aggregators will select, train and supervise agents, in addition to performing the “traditional” channel roles of managing agent liquidity and distributing commissions. Sub-agents who are not assigned to an aggregator will, at least for a while, continue receiving support from a Safaricom-appointed company. This will be Top Image in the western half of the country, and another company will be brought in for the eastern half.

Along with this, Safaricom intends to increase the portion of agent commissions that go to the sub-agent. Today the agent HO decides how to split agent commissions between itself and the sub-agent. The split is typically 30% to the agent HO and 70% to the sub-agent, though some operate under a 20%/80% split. Safaricom wants the split to be 20%/80%, thus passing more of the commission down to the sub-agent level. This would help offset the reduced volumes of transactions sub-agents do as competition increases.

We expect these changes to help Safaricom reduce its cost, as it no longer needs to absorb the Top Image contract cost and their functions are pushed down to aggregators. Larger agent HOs who become aggregators will play expanded roles and responsibilities (absorbing Top Image’s on-site, more logistically complex functions) with reduced commissions (20%, down from 30%). Compensating that, they have a clear path to volume, since all existing sub-agents will need to sign up with one of the 10 aggregators. Thus, they should make up for the negatives with much

⁹² Michael Joseph, CEO of Safaricom quoted in Okkudah, 2009.

higher volumes of transactions. Retail stores will experience tighter management by a single party, their aggregator.

The new channel management structure represents a shift from one that emphasized control and consistency of the customer experience to one that emphasizes channel scalability and efficiency. This shift represents a natural shift in strategic priorities as the M-Pesa system takes root. As the number of agents surges, avoiding management bottlenecks and reducing unit costs become more important. At the same time, competition between agents can be increasingly relied upon to ensure proper service at the store level. Once customers have a certain expectation of service, they rather than Safaricom can take the lead in disciplining agents. And as awareness of the service grows, store-level branding becomes less relevant and Safaricom will become increasingly focused on driving more nuanced, targeted marketing messages through broad-based marketing channels.

Store liquidity management options

M-Pesa stores provide the critical nexus between digital or electronic money (the balances held in individual M-Pesa accounts) and physical cash. It is their job to take customers' cash and to provide cash to them, on demand, effectively buying and selling M-Pesa float for cash. Their key task is therefore to maintain enough liquidity in terms of both cash and M-Pesa balance to be able to meet customer CICO requests. If they take too many customer cash deposits, stores will find themselves running out of M-Pesa e-float with which to fund customers' accounts; if they do too many withdrawals they will accumulate plenty of e-float but will run out of cash. Thus, they frequently have to rebalance their holdings of cash versus e-float. This is what we refer to as liquidity management.

Stores can in principle manage their liquidity in one of the four main ways. Two are non-bank based and rely on agent HO's physical deployment:

- Having the store clerk come to the agent HO's head office and bringing or taking out cash.
- Having the agent HO send cash runners to deliver/take out cash from stores' premises.

The third liquidity management mechanism is through the respective bank accounts of the agent HO and the store. There are two scenarios:

- If the store has excess cash and wants to buy M-Pesa e-float from the agent HO with it, the store would deposit the cash into the account of the agent HO. To do this the store clerk would need to find a branch of the agent HO's bank. Once the agent HO confirms reception of the funds into its account, the HO transfers M-Pesa e-float to the store's M-Pesa account.
- If the store wants to sell e-float to get cash, the agent HO deposits (or transfers) money into the store's account of the branch of the store's bank and receives the M-Pesa e-float from the agent HO; the store can then withdraw the cash at the branch or ATM of his own bank.

These three liquidity management options place the agent HO in a central role. In the early days of M-Pesa, Safaricom's intent was indeed for agent HOs to aggregate a number of stores in multiple, diverse locations so that they would be as self-sufficient as possible for liquidity

management purposes, thereby minimizing the number of e-float transactions they would need to do with Safaricom itself. Accordingly, Safaricom requires agent HOs to have at least 3 outlets offering M-Pesa in at least 2 different provinces (although this has reportedly not always been enforced).

On the store side Safaricom requires a minimum M-Pesa e-float per store of KSh 100,000 (US\$1300). The expectation is that the agent HO would 'recycle' e-float between locations experiencing net cash withdrawals (which accumulate positive e-float) and locations with net cash deposits (which require e-float to meet demand).

The final liquidity management mechanism was introduced in early 2009, when Safaricom created the figure of the *superagent* (not to be confused with the agent HO or aggregator). Safaricom has since signed superagent agreements with six banks: KCB, Cooperative, Equity, Family, PostBank and Gulf. In this option the agent HO does not get directly involved in liquidity management.

Note that the superagent just helps the store manage their liquidity, but it is not involved in payment of agent commissions or other agent management functions – that is still done through the store's agent HO (or by the aggregator under the new model). Thus, the superagent model is not a full channel management function, just a subcontracting of the liquidity management function to a specialized player.

Under the superagency arrangement, stores have an account with the superagent bank with a branch near them. For a store, rebalancing their cash entails two steps: i) depositing and withdrawing cash against their bank account at the branch or ATM of the bank, and ii) buying and selling e-float in real time against their bank account.

In return for this service, the superagent gets paid KSh 100 (US\$1.33) for transactions of KSh 35k-100k (US\$470-1300) and 0.1% of the transacted amount for transactions of KSh 100k-400k. This fee is paid by the agent HO through Safaricom, i.e., the banks don't bill the agents directly. This fee is considered high by agent HOs when compared with the third option in which agents incur no cost for cash deposits and a KSh 50 withdrawal fee at ATMs (half the minimum superagent fees). On the other hand, superagents argue this gives them meager remuneration for doing the 'heavy lifting' on cash logistics (transporting cash, counting and checking the validity of bills, use of bank tellers, etc.).

One drawback of the bank-based superagent mechanism for the store is that it can only use it during banking business hours; this presents a problem for stores in the evenings and especially on Saturday afternoons and Sundays.

The introduction of the superagency model represents the continued leveraging by M-Pesa of the banking system as a source of liquidity. First it signed up banks as agents, so that M-Pesa customers could cash in and cash out at bank branches, where (unlike at stores) they would be assured of enough liquidity. Then M-Pesa partnered with Paynet to allow customer withdrawals from M-Pesa accounts at any of its 110 PesaPoint branded ATMs, adding convenience and extending opening hours for customers. With their appointment as superagents, banks now further bolster M-Pesa liquidity by making it easier for retail stores to rebalance their cash and e-float.

The introduction of the superagency model can also be interpreted as a 'virtualization' of M-Pesa's bank account across a larger number of banks. The totality of customers' M-Pesa

balances are held in two banks. Agent HOs (on whom the liquidity management task had been centralized) buy and sell M-Pesa e-float by paying into/receiving from M-Pesa's accounts at these banks. With the appointment of other banks as superagents, stores can now buy and sell M-Pesa e-float directly from them, and these banks can then settle With M-Pesa's two custodian banks.

The e-float-cash nexus will remain the key constraint to the further development of M-Pesa since it is the least scalable part of the system. When an agent HQ and a store decide on a liquidity management mechanism that allows the store to exchange cash for M-Pesa float, they would likely take into account the distance between their respective locations, and the distance of each of these to a bank branch. Geography is likely to be the main driver of the cost and convenience of the various options.

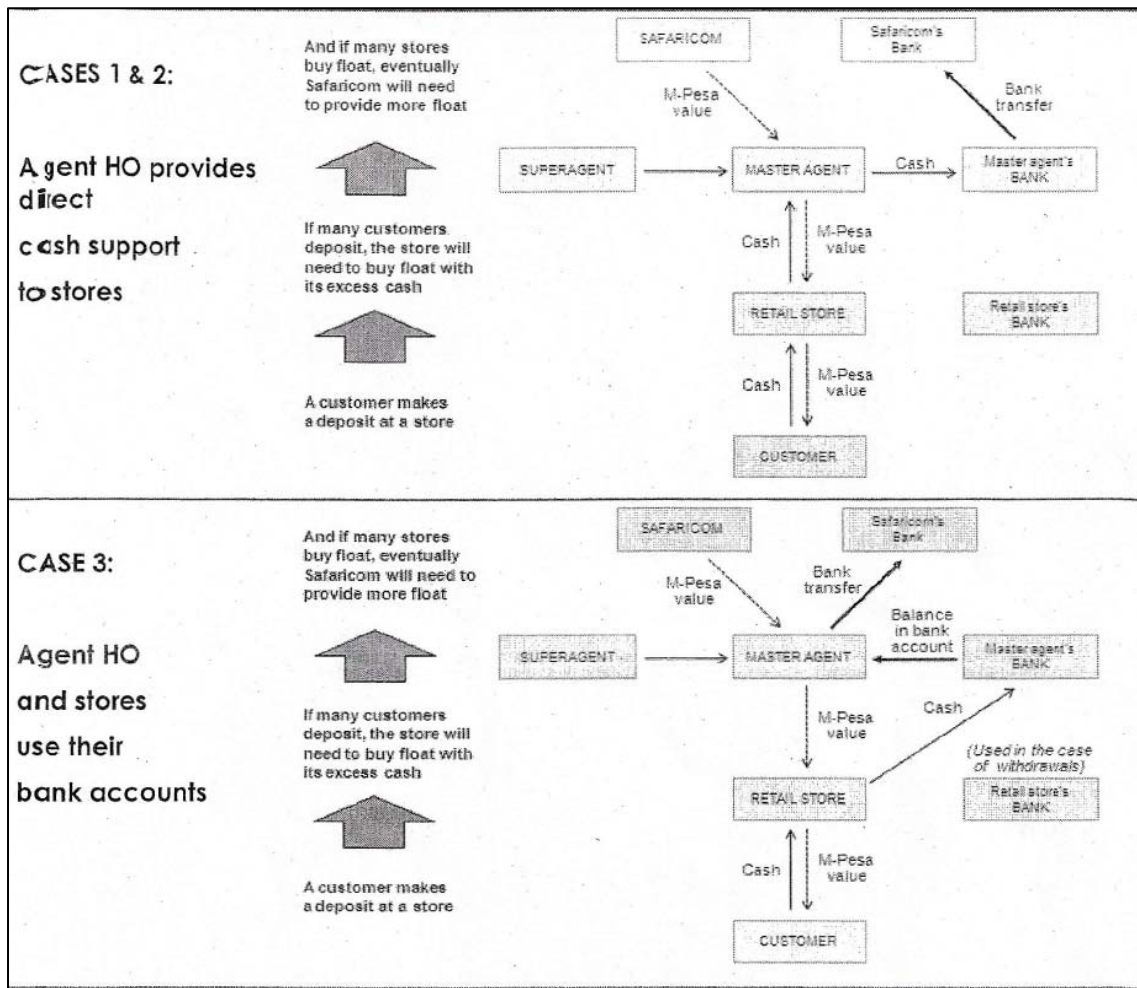
Safaricom's next challenge

Safaricom Chief Executive Officer Michael Joseph was about to meet his most senior executives in order to discuss the implementation of the channel restructuring required to ensure M-Pesa's sustainability. When walking to the conference room he was going through the many risks of the agent restructuring:

1. How would the successful M-Pesa brand be affected?
2. Would they need to better adapt the customer tariff and store commission structure?
3. Would the liquidity arrangements need to be better tuned?

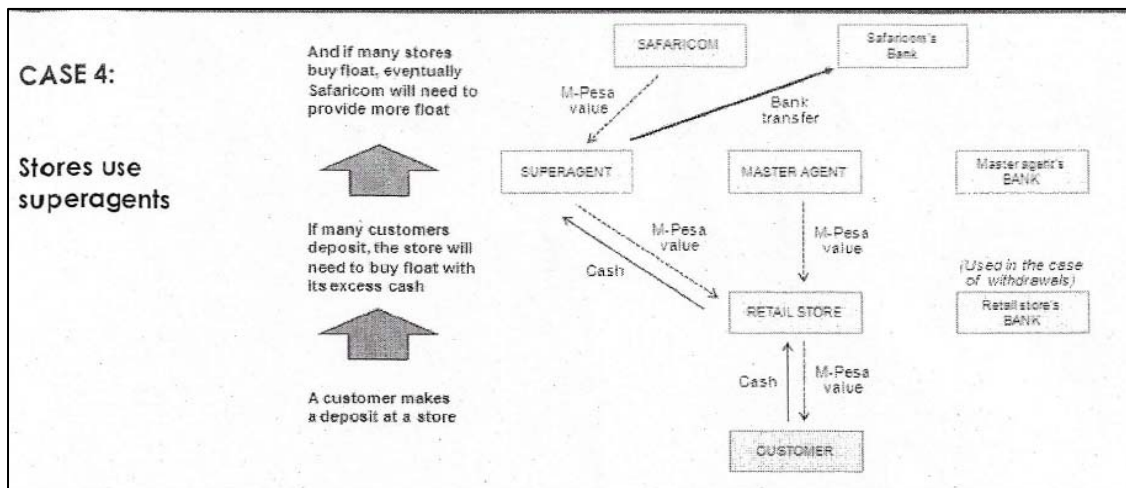
Annex I

Schematic representation of M-Pesa liquidity management options



Annex II

Super-agents liquidity scheme



3.2. Emerging Mobile Banking Business Models in Developed Nations

1. Introduction

In chapter 3.1 we presented the classification of emerging m-banking models based on the definition provided by the Mobey Forum and David Porteous (2006). According to this classification we identified four models: Bank-centric models; Collaborative models; Independent service providers, and Operator centric models. As discussed in this chapter, the “bank-centric model” implies only developing new channels for existing banking products (Porteous calls this model “additive”). The three remaining business models presented can however transform the way financial services are provided. Porteous call them “transformational models,” since these business models, based on prepaid electronic payments systems and cellular technology, address the supply inefficiencies that explain the lack of access to finance in developing nations.

Transformational business models have not developed extensively in developed nations. NTT DoCoMo in Japan has been the only successful transformational model of mobile financial services among the developed countries analyzed. In this chapter we will review the emerging mobile banking business models in Europe, Japan and the United States. In Europe we will review the unsuccessful cases of Paybox AG (Germany) and Mobipay SA (Spain). Paybox is an independent service provider that was about to become the industry standard in 2002, but the falling apart of its strategic alliances led the company to its final unsuccessful fate. Mobipay followed a collaborative model between financial institutions, mobile telecom operators and payment processors. However, demand did not pick up and its operations have remained very limited in scale. In Japan we will review the success story of NTT DoCoMo, which followed an operator-centric model. In the United States we will review the still-emerging mobile banking industry based on alliances between Stored Value Card (SVC) issuers and mobile operators, and the mobile banking initiative of the e-payments industry leader PayPal as an independent service provider.

In Europe, transformational models of mobile banking have not appeared for different reasons. First, the lack of demand due to the slower development of e-commerce and a much higher level of banking access, especially among immigrants. Second, the unclear regulatory framework shown in chapter 2.2 creates regulatory uncertainty for mobile operators that want to establish transformational models (such as Smart in the Philippines), and a competitive disadvantage position for independent service providers (such as WIZZIT in South Africa). As a result, we find that mobile banking models are only “additive,” implemented by existing banks that use mobile phones as an additional channel in the context of multichannel strategies. Besides, the slow development of ELMIs (non-bank issuers of e-Money) and the prepaid industry in Europe -mostly due to the lack of demand but also to some regulatory problems regarding electronic vouchers (gift cards, meal cards), transport systems, and travelers’ cards-gives potentially interested mobile operators no technology platform to operate with other than banks. As a result, and given the current legal loophole regarding mobile operators, they prefer to operate within a close network (allowing customers buy ring tones and digital content) instead of developing alternative business models, such as GCASH in the Philippines.

In the United States transformational models of mobile banking (or mobile financial services being the first and most basic mobile payments), use normally SVC platforms to operate. The

recent and important development of the SVC industry could be the catalyst for a service that has potential demand (the unbanked population in the United States, especially among immigrants, is very important), and where no major regulatory obstacles exist. However, the most important obstacle to the development of mobile banking in the United States is the structure of the telecommunications industry in the country. We will see in this chapter how standardization and the fractured wireless market impede the take-up of Mobile Banking in the United States.

Japan is the only developed country with Korea where mobile banking has been a real business success. Japan's mobile banking market is unique in several aspects, due to the dominance of NTT DoCoMo. DoCoMo's successful mobile banking strategy is based on building the supply side of the market by offering attractive commercial terms to banks, card companies, transport companies, merchants and consumers by subsidizing their handsets. Of particular relevance in the success story of NTT DoCoMo is the development with Sony of the FeliCa technology of near-field communications.

2. Europe

Mobile banking in Europe has lagged behind the development seen in some other countries previously analyzed such as the Philippines, South Africa and Japan. Despite the high penetration of mobile phones in most European countries (exceeding 80% at the end of 2006), much higher by comparison than the North American market, the provision of financial services using mobile phones and cellular communications has not developed as expected.

Two cases represent well the failed mobile banking business initiatives launched in Europe: Paybox.net AG (Germany) and Mobipay S.A. (Spain). Paybox.net AG, shows the case of an independent service provider (as defined in chapter 3.1), backed originally by Deutsche Bank and Debitel, that was not able to succeed as a network- and bank-independent mobile payment solution. Mobipay, on the other hand, shows how a collaborative model in which all major financial institutions, telecom operators and payments processors participate also failed to provide mobile financial services appealing to the potential customer base of mobile telephone holders.

2.1. Paybox

In July 1999, Mathias Entenmann founded paybox.net AG, the first universal provider of mass-marketable mobile phone payments. This solution was based on an open platform independent from individual banks or mobile carriers. Paybox was to be compatible with any phone, any network operator and any bank account for making payments via mobile phone.

Deutsche Bank took a 50% stake in the company in February 2000. Deutsche Bank's investment in Paybox provided the company not only its know-how in monetary transactions, but also a staid image in order not be considered just another small startup company. Managers of Deutsche Bank considered this investment a strategic move to support its "e-Global" activities in e-commerce.

A few months later, in September 2000, Debitel, one of Europe's leading telecommunications providers, took a 4.8% stake in Paybox while company board members, employees and business partners held the remaining shares of 45.2%. As a result of this partnership with Debitel,

Paybox expected more than 1-3 million new users within 18 months. Over that period, Debitel was committed to taking a stake in the German operating company of around 40%.

Paybox was officially launched in May 2000 with the support of leading partners. Deutsche Bank provided the payment processing platform, Lufthansa Systems provided the central computer and data security systems, Oracle provided the software, Compaq and Hewlett-Packard the hardware, and Intershop the e-Commerce Systems.

A fear of possible competition that would hamper its goal of becoming the industry standard led Paybox (encouraged by Deutsche Bank) to expedite its expansion to other European markets. Paybox commenced operations in Spain, Austria and Sweden during fall and winter 2000/2001. By the end of the year 2000 the company had over 150 employees. With the funding of Deutsche Bank, Paybox turned into a holding company with affiliates in the different countries and was making plans for further expansions in 2001.

During its first year of operation, Paybox was able to acquire more than 260,000 customers and about 5,000 merchants, mainly internet shops. A considerable number of the participating e-Shops already generated 10% of their total sales with Paybox, and, according to the University of Kalsruhe, the company had a 4% share among all other payment options for online shopping in Germany. These figures exceeded the expectations of the company, although they were still far from achieving the critical mass required (1 million customers, according to the FT, March 21, 2003). Additional partnerships were also being formed with e-Bay, web.de (the largest web portal in Germany) and Norisbank.

On August 13, 2001, Paybox announced a strategic partnership with Mobilkom Austria, the country's leading mobile network with an overall market share of 48%, and 2.8 million subscribers. Paybox was becoming the industry standard in Europe thanks to its international expansion. Mobilkom Austria took a 49% share of paybox.net Austria AG and, as part of the deal, was given the option to invest in the parent company. Furthermore, they planned to support paybox.net Austria AG through an extensive sales and marketing program.

Two years after its launch, Paybox remained the unchallenged m-payment market leader in Europe. Even renowned market participants such as T-Mobile and Vodafone, which were working on a joint m-payment solution with Telefónica and Orange, had still not progressed beyond announcements. Another study by the University of Kalsruhe reported doubling of active Paybox users among German Internet users from 3.4% in January 2001 to 6.8% in February 2002. The company itself announced that it had gained more than 850,000 users and that had acquired 10,000 virtual, mobile and fixed retailers throughout the European markets in its first 24 months of operation.

Paybox entered the market aggressively with a business model based on a €12 fee for the consumer and a 3% charge for the merchant. This insufficient income, coupled with the extensive investment plans undertaken by the company, worsened its financial situation. Paybox.net AG had to raise capital to build up its own brand.

Deutsche Bank's decision to withdraw from its capital base changed the fate of Paybox, since Paybox could no longer directly offer its retail payment services. Besides, due to its willingness to become the only network- and bank-independent mobile payment system, it refused to become a proprietary solution (used for closed looped payment systems). This independence was designed to avoid being excluded from the networks in some countries. However, Paybox's success in Austria proved that cooperation between a strong national partner and an accepted

mobile payment method could lead to profitable mCommerce. For any mobile payment system to be successful it would require strategic alliances with infrastructure partners from both the telecom and the banking sector. Therefore, the falling apart of Paybox's strategic alliances lead the company to its final fate.

By 2003, most of the international subsidiaries of Paybox.net AG had been restructured or closed. Today, Paybox AG has refocused its strategy and offers only advisory services for the development of mobile payment processors for enterprises. Paybox partners today with leading telecom operators and payment processors such as Vodafone and O2 in Germany, Mobilkom and ONE in Austria, Swisscom, Vodafone Egypt, Maxis Malaysia, MasterCard International, ICSL Nigeria, and Lari Exchange in the UAE. Paybox continues offering its technology and know-how, but does not offer retail payments services directly as it unsuccessfully tried to do in the past.

2.2. Mobipay S.A.

Mobipay S.A. was funded in May 2001 by all major Spanish financial institutions (except "la Caixa"), all three Spanish card payment processors and all three mobile operators active in the country. It is therefore a unique case of collaboration among all financial institutions, payment processors and mobile operators in order to develop an industry standard for mobile payments.

The main goal of Mobipay was to facilitate the use of card payments, by utilizing the mobile phone as an alternative channel for transactions where cards were not being used. Transactions such as micropayments were too costly to process through traditional card systems, and as a result most small payments were conducted in cash. E-commerce transactions were the second kind of payments that Mobipay was targeting. Due to identity thefts and other fraud concerns, the use of cards for e-commerce was limited, hampering the development of e-commerce. Finally, Mobipay was also aiming to increase the use of cards among the youth. Traditionally, individuals in Spain started using cards at approximately 25 years of age. By allowing them to use card systems through mobile phones, they could start using cards at an earlier age.

The cooperative model implemented in Spain in order to form Mobipay benefited the three types of members the system had: financial institutions, mobile operators and payment processors. Banks could keep and increase their relationship and their "wallet share" with their customers by offering them more payment transactions; second, banks would benefit from creating a new channel of communication with their customers, by using it in order to promote their services and therefore cross-selling financial services.

Mobile operators could offer payment services for third-party products without having to ask for an ELMI license, and benefiting from the know-how and infrastructure of financial institutions and payment processors. Second, mobile operators were hoping to increase average revenue per user (ARPU), reduce customer churn and access new customer segments. Spanish card payment processors (Sermepa, Euro6000 and 4B) were highly motivated promoters of Mobipay. They were expecting an increase in the number of card transactions, by developing a new channel where cards could be used.

Mobipay was the result of merging two pre-existing platforms developed by BBVA and Telefónica (the leading operator) on the one side, and Santander and Airtel (second operator currently owned by Vodafone) on the other. In February 2000, BBVA and Telefónica in the

context of their “framework agreement”⁹³ for collaboration, created Movilpago. Movilpago was a closed platform that allowed only BBVA issued cards (or Movilpago cards) to be used with Telefónica mobile phones in merchants acquired by BBVA. SCH and Airtel, however, developed an open platform called “Pagomóvil” open to any financial institution. In May 2001, the competition regulator (*Tribunal de Defensa de la Competencia*) suggested the merger of both platforms under an open platform scheme that would allow any financial institution and any mobile operator to be a member under the same cost scheme.

The main goal of the Mobipay initiative was to expand the use of bank cards among the youth and to be used for transactions where cards were not being utilized, such as micropayments and e-commerce/m-commerce. In order to achieve this goal, Mobipay implemented the following strategy based on: First, building a cooperative model between financial institutions, telecom operators, and payment processors. Second, using the high penetration of mobile phones in Spain as the catalyst for using non-active bank cards. Third, offering a universal solution that could cover all types of payments (micro-macro, virtual-non remote). Fourth, using existing hardware such as mobile phones and POS for new transactions without any required additional investment. Fifth, offering a simple, safe and friendly user experience.

The cooperative model, based on a unique platform shared by all members was a decision promoted by the competition regulator. The ultimate goal of the regulator was to allow every market participant equal access to the technology standards developed by the industry. Standardization was also promoted in order to achieve economies of scale and network externalities, and avoid past failures of proprietary non interoperable solutions.⁹⁴

- How did the system work?

Mobipay leveraged the existing technology of POS and mobile phones, using special communication protocols to conduct payment transactions. Every financial institution was responsible for developing its own applications, and therefore creating their value proposition for the customer. The Mobipay system allowed for payment transactions, service (change of PIN, wallet language configuration), and information (transaction information and balance). Payment transactions could be conducted following two different processes: First, for transactions conducted at a physical POS; Second, for transactions conducted in a virtual POS (e-commerce) or when the merchant had no POS.

When payments transactions were conducted using a physical POS, the customer could use three identification numbers.⁹⁵ The most commonly used was the telephone number, but the system also allowed users to use an alias (a number specially created that allowed customers to be identified without giving their telephone number), or a bar code provided by Mobipay and glued to the mobile phone that would identify the consumer with merchants where the POS had a near-field communication reader.

A second type of payment transaction was also available, for e-commerce or when the merchant had no POS terminal. For these transactions to take place, the merchant had to provide the consumer with a sequence of numbers and signs that the user had to dial on the

⁹³ BBVA and Telefónica signed a framework agreement of collaboration, that included partnering in a number of projects and also a cross-shareholder agreement.

⁹⁴ Three e-wallet solutions had been developed by the three payment processors achieving only 0.03% of total non-cash payments.

⁹⁵ Instead of using the PIN number of the card in a regular card-based POS transaction.

phone in order to identify the transaction. Once the consumer pressed the dial button, the mobile phone opened up a screen that presented the transaction requested and required inserting the PIN number in order to authorize it. This authorization was processed using USSD technology that allowed real-time transactions with maximum security (the PIN number was not stored on the phone as in the case of SMS-based transactions).

Registering for the system required activating Mobipay through the financial institution where the customer had the card (or cards) he wanted to use as a payment instrument. The customer could activate up to 9 cards associated with Mobipay. The system allowed therefore using the phone as a mobile wallet, where the customer could choose the card to pay with for every specific transaction. The financial institution activating the Mobipay function would then send a five digit PIN number to the customer to use for authorizing transactions.

Mobipay was not intended as a for-profit initiative. Although it planned to cover operational costs, its main goal was to encourage card payments. As a result, costs for the user were low and were decided by the financial institutions issuing the cards based on their commercial strategy. No institution charged for activating or maintaining the Mobipay service. Communication costs, charged by the mobile operators were €0.07 for payment, service and information transactions,⁹⁶ except for top-up transactions that were free of charge. Mobipay charged €0.024 per transaction (€0.018 to the issuer, and €0.006 to the merchant). Depending on the commercial strategy of the financial institution, costs could either be charged to the consumer or absorbed as part of the operational costs of running the card business.

Security was a major issue for Mobipay, as for any payment initiative. Authentication was provided by the mobile phone, while authorization was provided by the PIN number. The use of the USSD system prevented the risks of terminal identity theft, since real-time transactions ensured direct communication between the user and the system. Besides, no personal communication was being stored on the mobile phone nor was financial information transmitted over the air (the user's card number remained in the user's system). The card payment processors' guarantee systems assured merchants of getting paid. Besides, transactions could not be rejected after being authorized from the user's PIN number, since inserting the 5-digit PIN code was considered a digital signature.

Mobipay expected to achieve 4 million active customers by 2004, but these numbers were never reached. Mobipay's business model was based on two elements that made it potentially very appealing. First, Spain had one of the highest penetrations of mobile phones in the world. Second, Spain had more than 40 million bank cards issued with one of the highest per capita densities in the world. However, most of these cards were debit cards and were only used for ATM withdrawals and not for POS transactions. Activating these payment instruments for merchant transactions was key in order to ensure the sustainability of the card business in Spain.

The failure of Mobipay to leverage the large customer base of mobile phone customers in Spain in order to encourage bank cards use is mainly due to a highly banked population's lack of interest in this payment product. Indeed, the two expected market segments that Mobipay was targeting have not responded with interest to Mobipay's value proposition. First, the youth have seen how mobile operators allow them to buy ringtones and games directly using their prepaid mobile telecom accounts, without opening a Mobipay account. Although Mobipay responded

⁹⁶ These communications were called Mobipay sessions (Sesiones Mobipay) and could not take longer than 15 seconds.

allowing micropayments using the prepaid telecom accounts of its three mobile operator members, this service does not add any value to the one already offered directly by mobile telecom operators.

Second, internet shoppers have grown confident using cards as payment methods for e-commerce purchases. The development of specific services by the major card brands such as Verified by VISA and MasterCard Secure, coupled with the issuance of prepaid cards specifically tailored for internet shoppers, have helped some customers feel safer when buying online. However, most internet shoppers are simply using their debit and credit cards to buy online.

3. The United States

In the United States, 17.5 million people with mobile phones are estimated not to have access to bank accounts (CFSI, 2007). Mobile banking services in the United States are specifically targeted at this group, taking advantage of the synergies with the existing value propositions being offered by existing products such as prepaid cards.

The success of Mobile Banking in the United States will depend on whether the value proposition is right in terms of price, distribution method, usability, security, product design, and communication and marketing. However, the high adoption rates of new mobile technologies by the demographic groups most likely to be underbanked fit well for the eventual acceptance of MFS, if appropriate value propositions are offered.

Mobile banking technologies in developing countries, such as the Philippines where the industry has developed extensively, are based on SMS technology. In Japan, the developed country with the highest penetration of mobile banking, the industry has developed using Near-Field Communication (NFC) technology – see the NTT DoCoMo analysis. In the United States, NFC technology, consisting of “standards-based short-range wireless connectivity technology” that permits communication between enabled devices, is driving the development of the industry. For its use in mobile phones, NFC chips may be attached to headset covers or incorporated directly into phone hardware.

NFC technology is already being used in tags, fobs and cards such as MasterCard’s successful PayPass product, but it also enables additional mobile functionality. As a result, the merchant locations that currently accept contactless payments (including a number of high-profile fast-food and retail chains) will in theory be able to receive payment from NFC-enabled phones. Like existing contactless payments products, NFC will likely leverage the card-payment networks already in place by linking to users’ association-branded cards.

A significant development for the use of MasterCard’s successful PayPass product in mobile banking comes from Giesecke & Devrient (G&D) and MasterCard International,⁹⁷ which announced the development of a secure over-the-air (OTA) personalization scheme. PayPass can be enabled directly with the customer’s phone, making a one-time request to their bank to register for the service. Data is sent over the carrier network and then automatically loaded and activated by PayPass payment application in the mobile phone while personalizing the phone’s built-in ‘secure area’ with the customer’s card payment account details. This technology permits

⁹⁷ MasterCard International and GSMA have launched a global initiative to let international migrants transfer money home through their cell phones.

card issuers to securely load accounts to customer's mobile phones without accessing the phone's SIM card or creating vulnerabilities for the phone's NFC chip. During the first quarter of 2007, Citibank, MasterCard, and Cingular began testing the technology in the United States, in the New York City area, using NFC-enabled Nokia headsets.

Unlike the contactless payment cards currently available, phones with built-in NFC devices can be linked to "mobile wallets" that allow access to multiple accounts or cards. Limited by definition to local (non-remote) transactions, NFC technology can be also be used to top-up prepaid mobile accounts at merchant load stations, or to facilitate in-person transfers between two users with NFC-enabled headsets. Supporters of NFC maintain that the technology will prove more user-friendly than SMS-based payments at point of sale and even faster than traditional cards or cash. Broader adoption, however, will require certification of the technology, standardization across mobile carriers and financial institutions, and, most notably, substantial investments by retailers in POS infrastructure.

An alternative to SMS and NFC technology is to provide access to online banking and payment platforms through users' mobile phone internet browsers. However, this solution is creating little enthusiasm in the industry since online content must be resized to fit small-screen cell phones, most likely through the creation of dedicated websites. Besides, the relatively slow speed of many users' mobile-based web access may also be a significant obstacle. The final barrier is cost, since mobile users connecting to the internet generally pay substantial fees.

3.1. Mobile Banking in the United States

Mobile financial services have not had the same degree of technological innovation and market penetration in the United States as in other international markets such as Japan or the Philippines. The most important obstacle to the development of mobile banking in the United States is the structure of the country's telecommunications industry: slow standardization, fractured wireless market, and mobile phone penetration lower than in most developed countries, and even lower than in some developing nations. High penetration in some developing countries can be traced to the lack of legacy land-line infrastructure – as a result, users have moved directly into wireless telephony. This has not happened in the United States thanks to the high saturation of land lines.

The continued lack of dependable, universal wireless coverage, even in metropolitan areas, renders MFS alternatives like online banking more reliable and user-friendly, and because the United States' mobile market is only now approaching saturation, carriers have remained more focused on customer acquisition than on increasing functionality, prioritizing "new subscribers over new services." Finally, some experts suggest that United States consumers may be less willing to engage in new technology than consumers in other markets as Korea and Japan.

From a regulatory perspective, federal and state banking regulations may limit the financial services that telecommunications companies can provide. As a result, carriers may be obliged to partner with banks or third-party providers, slowing the development of MFS solutions led by telecoms. However, the recent and important development of the prepaid industry could be the catalyst for a service that has potential demand since the unbanked population in the United States, especially among Hispanic immigrants, is very significant. Telecommunication companies could partner with SVC specialized companies in serving the unbanked and therefore increase accessibility and functionality to existing prepaid cards. Regulatory issues

should not be a concern, since SVCs are already regulated as Money Service Businesses (MSB), and telecoms could be viewed as agents currently not regulated under the MSB framework.

Beyond the specific challenges that will be encountered by individual players, a number of general questions face the emerging mobile banking industry in the United States. First, security and how providers can balance convenience and security to ensure that both users and providers are fully protected against fraud, data theft and other threats. Second, reliability and how the mobile financial services infrastructure can prove dependable enough to attract and retain customers. Third, partnership models and what kinds of revenue-sharing arrangements key players will arrive at without proving prohibitively expensive for end users. Under these agreements, the key element of discussion will be to determine who “owns” the end-user relationship. Fourth, achieving necessary volume and network effect issues, by convincing not only consumers but also merchants and distribution networks to build a sustainable business case. Fifth, to what degree legacy systems will be an obstacle for the development of new MFS solutions.

3.2. Emerging domestic players

Established banks such as Citigroup (Citimobile), JP Morgan Chase, HSBC and Bank of America have developed “additive mobile banking business models” (Porteous, 2006) where transactional services are offered on traditional banking products by mobile telephone. The most advanced multichannel offering using mobile phones, however, has been the mobile banking offering from Banco Popular. The bank, which has branches in six USA states and throughout the Caribbean, allows users to consult their account balances by text message and sign up to receive notifications for various types of account activity. The free service is currently available to users of Centennial Puerto Rico, Cingular, Movistar and Verizon.

Among domestic mobile carriers, Cingular, currently being rebranded as AT&T, is leading the market as it announced its mobile banking alliance with enabler Firethorn Holdings, a mobile transaction streamlining company. However, its mobile banking strategy has been limited to providing an additional transaction channel to established banks, and therefore allowing them to implement additive mobile banking business models. In March 2007, AT&T signed a partnership with Wachovia Corp. and other banks that will allow subscribers of its Cingular brand to check account balances, transfer funds, and receive or pay bills. The Firethorn technology connects to Firethorn’s servers, which then communicate with the user’s bank system.

Among manufacturers, Motorola has led the way in developing its M-Wallet solution, and application which can be downloaded directly to user’s phones through their mobile internet connections. M-Wallet includes such features as bill payment (linked to online bill-payment service providers), POS payment and money transfers, and would be funded by credit, debit, or gift cards stored in the phone. According to media reports, the solution also permits users to make payments from prepaid wireless accounts, or have payments charged to their monthly phone bills. Motorola must now broker deals with wireless carriers and issuers to bring the service to end users. Motorola is currently running a pilot with Morgan Stanley that will allow 1,000 Discover Card clients in the Chicago and Salt Lake City areas to use their Motorola phones as a means of payment.

However, “transformational models” are only being developed where mobile virtual network operators (MVNOs) partner with SVC providers. As resellers of wireless services, MVNOs

frequently target niche markets such as youth and ethnic minorities that mobile operators would otherwise have difficulty accessing. Consequently, MVNOs may prove particularly suited for banking the unbanked among their customer bases. They may also provide major mobile operators with the opportunity to experiment indirectly with mobile banking without the risk of public failure.

AMP'd Mobile, a youth-oriented MVNO with a focus on multimedia content, has announced a partnership with mobile payments company Obopay. Virgin Mobile, another youth-focused carrier, will launch a prepaid Visa debit "Stash" card with prepaid provider NetSpend. The product's mobile-based features include P2P transfers and text-based account alerts. Movida, an MVNO targeted at the Hispanic market, has plans to offer a mobile-linked prepaid debit card that will facilitate top-ups and provide an opportunity to develop credit for the un-banked population. Movida's m-payments solution will also integrate the prepaid debit card and phone to provide wireless remittance services, in addition to wireless transaction and balance alerts.

Finally, in the past two years, a number of mobile-oriented financial services companies have entered the market or announced their intention to do so. Most are start-ups, some of which have received substantial venture funding. A notable exception is PayPal, which has leveraged its successful online payment platform with more than 100 million users to begin providing mobile payment services (service launched in April 2006). PayPal uses SMS or IVR technology in order to offer P2P transfers and merchant payments at participating retailers using their PayPal accounts. Currently the SMS services work on Alltel, Sprint, T-Mobile and Verizon. Text-message payments might be attractive to offline merchants too small to afford credit card merchant accounts, and to online merchants having signed for PayPal merchant services.

PayPal Mobile leverages on the API platform developed by PayPal Merchant Services, the unit of PayPal in charge of developing business outside of the e-Bay payment world. PayPal was founded in 1998 and launched originally as a "person to person" electronic payments network. However, it soon became clear that PayPal's most important revenue-generating activity was servicing "online auction marketplaces." It was attractive to auction sellers, most of whom were individuals or small businesses that were unable to accept credit card payments directly from consumers. Many sellers could not qualify for a credit card "merchant account" because they lacked a commercial credit history; for others, the fixed fees associated with a merchant account would be onerous, given their small scale. PayPal offered auction sellers a quicker and more convenient payment method. With PayPal, sellers did not need to wait to receive checks or money orders by surface mail before shipping goods. The service also appealed to auction buyers because they could fund PayPal accounts using credit cards or bank account balances, without divulging credit card numbers to unknown sellers. Sharing personal financial information was a serious concern that led many consumers to avoid buying online.

In July 2002, online auction leader eBay – conceding the defeat of its Billpoint service created to compete with PayPal – acquired PayPal for \$1.4 billion in stock, and shut down Billpoint. PayPal's first-mover advantage and viral growth caused not only Billpoint but also many other early online payment rivals to fall by the wayside. As a result, eBay payments became the "killer" application that PayPal needed in order to achieve enough scale and become a serious competitor in the "off-eBay" world.

At a February 2005 analyst conference, PayPal management described the off-eBay opportunity, citing Forrester research that estimated 2004 United States e-commerce spending to be \$144 billion, with eBay garnering a 12% share. The research further segmented the United

States off-eBay market into three groups based on annual online sales: sole proprietors (less than \$250,000), small-to-medium businesses (\$250,000 to \$5 million), and large merchants (more than \$5 million). Merchant Services would target small-to-medium and large online merchants, which together made up \$116 billion in off-eBay United States sales. In these markets, credit cards were the dominant payment solution.

The PayPal Merchant services strategy was based on the development of the Website Payments Pro Merchant Services launched in June 2005. PayPal Merchant services were targeted at small and midsize online merchants that demanded more control over their transactions. The Pro product suite featured two new functions: Express Checkout and Direct Payment API. Express Checkout allowed shoppers with PayPal accounts to pay for items and supply shipping information with just three clicks at merchants' websites. Direct Payment API let sellers accept credit cards from buyers who did not have PayPal accounts, then process those payments through the PayPal system and deposit them into merchants' PayPal accounts. With Direct Payment API, PayPal offered a one-stop alternative to traditional credit card acquirers, merchant processors and gateways.

Recent investments in the online world are solidifying PayPal Merchant services strategy as an off-eBay payment system. In October 2005, PayPal announced its acquisition of VeriSign's payment gateway business for \$370 million, boosting its transaction volume and acquiring a large base of online merchants to which Merchant Services could cross-sell its products, including Website Payments Pro. In July 2005, eBay purchased a leading United States comparison-shopping site, Shopping.com, for \$620 million. In September 2005, eBay acquired Skype, the world's leading voice-over-Internet-protocol (VoIP) provider, for \$2.6 billion.

3.3. Mobile banking and the underbanked: market potential in the United States among Hispanics

Mobile banking has a potential market segment in the United States, already targeted by SVC issuers. The customers that are not being currently served by the traditional banking sector could be interested in this value proposition if it fit their demands. Among the unbanked, Hispanics are potentially the largest segment of the population that mobile banking emergent initiatives are currently targeting. Banking access and mobile phone usage of Hispanics in the United States is very similar to banking access and mobile phone usage in some developing countries such as South Africa, where mobile banking has made important inroads.

As many as 40 million American households are underbanked.⁹⁸ At the same time, a 2004 Mintel report shows that 65% of Americans own mobile phones.⁹⁹ Because of the strong relationship that still exists between mobile phone ownership and income, it does not automatically follow that 65% of the underbanked are mobile phone users. A more cautious estimate rests on Mintel's finding that 44% of Americans with a household income of under \$25,000 have cell phones. Assuming, quite conservatively, that only 40% of underbanked households include at least one mobile phone user, the existing market for underbanked MFS would exceed 17.5 million people.

There are approximately 3.7 million Hispanics over the age of 18 without bank accounts but with mobile phones.¹⁰⁰ This estimated population of purely "unbanked" excludes the millions of

⁹⁸ CFSI, 2007.

⁹⁹ Mintel, 2005.

¹⁰⁰ Nowlin, S., "Reaching out for Hispanics", San Antonio News-Express, July 12, 2006, IE.

Hispanics that have some kind of banking relationship but continue to use alternative financial services, such as check cashers and money-transfer operators. They, too, could derive significant value from mobile banking offerings targeted to the underbanked. As a result, Hispanics likely constitute at least one-third of the potential mobile banking underbanked market.

Although there is no definitive data on cell phone usage among the underbanked, mobile technology has become increasingly popular among the demographic groups most likely to be financially underserved by the traditional banking system. The market research firm Mintel¹⁰¹ shows that, in 2004, 57% of Hispanics owned mobile phones. Besides, according to the Pew Internet and American Life Project, young and non-white users are significantly more likely to claim that “they can’t live without their cell phones.” The Pew study also identifies a subpopulation of “cell only” users who do not have land lines (largely for financial reasons) and who are “disproportionately male, under age 30, non-white, unmarried and from households ... earning less than \$30,000”.¹⁰² A study by the Tomás Rivera Policy Institute notes that, of all ethnic groups in the United States, Hispanics are the most likely to give up land lines in favor of exclusive mobile phone use.¹⁰³ They also tend to have the highest average wireless bills, at approximately \$71 per month, an indication of the intensity of their mobile use.¹⁰⁴

“Cell-only” users tend to use their mobile phones for a greater range of services, including text messaging and internet applications – two key platforms for mobile banking. Indeed, 61% of cell-only users employ text-messaging, compared to 31% of cell users with land lines; cell-only users are also far more likely to use their mobile phones to access websites and send email.¹⁰⁵ Minority groups and younger users appear to share these preferences.

3.4. Partnerships between SVC issuers and mobile operators will shape mobile banking in the United States

In many ways, preloaded mobile payment solutions closely resemble prepaid cards. Indeed, they may provide similar benefits to users: better security than cash, reduced risk of overdraft or penalty fees, convenient loading of value, and, in the case of the most advanced cards, opportunities to save, transfer funds among users, and build credit history (see chapter 2.1). Indeed, the line between prepaid cards and m-payments could prove fuzzy, as many prepaid companies begin to contact customers through text messaging, while at the same time many m-payment platforms, such as Obopay, seek to overcome the hurdle of POS accessibility through the issuance of branded prepaid cards.

One of the most natural applications of mobile banking technology, then, may be to build on existing prepaid infrastructure, leveraging mobile technology to provide greater accessibility and functionality to prepaid products currently marketed to the underbanked. These partnerships would allow mobile banking value propositions to take advantage of the

¹⁰¹ Mintel Reports “Mobile Phones-US-May 2005: The consumer,” based on research conducted by Mintel/Simmons NCS in Fall 2004

¹⁰² Rainie, L. et al., 2006.

¹⁰³ Macias, E. et al. , “Trends and impact of broadband in the Latino Community,” Tomás Rivera Policy Institute, 2005, 8.

¹⁰⁴ Mintel, 2005

¹⁰⁵ Rainie, L. et al., 2006.

experience of SVC issuers in the Hispanic market designing products specifically tailored for this segment of the population.

In addition, alliances between SVC issuers and specialized mobile virtual network operators would allow both to benefit from income and operational synergies. Besides, by partnering with SVC issuers, mobile banking value propositions would be able to include services such as merchant pay, bill pay, remittances, person-to-person (P2P), prepaid top-up and tie-ins, short-term credit and even savings.

The most important challenge that would need to be overcome in order to create competitive value propositions based on the mobile banking business model identified is to build extensive load networks. For underbanked users of mobile financial services, the ability to easily load money to their phones may prove as important as the ability to spend and transfer funds. Customers without bank accounts or credit cards – the most common source of funds for existing mobile banking platforms – will require alternative load mechanisms.

Prepaid load networks such as check-cashing outlets, direct payroll deposit, designated kiosks or “reverse ATMs” that accept cash and point-of-sale loads through partnerships with retailers could be leveraged in order to build extensive load networks. Some mobile banking providers have already started thinking along these lines. Though the service is not currently offered, Obopay envisions a strategic partnership with a payroll card company that would enable customers to receive their salaries directly deposited to their mobile accounts. Retailers like convenience stores and discount chains, already beginning to offer transactional financial services, could provide a particularly valuable link to mobile banking services for this segment, not only as payment recipients but also as load and unload locations. Because the underbanked already use these kinds of retailers extensively, they represent a promising point of customer service for mobile banking.

4. Japan

NTT DoCoMo was established in 1992 when it was spun-off by Nippon Telegraph and Telephone (NTT). NTT DoCoMo is Japan’s largest mobile operator with 49 million customers and 56% market share. However, its leading position was mostly the result of its incumbent position as the former state monopoly in 2G. KDDI, another Japanese operator, was becoming perceived as a more innovative player and at the end of 2004 was leading in 2.5/3G mobile communication services. NTT DoCoMo’s successful i-mode “always on” strategy for accessing the internet was not enough to overcome the many challenges the company faced at the end of 2004.

Its failed international expansion, market saturation in Japan, new telecom regulatory challenges regarding the portability of telephone numbers, and its too conservative image in 3G services for the Japanese market forced the company to respond with a new and dramatic strategy. In order to find new revenue sources and to bolster subscriber retention, NTT DoCoMo came up with the “Lifestyle infrastructure” strategy, where a mobile phone is something that is always with the user: “the phone like a TV remote control for all the transactions in our daily lives – paying a taxi fare, boarding a plane pulling up personal files on a conference room PC

when you enter”.¹⁰⁶ Mobile banking became, as a result, an integral part of its “Lifestyle infrastructure” strategy, and financial services part of its core business.

4.1. e-Money, prepaid instruments and smart cards in Japan

e-Money, stored value cards and their issuers are governed by the Law Concerning Regulation of Prepaid Certificates (usually referred to as the Prepaid Card Law), enacted in December 1989.¹⁰⁷ Issuers of prepaid instruments are required to file or register with the Prime Minister, and the government is empowered to carry out inspections and to request information and documents from those institutions. Where the outstanding unused value exceeds JPY 10 million, the issuer must deposit funds equivalent to half or more of the unused value with the legal affairs bureaus of the Ministry of Justice.

According to a recently published KPMG report,¹⁰⁸ there are currently six issuers of e-Money using NFC smart cards¹⁰⁹ (m-wallets). Edy is the biggest among them, and it is operated by Bitwallet, whose main shareholders are Sony and NTT DoCoMo. In 2007 there were 23 million subscribers with FeliCa-enabled mobile phones and Edy, and 49,000 stores accepting this method of payment, between them generating 15 million transactions per month.

Edy was created in January 2001 by 11 Japanese companies, including Sony, DoCoMo, and several major banks and equipment vendors, that jointly established the operating company called bitWallet to manage Edy (an abbreviation of “Euro, dollar, yen”). Edy grew slowly at first; only 550,000 cards were issued in its first year of operation. Growth picked up in 2003 after a variety of Edy cards and Edy-linked services became available.

Edy cards were originally sold at am/pm convenience stores for ¥300 (about US\$3). Edy could be replenished using Edy chargers (or, in some cases, cash register reader/writers) in retail stores. The Edy wallet solution was also used in order to run cobranded fidelity programs: Some credit cards, loyalty-program cards, and employee ID cards had Edy built in. For example, All Nippon Airways (ANA) issued Edy-enabled frequent-flyer cards through which mileage points could be exchanged for Edy credits.

Edy was seen by NTT DoCoMo as one the main applications embedded in its FeliCa chip that could generate profits. With the mwallet solution provided by the FeliCa based e-Money (Edy), users did not need to carry cash, sign receipts or wait for change or online authorization. Quick transactions were appealing for both consumers and merchants, especially in locations where speed was important, such as convenience stores, taxis, supermarkets and news kiosks. Contactless IC chips could also store customer data, which enabled merchants to offer loyalty points programs.

Merchants assumed that accepting e-Money could boost their market share at the expense of rivals who did not do so. Merchants had no liability for fraud with e-Money, whereas with credit cards they were responsible for using the credit card company’s systems to prevent unauthorized transactions. However, e-Money was not likely to be used for larger transactions,

¹⁰⁶ Interview with CEO Masao Nakamura, HBR, 2006.

¹⁰⁷ CPPS review of electronic money, 2004.

¹⁰⁸ KPMG, “Mobile payments in Asia Pacific,” 2007.

¹⁰⁹ Communication protocol that allows readers to access cards information without swiping or inserting the card in the EFTPOS.

for which speed was less of a concern and for which authorization was imperative due to fraud risk.

NTT DoCoMo decided to subsidize the cost of installing e-Money reader/writers in retail shops, to prevent them from becoming an obstacle to the use of FeliCa-based e-Money. With credit cards, merchants could use a single device to process transactions from all the major cards (e.g., Visa, MasterCard, American Express and Japan's JCB). By contrast, originally, each e-Money provider required a unique reader/writer. The technical challenge of integrating multiple e-Money providers' reader/writers into a single device was not great, but e-Money providers might resist integration for strategic reasons. In addition to the cost of reader/writers, merchants that accepted e-Money incurred small transaction fees of about 2% to 3% of the transaction amount in the case of Edy. These fees were lower than credit card fees, which averaged 3% to 5% for small merchants.

The second most important e-Money issuer is Suica, operated by the JR East Railway in the greater Kanto area. Suica has provided fare payment since November 2001, retail payments since 2004 in 12,000 stores, and mobile payments since January 2006. JR East offered mobile Suica on DoCoMo's FeliCa mobile phones. However, only 350,000 customers have signed up to mobile Suica as of 2007, out of the 19 million commuters who use Suica 200 million times per month. Edy and Suica are not interoperable.

In November 2001, Suica service became available in 424 JR East train stations located within 100 kilometers of central Tokyo. Users paid a refundable ¥500 to buy a Suica "commuter pass" or "I/O card" and could load either type with up to ¥20,000. The commuter pass (unlike I/O) held the user's identity, so e-Money balances on the pass could be recorded each time the user accessed a network-connected fare reader at a JR East station. Balances could be refunded if the user reported the pass lost or stolen. Fifteen Passengers found Suica to be very convenient according to the results of a questionnaire presented by the company.

Pasmo is the third e-Money issuer in Japan using smart cards and NFC technology. Introduced in 2007, it operates across 26 railways and 75 bus companies in the Tokyo metropolitan area, and is interoperable with Suica. It is the result of negotiations between JR East with as many as 60 rail, subway and bus companies in the Tokyo metropolitan area to integrate Suica with their fare cards. This project is eventually expected to yield about 26 million Suica-compatible cards.

Nanaco, Waon and Smart Plus are three recently launched e-Money solutions, issuing prepaid cards with FeliCa chips. Although the three of them were negotiating with telecom operators, at the time of writing this report they were not yet providing any mobile wallet solution since they had not yet reached any agreement. Smartplus has 4,500 acceptance points (including gasoline station, Nippon Oil Corp., Showa Shell Sekiyu KK). Backed by Mitsubishi UFJ, UFJ Nicos and Visa (since it is compatible with Visa Touch format). Waon is a contactless smart card and e-Money service from the AEON Group. Nanaco, is also a contactless smartcard and e-Money service from Seven & Holdings (7- Eleven stores, with 12,000 stores around the country, started service in 1,500 stores in Tokyo). It is not interoperable with Edy or Suica.

4.2. Mobile credit card business models

According to KPMG (2007) there are two credit card providers issuing near field chips (m-creditcards). QUICPay was the first, launched in July 2004 by JCB allied with AEON Credit Services, an affiliate of a major retailer, to develop a FeliCa-based service called QUICPay. JCB

was the largest credit card company in Japan and the world's fourth-largest proprietary card system after Visa, MasterCard and American Express. As of 2004, JCB had 52 million cardholders, 3.7 million of whom lived overseas. JCB cards were accepted at 11.7 million service establishments, including 6.1 million locations in 188 countries outside Japan. JCB saw an opportunity to boost credit card use by incorporating a quick-payment capability into its cards.

In contrast to prepaid e-Money such as Edy and Suica, QUICPay was a post-payment service. Users could allocate up to ¥30,000 of their monthly credit card limit to be used for QUICPay payments. QUICPay users avoided waiting for online authorization or signing receipts and could earn loyalty points from JCB partners, since it was based on an off-line authorization mechanism. QUICPay charges were added as a lump-sum total to the user's monthly credit card bill. If a QUICPay credit card was lost or stolen, JCB could deactivate the service if its systems detected an obvious difference in a user's spending habits.

In order to develop an extensive POS Network, JCB planned to install QUICPay readers in supermarkets, convenience stores, food courts in department stores, and other locations where speed was important and cash payments were dominant. JCB and AEON invited other credit card companies to participate in their venture. Since QUICPay used FeliCa technology, the application could be downloaded into FeliCa mobile phones in order to obtain network externalities, and a full-scale mobile FeliCa was launched in the spring of 2005.

QUICPay claimed in 2007 (KPMG) more than one million registered users on cards and phones, and 30,000 acceptance points (including Toyota Finance Corp., Kanachu Hire taxi company, bookstore chain Shosen Group, Tohan Co, and parking lots). QUICPay is interoperable with iD, JCB and contactless card J/Speedy. However, it is not compatible with Edy and Suica.

iD is NTT DoCoMo's operated service for mobile credit cards which is interoperable with Suica, and has some 55,000 acceptance points. DCMX provides the mobile phone-based credit payment service. DCMX is the brand of the cobranded card that NTT DoCoMo launched in collaboration with a number of financial institutions in 2002. These financial institutions and banks are the legal issuers of the cards that are accepted within the Visa POS and ATM system of Japan. As in any "cobranded partnership," NTT DoCoMo provides the loyalty program (NTT DoCoMo points) and marketing of the card, in exchange for part of the revenues (coming from interchange, financial income or any other activity).

NTT DoCoMo does not issue the cards (the banks and financial companies associated such as Sumitomo Mitsui Card, Mizuho bank, UC card, Credit Season and others do) and therefore does not assume the credit risk. As a result, NTT DoCoMo does not need to apply for any credit card license, and therefore is not be regulated by the financial supervisor.

iD is a service that allows DoCoMo to enable the customer's phone, making a request to DoCoMo and therefore to the issuer bank of the DCMX card to register for the service. Once the credit card number is loaded in the mobile phone, the user can pay with it using the FeliCa chip where merchants have readers adapted to the FeliCa communication protocol. iD is therefore the credit card application offered by DoCoMo inserted in the FeliCa Chip. Since FeliCa is a multiplication chip, mobile phones equipped with this chip also have by default the m-wallet application of NTT Docomo (Edy), and any other that their operator inserted (if they are using a FeliCa mobile from another operator).

As a result, the acceptance network of iD is any POS or ATM that accepts Visa and is enabled with a FeliCa reader (according to a 2007 KPMG report this network would be composed of FamilyMart, ampm, Lawson, 100YenShops, McDonald's, ANA, JAL, Toho Cinemas and Tower Records). However, NTT DoCoMo's mobile wallet service (Edy) is only accepted at the POS network's that specifically accept this method of payment (all by default are FeliCa readers).

4.3. The invention of the FeliCa Chip for NFC and its impact on the development of mobile services in Japan

FeliCa is a contactless IC (Integrated Circuit or Microchip) technology developed by Sony and originally built into plastic cards the size of a credit card. FeliCa cards required no battery; they were activated by radio waves sent by a reader/writer device. The user could transfer information by just holding the card close to the reader/writer. Reader/writers would cost between a few hundred dollars and \$1,000, depending on whether features such as screens and input keys were included.

FeliCa's data-transfer speed of 212 kbps was almost twice that of other contactless ICs; the entire process of card detection, authentication and data transfer could be completed in 0.1 seconds. FeliCa's fast processing made it ideally suited for use as "electronic money" and for commuter ticketing.

The IC held individually managed files that could be allocated to different applications. Since FeliCa supported multiple applications, a single card or FeliCa-equipped phone could be used as an employee ID for office entry, e-Money, subway fares, and other applications. Security was provided by a sophisticated encryption system that generated separate keys for each application.

Sony began to work on contactless ICs in 1988. In 1995, Hong Kong authorities adopted FeliCa for "Octopus" cards in their public transportation system. Similar systems were subsequently sold in China, India and Singapore. In March 1999, Sony began trial use of the FeliCa card as an employee ID and "e-wallet" in a Tokyo office and shopping complex. In January 2001, Sony backed an e-Money system called Edy with NTT DoCoMo.

Despite these initiatives, FeliCa struggled to penetrate the Japanese market. FeliCa card usage in Japan finally surged after East Japan Railway (JR East) adopted the technology for its commuter railroad network in the Tokyo area. Within one year of launching its FeliCa system in November 2001, JR East had distributed over 5 million FeliCa-enabled Suica cards (Suica is an abbreviation of "Super Urban Intelligent Card").

Encouraged by Suica's success, Sony, JR East, and DoCoMo discussed the possibility of embedding FeliCa technology in DoCoMo phones. By March 2003, the companies had confirmed that this was technically feasible. However, they held different views about the business model for mobile FeliCa. They solved their differences in May 2003, when the companies agreed to establish a company called FeliCa Networks.

FeliCa Networks, Inc. was established with ¥5.8 billion in capital and a 60%/40% equity ownership split between Sony and DoCoMo. DoCoMo contributed 20 of the new company's 80 employees, while Sony supplied intellectual property and the balance of the team. In June 2004, JR East acquired a 5% stake in the company for ¥1.05 billion, reducing the ownership of Sony and DoCoMo to 57% and 38% respectively.

The plan was for FeliCa Networks to have three sources of revenue. First, it would collect license fees from carriers that purchased mobile FeliCa chips. DoCoMo was exempt from such fees, which would offer a competitive advantage if rivals chose to offer FeliCa-equipped phones. Second, FeliCa Networks would provide platform management services. Applications were not preinstalled on mobile FeliCa chips; rather, users downloaded them into a 5-kilobyte memory area that had room for about 5 to 10 applications. In exchange for managing this memory area and for serving the encryption keys needed to activate applications, FeliCa Networks received a fee every time a user downloaded an application. Third, FeliCa Networks could provide application providers with a range of hosted services such as managing the servers used to download applications or to authenticate users. For most such services, FeliCa Networks would collect transaction fees. However, large application providers might prefer to rely on in-house units rather than FeliCa Networks for these functions.

4.4. The strategy of NTT DoCoMo developing FeliCa chip-based services

NTT DoCoMo adopted Edy for its e-wallet function. The maximum value that could be stored in Edy was ¥50,000. To increase transaction speed, e-Money did not employ PINs or communication networks to authenticate users and authorize payments. This meant that a smart card loaded with e-Money could not be disabled if it was lost or stolen. DoCoMo was able to avoid this problem by equipping FeliCa handsets with a remote lockup feature. In case of theft or loss, users could make a call to DoCoMo customer service to lock their phone's functions.

DoCoMo's total investment in FeliCa technology had not been large because the basic technology was already developed by Sony. However, DoCoMo set aside ¥20 billion for subsidizing small merchants' installation of reader/writers. Merchants received the subsidized reader/writers in exchange for a small fee for each FeliCa transaction.

FeliCa gave DoCoMo the opportunity to improve its image as an innovator, since it was lagging behind KDDI. The FeliCa Chip allowed NTT DoCoMo to develop services such as FeliCa based e-Money (Edy) for the tech-savvy segment of the Japanese population. In addition to reducing churn and improving subscriber acquisition rates in DoCoMo's core business, mobile FeliCa delivered profits from DoCoMo's equity in FeliCa Networks and from new revenue streams such as mobile financial services. In a maturing telecom market NTT DoCoMo wanted to expand beyond telecommunications.

DoCoMo achieved churn reduction and increased subscriber acquisition by increased switching costs. If customers wished to switch to a new carrier, they would have to first deplete any stored e-Money on their old phone and then reinstall all their FeliCa applications on their new phone. Due to network effects, FeliCa applications and reader locations were more likely to proliferate if DoCoMo's rivals also adopted the technology. For this reason, DoCoMo executives decided not to seek exclusive rights for FeliCa. KDDI launched mobile FeliCa during 2005. In May 2004 Vodafone unveiled a prototype handset that used flash memory cards with embedded contactless ICs.

However, NTT DoCoMo's value added proposition attracted and retained many customers. If customers decided to switch from DoCoMo to KDDI, they would be able to use the same set of basic applications like Edy, but they would not be able to use DoCoMo-exclusive upper-level services, such as DoCoMo's loyalty-points program.

With support expected from JR East and other rail companies and eventually from all the mobile carriers, FeliCa became the industry standard. Given the rapid replacement rate for mobile phones in Japan, FeliCa was soon built into 80 million handsets. Since applications in those handsets must be activated through FeliCa Networks, and since DoCoMo's rivals must license technology from FeliCa Networks, the joint venture had considerable bargaining power and became very profitable.

Although DoCoMo never abused its position as a major shareholder of FeliCa Networks, it did have the advantage of learning about new mobile FeliCa applications before competitors. This meant that DoCoMo had launch-timing advantages and conceivably a head start in negotiating for exclusive rights. However, since most application providers would want ubiquitous coverage, DoCoMo might not be able to afford the premium required to secure exclusivity.

The case of NTT DoCoMo shows that the development of the FeliCa technology played a vital role in the development of its mobile banking strategy and on the development of the industry. FeliCa based e-Money was a complicated and risky service, and security was and remains a major issue. The success of NTT DoCoMo's FeliCa Mobile wallet in part reflects the company's control of "every aspect of its handsets and networks" (KPMG, 2007). In countries with less vertically integrated mobile industries, progress is inevitably slower. However, this vertically integrated business model is the cause of one of the main challenges prepaid instruments in Japan have: interoperability.

4. Conclusions

The microfinance services distribution model proposed in chapter 1 aims to solve the supply problems leading to low banking access rates persistent in developing countries. The solutions proposed deal with the high prices, low distribution network density and inadequate risk analysis methodologies used by the financial institutions currently operating in developing countries. The technical solutions proposed based on prepaid platforms and cellular technology (mobile banking), together with the optimization of the impact of remittances and the creation of nodal network structures, make up a model of microfinance service distribution capable of servicing the unbanked who lack access to the formal financial system in a profitable manner.

From a theoretical point of view, we can also demonstrate that the model fulfills the basic functions assigned by microeconomic theory to financial institutions to lower transaction costs in the process of the transformation of assets. The microfinance model proposed seeks to reduce transaction costs that allow for the efficient transformation of assets in a context of asymmetric information. The first element in the model proposed is based on the use of low-cost financial products, namely prepaid electronic platforms. These products reinforce the access to a system of payments, which is one of the financial institution's basic functions. Moreover, the dual nature of these products as payment methods and savings products solve the consumer's liquidity needs. This added liquidity is reinforced in the model proposed with the inclusion of immigrant remittances.

The second element in the model proposed is the use of mobile phones as the basis of a transactional and distribution network alternative to bank branches. Microeconomic theory

highlights the need to reach scale economies in order to reduce transaction costs. The model proposed allows for these scale economies through the use of the existing networks of mobile phones. It is significant to note the operational synergies that appear in the model between mobile operators and prepaid issuers, not only in terms of transactional and distribution networks, but also in terms of the technological infrastructure and the commercial management instruments that can be applied to it.

Of special relevance in the model proposed is banking workers' remittances. Through the reception of remittances into a prepaid account, the system acquires greater liquidity and exploits scope and scale economies fundamental to reducing transaction costs. It is worth mentioning that the operational synergies generated from these savings are based on common elements in the value chains of businesses such as distribution networks and the ability to process information.

However, the review of the initiatives undertaken in this study show that most of the initiatives that have followed models such as the one proposed have failed or have not reached the expected results. Mobile banking transformational business models have not grown extensively in developed nations nor in developing countries. In Europe, transformational models of mobile banking have not appeared for various reasons. First, the lack of demand due to the slower development of e-commerce and a much higher level of banking access, especially among immigrants. Second, the complex regulatory framework that creates uncertainty for mobile operators that want to establish transformational models; and competitive disadvantages for independent service providers. As a result, we find that mobile banking models are mostly "additive," implemented by existing banks that use mobile phones as an additional channel in the context of multichannel strategies. Besides, the slow development of ELMIs (non-bank issuers of e-Money) and the prepaid industry in Europe – mostly due to the lack of demand but also to some regulatory problems regarding electronic vouchers (gift cards, meal cards), transport systems, and travelers cards – gives potentially interested mobile operators no technology platform to operate with other than banks. As a result, and given the current legal loophole regarding mobile operators, they prefer to operate within a closed network (allowing customers to buy ring tones and digital content) instead of developing alternative business models such as GCASH in the Philippines and M-Pesa in Kenya.

In the United States transformational models of mobile banking (or mobile financial services, the first and most basic being mobile payments) leverage SVC platforms to operate. The recent and important development of the SVC industry could be the catalyst for a service that has high potential demand (the unbanked population in the United States, especially among immigrants, is very significant), and where no major regulatory obstacles exist. However, the development of mobile banking services in the United States faces the structure of the telecommunications industry in the country. The lack of standardization and the fractured wireless market impede the take-up of mobile banking in the United States.

Japan is the only developed country with Korea, where mobile banking has been a real business success. Japan's mobile banking market is unique in several aspects, due to the dominance of NTT DoCoMo. DoCoMo's successful mobile banking strategy is based on building the supply side of the market by offering attractive commercial terms to banks, card companies, transport companies, merchants and consumers by subsidizing their handsets. Of special importance in the success story of NTT DoCoMo is the development with Sony of the FeliCa NFC technology that has become the real catalyst for the development of mobile banking services (including credit in the country).

In developing nations, the success stories of GCASH and M-Pesa could be imitated. However, as this study has tried to highlight, these mobile banking business models are mostly based on remittances (a special type of mobile payments), whether domestic (M-Pesa) or international (GCASH). As a result, the most relevant conclusion that this study brings for the ongoing debate on mobile banking is the need for mobile banking operators to expand the range of services they offer to their customers. As stated when analyzing the SVC industry in the United States, in order to better define the business case for prepaid products, additional functions other than payments need to be developed, such as savings and credit features. Both in the United States and in most developing nations where a substantial part of the population is unbanked, market research indicates that demand for savings and credit features in prepaid products is potentially powerful from unbanked customers. Families with relatively low incomes have assets that could be stored in a savings vehicle, but any of these families may not have access to traditional accounts at banks or credit unions. In addition, prepaid products also have the potential to be an effective tool for access to microcredits for some people.

In conclusion, this study indicates that, despite financial and microeconomic theory indicating that a model based on prepaid platforms and cellular technology (mobile banking) is the most efficient in order to address the lack of access to finance in developing nations, a clear business case is still needed in order to fully exploit it. The successful business case will require a clear estimation of the market potential, and a killer application that motivates the unbanked to use this new way of accessing financial services. In addition, a complete pack of basic financial services are to be provided in order to make the value proposition useful for the unbanked willing to access basic financial services such as micropayments, microdeposits, microsavings and microcredits.

Table 4.1

The lack of a clear BUSINESS CASE of mobile banking is the common denominator of the failed experiences presented

	Phillipines	Kenya	Colombia	South Africa	United States	Europe	Japan
Killer application	Yes	Yes	No	Yes	No	No	Yes
Demand	Yes	Yes	Yes	Yes	Yes	No	Yes
Technology obstacles	No	No	Yes	No	Yes	No	No
Regulatory obstacles	No	No	Yes	Yes	No	Yes	No
Results	High	High	Negative	Medium	Negative	Negative	Positive
Critical factor for success/ failure	Top ups and international remittances	Domestic remittances	Lack of understanding of the investment needs	Remote access to bank accounts	Fractured telecom industry	Lack of demand	NFC technology

The experiences reviewed in this study also highlight the fact that the investments required need to be limited in order to allow the mobile banking initiatives be financially sound. Indeed, the experiences reviewed prove that partnerships between prepaid issuers, mobile operators and retailers are required in order to obtain the necessary synergies that allow the financial model of the mobile banking operator to be sustainable. Also, the regulatory framework needs to be adapted to the risks that mobile banking business models pose. Indeed, a risk-based regulatory approach is needed, such as the FSA in the United Kingdom, in order to balance the necessary prudential regulation with sustainable regulatory costs that will allow the industry to develop. Finally, where mobile financial services have succeeded, mainly in Kenya and the Philippines,

we see that, in order to make sure that these success stories (mainly M-Pesa in Kenya) remain profitable over time, channel fine tuning is required.

The cases studied also show that, where mobile banking is occurring, several of the following factors are usually at work: 1) industry belief in future profitability; 2) enabling regulatory change; 3) a dramatic fall in connectivity costs, and 4) the creation of cash-handling agents using existing networks. However, is current hype about the potential of mobile banking and branchless banking running ahead of reality? Massive sustained success in reaching the unserved majority requires better-informed insights into poor people's financial needs and adoption behavior. This is only now starting to accumulate.