“ Banking the unbanked using prepaid platforms and mobile telephones (Mobile Banking)”

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Mobile Banking Research Initiative

OBJECTIVE

The purpose of this Research initiative is to analyze **IF** models based on prepaid platforms and cellular technology (that from now on we call Mobile Banking) can address the lack of access to financial services in the vast majority of developing countries.

This initiative ultimately aims at supporting an evidenced based recommendation of which business models based on prepaid systems and cellular technologies are successful in addressing the financial needs of the unbanked and some others are not in order to support implementation.

Mobile Banking Research Initiative

Methodological approach: In order to determine whether mobile banking business models can be effective in addressing this problem the following approach has been followed

1- This study reviews the most relevant factors that explain the lack of access to financial services.

2- The document proposes solutions for the supply related problems identified in the previous diagnostic based on prepaid platforms and cellular technology

3- The study reviews the state of the industry of its two most important elements: prepaid platforms ; low cost distribution and transactional channels ; and business models based on mobile phones ; The review of these cases aims at explaining why a model that in theory can increase access to finance in developing nations has not always been successful in providing financial services to the poor.

4- Finally, the study presents some preliminary conclusions regarding the financial and technical feasibility of the model proposed, that will determine its effectiveness in addressing the problem of access to finance.

Mobile Banking Research Initiative

1. Causes of the problem of access to financial services
2. Proposed business model to increase access to finance based on prepaid platforms and cellular technology
3. Review of the supply of financial services based on prepaid platforms
4. Review of the supply of financial services using mobile phones
5. Preliminary conclusions

Causes of the problem of access to financial services

The factors that explain the lack of access to financial services are related to the demand, regulation, and supply

1- Price

2- Distribution networks

3- Risk methodologies and database analysis

4- Regulatory framework and inadequate public policies

5- Lack of trust in the financial system and financial education

→ **SUPPLY OF FINANCIAL SERVICES: INADEQUATE BUSINESS MODEL**

Causes of the problem of access to financial services

1-Prices for basic financial services are higher in developing nations that in developed countries

Interest rates differences and efficiency by region, 1995-2002 , IPES 2005- Data from IMF and Bankscope

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	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	1,8	38
Developed countries	30	2,9	1,8	89

Causes of the problem of access to financial services

However, Prices for basic financial services do not refer not to only interest rates but also to:

1- Minimum balances

2- Maintenance costs of accounts, debit and credit cards

3- Transfer and withdrawal commissions

4- Other commissions

5- Interest rates

→ **Prices are too high mostly due to inefficient business models and lack of competition in the financial industry and a value management strategy**

Causes of the problem of access to financial services

2-Distribution networks are too limited because traditional banking branches are too costly, so alternative distribution networks are needed to serve the population

Table 3: Density of bank branches and financial deepening: Based on data from Beck, Demirguc-Kunt y Martinez Pereira, 2006

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
United States	1	30,86	9,81	N/A	N/A
Western Europe	10	44,66	61,25	470	2.197
Asia	10	8,13	18,57	110	715
Eastern Europe	9	7,39	6,83	87	1.040
Latam	17	7,02	5,20	120	490
Africa	5	2,06	0,57	30	146

Source: World Bank, 2005

Causes of the problem of access to financial services

3-Credit risk analysis methodologies are not adapted to developing nations economies where informal activities are so relevant

Only include stable and taxable cash flows (wages)

Do not include informal sources of revenue

Focus on already banked customers

Do not include socio-demographic variables

Are too slow and costly

Require guarantees not adapted to the informal economy

Credit Bureaus do not report non-banking credit experiences

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Better use of technology and data is required in order to improve risk methodologies and obtain faster results

Causes of the problem of access to financial services

Credit risk methodologies: Credit bureaux are required in order to prevent over-indebtedness of individual lenders. However, they need to be complemented with additional methodologies as the US subprime crisis shows

Region	Legal Rights Index	Credit Information Index	Public registry coverage (% adults)	Private bureau coverage (% adults)
East Asia & Pacific	5.0	1.9	3.2	10.1
Europe & Central Asia	5.5	2.9	1.7	9.4
Latin America & Caribbean	4.5	3.4	7.0	27.9
Middle East & North Africa	3.9	2.4	3.2	7.6
OECD	6.3	5.0	8.4	60.8
South Asia	3.8	1.8	0.1	1.3
Sub-Saharan Africa	4.2	1.3	1.5	3.8

"Getting credit". World Bank, 2006

Causes of the problem of access to financial services

4–The regulatory framework can increase costs that affect the ability of financial institutions to offer financial services to the non affluent population

Most common regulatory obstacles are:

1- Price Caps

2- Taxes on financial transactions (Latin America)

3- Supervision Costs

4- Inadequate system of guarantees

5- Government forced investments in non profitable activities

Causes of the problem of access to financial services

5-Public policy issues

Lack of serious interest from Government in taking the lead by encouraging all Government agencies and parastatals (public utilities) to insist that all government related transactions (receipts and expenditures) are made via electronic non cash instruments along with the provision of incentives to the financial sector to make this a reality

1-This is critical as in most countries, especially in developing countries, the proportion of payments transactions attributable to Government is high and in many cases is higher than those attributable to the private sector.

2- The active involvement of Government is also important to demonstrate that the lack of access problem is a national problem worthy of national attention and not simply a financial sector problem.

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A concerted Government led process delegated probably to the central bank or monetary authority will be required if a real solution is to be developed, implemented and nurtured to a successful conclusion as measured by substantial increases in access by the general population. This is particularly so, if changes in the Legal and Regulatory environment are required and if the central bank oversight function is required to give its approval to the proposed solution

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Proposed business model to increase access to finance

The proposed model would be based in the use prepaid platforms and low cost transaction and distribution channels (cellular phones)

1- Specially tailored low cost financial products: prepaid instruments

2- Low cost distribution networks

3- Alternative risk methodologies

4- Optimization of remittances

5- Adapted regulatory framework and economies of scale are needed in order to be able to afford the infrastructures required

Proposed business model to increase access to finance

1- Prepaid instruments are the most cost efficient electronic banking product for "banking the poor" since they can function as a low cost bank account

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

Proposed business model to increase access to finance

1- Prepaid instruments can be used for deposits (where regulation allows), withdrawals and POS transactions

Prepaid platforms have characteristics that make them especially useful for developing low cost microfinance busines models such as:

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, and microdeposits and even microcredits (Banco de Crédito del Perú, Tarjeta Solución Negocios)
5-Allow users control their 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.

Proposed business model to increase access to finance

2- LOW COST DISTRIBUTION NETWORKS are needed to resolve the lack of banking branches

Cost comparison by distribution channel

Point of intermediation Financial Services	Estimated Cost (Thousand US$)
Mobile phones	0 for mobile users
EFTPOS	20 USD
Representative teller	5
ATM	15
Branch	200

Mobile phones and EFTPOS are the lowest cost intermediation channels

But in order to use them prepaid instruments are needed

Source: Superintendencia de Bancos y Seguros del Perú 2006

Proposed business model to increase access to finance

3- ALTERNATIVE RISK ANALYSIS METHODOLOGIES must also use best practices in order to grant and follow up small credits

Infrastructure and organizational changes

1- Inclusion of informal economy verified on the field (BANCO AZTECA; PROCREDIT)

2- Automated acquisition and behavioral scorings using socio demographic and payments information

3- Group based lending and village banking (COMPARTAMOS)

4- Decentralization of the credit risk analysis (ACCION INTERNATIONAL)

5- Use of Credit Bureaux

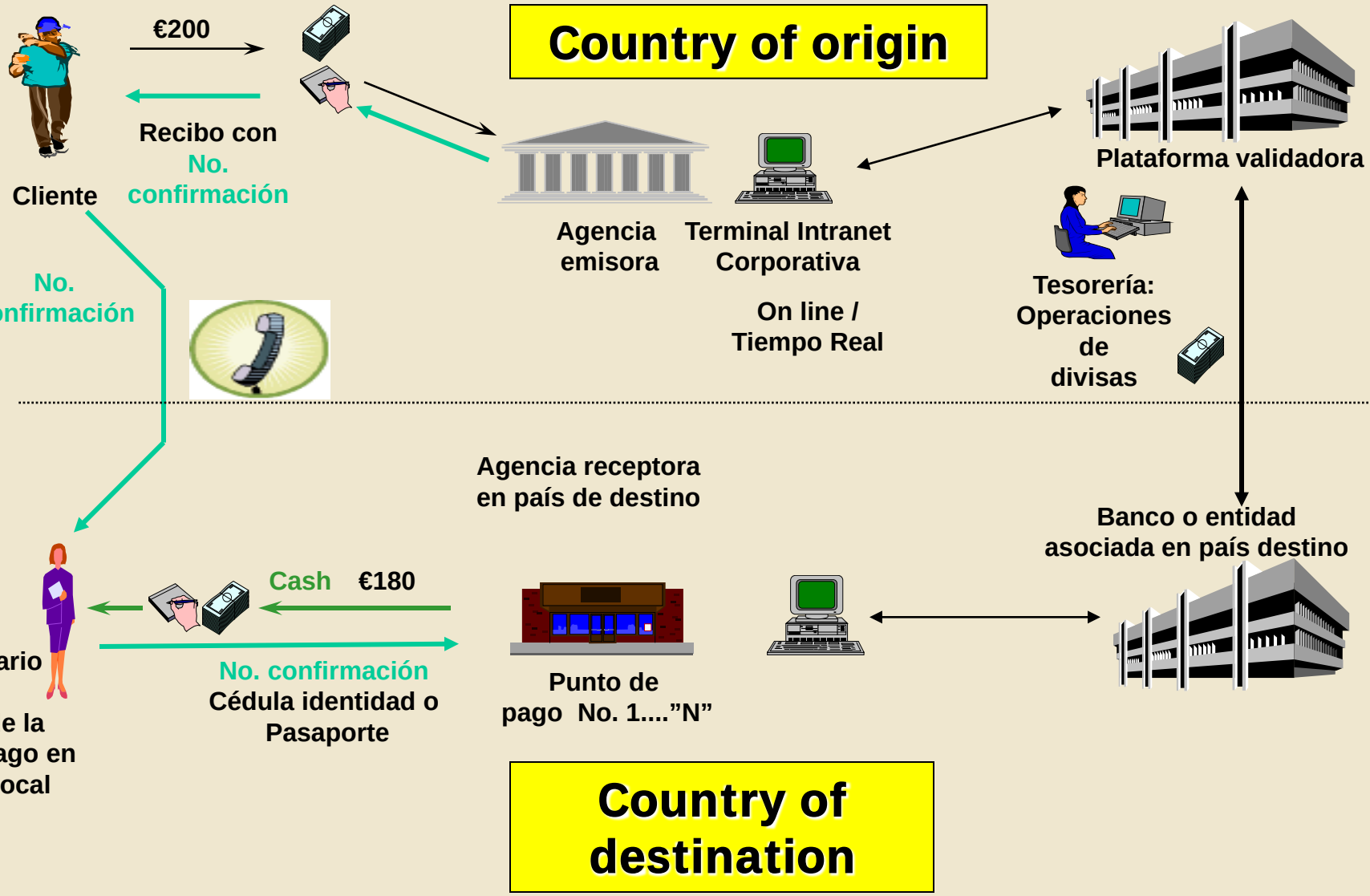
Proposed business model to increase access to finance

4- BANKING REMITTANCES flows and receivers will allow exploiting synergies between the banking and remittances industry

Comparing the value chain of the banking and remittances industry shows potential savings in common elements such:

- The technology platform
- Risk analysis
- Financial services distribution network
- Call center and Internet
- Marketing and commercial campaigns
- POS network and SME business

Proposed business model to increase access to finance



Proposed business model to increase access to finance

5- Adapting the regulatory framework and other public policy issues to the needs of the poor

1- Support the development of prepaid instruments and low cost intermediation channels by developing e.money regulations that allow all basic payment functions on prepaid accounts from low cost intermediation channels

a- Development of e-money regulation:

- Europe : The e-money Directive of 2000
- USA: The emergence of the SVC industry under the MSB regulation

b-Development of agents regulation:

- Review of banking correspondents regulation in Perú, Brazil and Colombia

2- Support the emergence of economies of scale for developing common platforms for Microfinance Institutions (Bansefi- Mexico)

3- Government in taking the lead by encouraging all Government agencies and parastatals (public utilities) to insist that all government related transactions (receipts and expenditures) are made via electronic non cash instruments along with the provision of incentives to the financial sector to make this a reality

Proposed business model to increase access to finance

Supply related problems can be resolved using the business model proposed

THE SOLUTION IS TECHNICALLY FEASIBLE BUT IS IT FINANCIALLY SOUND??

1- Price of financial services	1- Prepaid instruments
2- Density of banking networks	2- Low cost distribution networks
3- Credit risk methodologies	3- Alternative credit risk analysis methodologies
4- Non optimization of remittances	4- Banking remittances
5- Regulatory framework	5- Adapted regulation on e-money, agents and common platforms

Mobile banking is the most adapted value proposition for banking the poor using prepaid platforms and low cost distribution channels

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Review of the supply of financial services based on prepaid platforms

The review of the prepaid industry undertaken has analyzed the cases of the USA , Europe and some developing nations

The USA

Europe

Developing nations

Review of access to financial services

In the USA 40 million American households are underbanked: Customer identification requirements and the retail payments structure are factors that help explain this problem

1- Banking immigrants: Identification requirements for opening bank accounts are vague

2- The retail payments structure in the USA is characterized by the dominance of checks, and importance of offline debit

Review of the supply of financial services based on prepaid platforms

Stored value cards (SVC) or prepaid cards 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: Depending on how the issuing financial institution treats the accounts they can be

1- "pooled" accounts

2- Actual bank accounts held by the individual consumer

FUNCTIONLALITY: Regular debit or credit cards POS and ATM functionality + additional feature of being reloadable in a variety of ways at a range of locations.

That is why SVCs functionality is closely resembled with that of traditional bank accounts, and therefore why they are the basis of the model proposed.

Review of the supply of financial services based on prepaid platforms

SVC systems operate in two ways

1- "closed-loop" system, which can only be used for the issuers' products or for limited purposes, where the issuer and the merchant are therefore the same entity.

Examples: prepaid gift cards at retailers like Borders or Starbucks in a closed payment network

2- "Open-loop" system, that offers consumers the ability to utilize their cards for multiple purposes, where merchants and issuers are different institution. This open payment infrastructure is the basis of bank card systems and therefore currently used for debit and credit cards.

Examples: making purchases at a variety of stores or paying bills. These cards are accepted in payment networks open to multiple issuers,

Review of the supply of financial services based on prepaid platforms

Open-loop SVCs functionality closely resembles that of traditional bank accounts. They can be grouped into three categories:

1. **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;

2. **Reloadable payroll cards,** which serve primarily as direct deposit cards for payroll checks but offer consumers other ways to reload the cards;

3. **General purpose reloadable debit cards**, which consumers can reload in a variety of ways at a range of locations.

Review of the supply of financial services based on prepaid platforms

SVCs could be a valuable financial tool for the unbanked population in the USA for several reasons.

1. SVCs generally lack the identification and credit requirements that effectively bar millions of individuals from opening traditional bank accounts

2. 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

3. SVCs can provide immediate availability of funds at a cost that is, in some cases, lower than some other alternatives for unbanked consumers.

4. SVCs are prepaid and difficult to overdraft, reducing the likelihood of unexpected fees

5. Many SVCs offer some sort of bill pay option, especially branded cards that enable signature-based transactions.

6. Six, a significant number of SVCs offer remittances

Review of the supply of financial services based on prepaid platforms

The MARKET of the prepaid card industry in the USA

It is difficult to estimate the current size of the prepaid market. Closed-loop gift cards are by far the largest market segment. No publicly available data sources on prepaid instruments exist.

Prepaid Market 2003	%	Mill USD
Gift cards	25,00%	39.250
Government cards (EBT)	25,00%	39.250
Payroll	17,00%	26.690
General spending	15,00%	23.550
Others	18,00%	28.260
Total	100,00%	157.000

Source: Mercator. Estimates of the amounts loaded onto prepaid instruments

Review of the supply of financial services based on prepaid platforms

The COMPANIES operating in the prepaid card industry in the USA. The Major players in the US market today include both banks and non banks (majority):

1- **Bank providers/issuers**: BANKFIRST, Bank of America, Citibank, and JP Morgan Chase;

2- **Providers of reloadable prepaid debit cards**: Green dot, NetSpend and Next Estate

3- **SVC processors**: Metavante, StarSystems, WildCard and Galileo

4- **Providers of back-end services for SVCs:** including ATM and POS processing

5- **Payroll firms**: Paychex and Comdata

The distinction between products that are distributed by financial institutions and those distributed by non-bank firms is an important one.

Review of the supply of financial services based on prepaid platforms

The BANKING SECTOR is not heavily involved in the prepaid industry

Perhaps because of regulatory uncertainty, or a more conservative approach to entering new markets, banks are lagging in innovation with regard to these products.

1- For LARGE BANKS, interest in prepaid products is focused in the **payroll card market** than in the general spending market.

Payroll cards, give banks data about customers that could then be used for opportunities in cross-selling other bank products.

2- For SMALL BANKS, interest in prepaid products is based on developing **entry-level products for consumers that might access additional bank services in the future**

Examples: New York Community Bank, Central Bank of Kansas City and University Bank in St. Paul,

Review of the supply of financial services based on prepaid platforms

However, in our opinion the slow development of the prepaid industry and the lack of involvement of the bank industry is explained by the fact that the business case has not been clearly defined

The lack of consensus around the key profitability drivers might help explain why SVCs are such a expensive option, perhaps even more costly than using a check casher for basic transactions

Average prices	SVCs	Bank Accounts
Montly maintance cost	$25,45	$ 6

Source: bankrate.com and CFSI

Prices could come down if additional income revenues were exploited.

Review of the supply of financial services based on prepaid platforms

In order to better define the business case for prepaid products in the USA additional functions demanded other than payments are to be developed

1- SAVINGS: Market Research indicates that demand for savings features in SVC products is potentially powerful from unbamked 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.

2- CREDIT BULIDING FEATURES

↓

Since cards are marketed primarily to unbanked customers, SVCs have the potential to be an effective personal financial management tool for some people.

Review of the supply of financial services based on prepaid platforms

Only a few SVC companies have experimented with offering savings features with their cards, and their experiences are limited in scope

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 USA launched an 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, Individual Development Accounts (IDAs), or other savings vehicles through an issuing financial institution are possibilities for SVC growth.

Review of the supply of financial services based on prepaid platforms

However, SVC companies must face important customer barriers to providing unbanked consumers with savings opportunities through SVCs.

1. 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 its most desired features.

2. **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.

3. "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 must provide accessibility, tangibility, anonymity, or other concerns.

4. However, **the most important perceived customer barriers to providing unbanked consumers with savings opportunities through SVCs is the lack of consumer education**.

Review of the supply of financial services based on prepaid platforms

Although a second potential revenue source for SVC issuers could include adding credit-building features to their products, very few companies are attempting to provide credit-building features to an SVC.

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

1- **IndiGOCARD, Eufora Credit Builder, NetSpend CredAbility** program 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.

2- **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.

Review of the supply of financial services based on prepaid platforms

The structure of the United States' credit reporting system and the US regulatory system presents therefore important barriers for the development of credit features tied to SVCs.

1- Currently the credit bureaus do not accept **Individual Tax Identification numbers (ITINs)**

2- **Credit bureaus currently can only collect credit data**; debit and SVC data are not considered to be "credit".

3- **The Fair Credit Reporting Act (FCRA)**, has prevented financial institutions and other entities to report SVC transaction information due to privacy issues.

4- 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

However, international experiences in credit scoring models prove that SVC usage information should be used for credit purposes

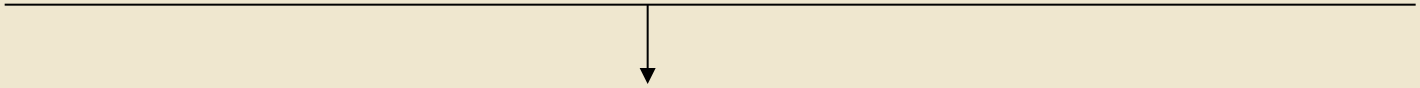
Review of the supply of financial services based on prepaid platforms

The regulatory framework for Store Value Cards in the United States poses problems to the development of this industry

REGULATION OF PREPAID ISUERS AND MARKETERS

CONSUMER PROTECTION ISSUES

CUSTOMER IDENTIFICATION ISSUES



E-money is not specifically defined in the USA as it is in Europe. However Money service businesses or specifically money transmitting regulations are very similar to those required in Europe for e-money issuers (ELMIs).

Review of the supply of financial services based on prepaid platforms

Regulation of prepaid issuers and marketers is similar to Europe

1- SVC issuers in the United States currently fall under the **Money Services Business definition (MSB)**.

2- **Money Services Business (MSB) are mostly regulated by State Laws**

3- There is no need to be a regulated institution in the USA (nor an MSB) in order to issue SVCs, only to market them.

4- **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.**

5- **MSB's agents are in general not regulated, since no list of agents is required**. However, MSBs regulations are different depending on the state, which is a major obstacle for the development of national networks of distribution of SVCs.

Review of the supply of financial services based on prepaid platforms

Consumer protection issues pose relevant problems for the development of "open looped" SVCs as a low cost alternative to current accounts.

1- SVC funds are not protected by MSB laws in the event of an SVC issuer failure, as the Cashpoint case shows.

2- Regulation E and the FDIC only protect payroll SVCs in a not clear manner, but does not ensure the rest of SVCs.

Review of the supply of financial services based on prepaid platforms

Customer identification issues are also a regulatory obstacle for the development of the SVC industry

1- SVC providers require customers to provide **Social security numbers** (Patriot Act) for open loop cards, which difficult "bankarization".

2- As a result they can not operate as they were "designed, implemented and marketed as substitutes for traditional checking accounts (Federal Reserve Board, 2004).

Review of the supply of financial services based on prepaid platforms

The Review of the prepaid industry undertaken has analyzed the cases of the USA , Europe and some developing nations

The USA

Europe

Developing nations

Review of the supply of financial services based on prepaid platforms

Europe has made a very important legislative effort in order to provide electronic money and electronic money issuers with an adequate regulatory framework

1- 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 18 September 2000 on the taking up, pursuit of and prudential supervision of the business of electronic money institutions)

2- 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 20 March 2000 relating to the taking up and pursuit of the business of credit institutions)

3- Payment Services Directive (Directive 2007/64/EC of the European Parliament and of the Council of 13 November 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

Review of the supply of financial services based on prepaid platforms

The EMD defines electronic money as "monetary value as represented by a claim on the issuer which is":

1- Stored on an electronic device;

2- Issued on receipt of funds of an amount not less in value than the monetary value issued;

3- and Accepted as a means of payment by undertakings other than the issuer

Review of the supply of financial services based on prepaid platforms

Although national authorities have tried to differentiate e-money and deposits (or repayable funds), in terms of the "immediately" of e-money this distinction might need to be reviewed since national differences apply

1- **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.

2- **In the UK**, the FSA regards e-money as spending not as a saving product, so when customers do not hold large amounts (in the UK the basic limit is 1000 pounds, however 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 can block the account this limit does not apply) it is not considered deposit taking.

3- **In Denmark**, e-money issuance up to the purse limit of 300 Euros is not considered deposit taking. Beyond, e-money accounts are considered deposits.

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

Review of the supply of financial services based on prepaid platforms

Article 1.3 (a) of the EMD 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"

When transposing the EMD directive, national authorities have taken two approaches

1- First, the majority of national authorities consider ELMIs a **subcategory of credit institutions**. (Austria, Germany and France ELMIS are classified as banks and have therefore the same requirements).

2- 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 organizations** that issue a payment instrument in the form of e-money and have a licence to do so. For example in the UK.

Review of the supply of financial services based on prepaid platforms

The EMD sets the following requirements for ELMIs

1- Capital requirements: As a result of the long process of negotiations, minimum capital requirement were raised to 1 EUR million

2- **Limitation of investments**: 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.

3- **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. Besides, the minimum fee for redemption should not exceed 10 Euros.

4- **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 to provide "non financial services delivered through electronic devices".**

▼

National differences remain regarding capital requirements, minimum fees for redemption, waivers and supervision

Review of the supply of financial services based on prepaid platforms

Problems with the applicability of the EMD directive have appeared regarding MNO's, Electronic Service Vouchers, and Smartcards (gift and meal cards)

1- **MNO's**
2- **Electronic service vouchers:** Issuers of service vouchers such as Accor that wish to provide them in electronic format, face different national regulations that difficult their development. The British and Belgian regulators have stated that they would not consider such products e-money, but the authorities in most other countries were either unsure or whether they would have to apply them the EMD rules.
3- **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 UK, 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 no license or waiver was necessary

Review of the supply of financial services based on prepaid platforms

The regulatory uncertainty regarding MNO's is in part responsible of the slow take up of mobile banking in the region as the SIMPAY case shows

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.

1-Several Member States (Czech Republic, Denmark, Estonia, Finland and the UK) have followed the EC Guidance Note.
2- 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.
3- 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.
4- 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.

Review of the supply of financial services based on prepaid platforms

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.

1- Countries (majority) that 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. Iissuers will not be required to verify the identity of their customers until the total turnover of an e-money account exceeds 2.500 Euros**.**

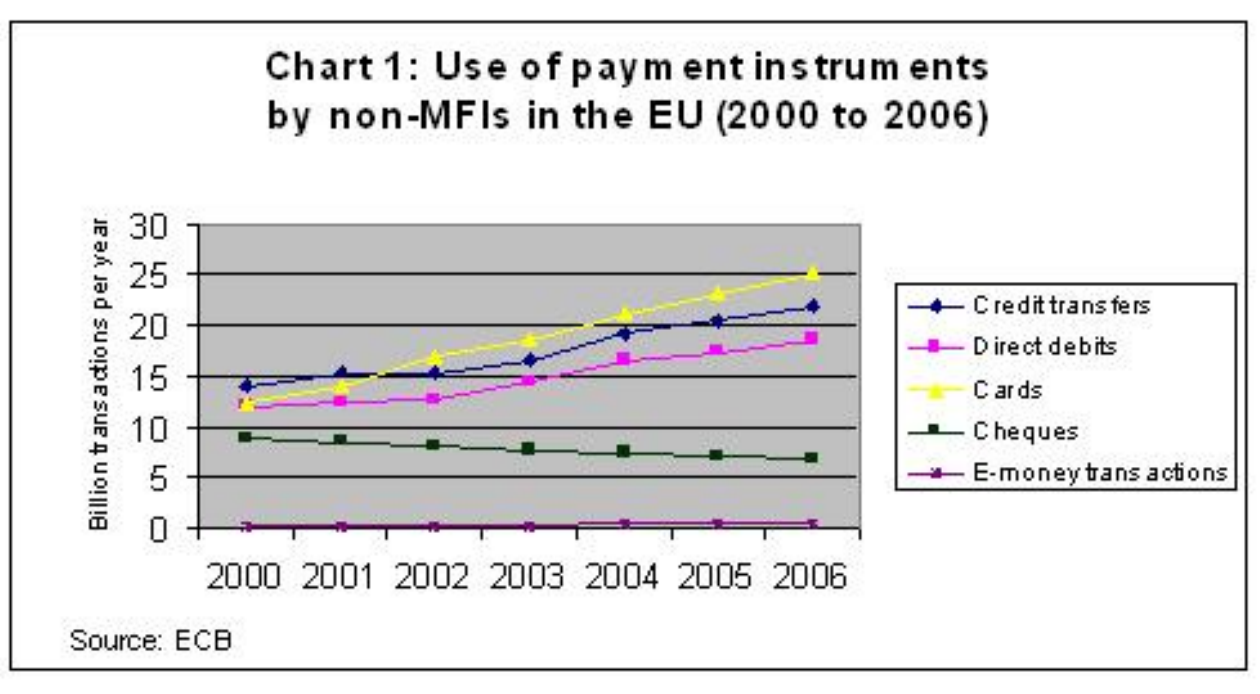
2- Other countries such as the UK have developed explicit rules that apply to e-money instruments, whether they are issued by ELMIs, waived institutions or banks. The identity of the customer does not need to be verified up front (when the e-money account is opened or the card bought). Verification is 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

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

Review of the supply of financial services based on prepaid platforms

The use of e-money has remained very limited since the approval of the European Directive of e-money

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



Review of the supply of financial services based on prepaid platforms

The e-money/prepaid industry is dominated by banks issuing server based products

1- 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 UK, 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). The highest number is in the UK, although only half are active. The second country is the Czech republic, since transport public providers whose travel cards are accepted by other transport providers have to be regulated under a waiver (this is not the case in the UK).

2- Credit institutions dominate issuance of e-money in all EU states. Their products include E-purse schemes like Proton or Chipnik, card or server based schemes offered by a single institution and prepaid cards. Specialized banks also issue the electronic equivalent of traveller cheques. 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.

Review of the supply of financial services based on prepaid platforms

According to the Evaluation of the Directive, the estimated total value of e-money in 2005 was 670 EUR million. The slow take up of the e-money industry in Europe is mainly due:

1- 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.

2- 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 lacked of legal certainty are arguments usually referred when analyzing the regulatory impact of the EMD in the development of e-money. Besides, since the European experience is quite unique in developing a regulatory framework for e-money and e-money issuers is quite relevant analyzing whether the EMD has met its objectives.

Review of the supply of financial services based on prepaid platforms

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 USA- Pay Pal has been the most succesful

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).

1- Disposable and virtual pre-funded cards designed for online shopping.

2- Mobile phone based micro-payments solutions are another solution launched in Europe for server based e-money providers based on cards in Europe..

3- Prepaid debit cards have been issued by most of the members of card schemes (banks).

4- Electronic equivalents of travellers' cheques

Review of the supply of financial services based on prepaid platforms

Card based e-money initiatives in Europe have not developed: Card based e-money represented 0,7 % to total cashless payments between in 2003 . Hardware based money e-money in circulation in the Euro Area totalled 453 million Euros in 2005.

Card-based e-money are traditional electronic purses in the form of a smart card also referred to as hardware based e-money, where the purchasing power resides in a containing hardware based security, generally a chip which is embedded in a plastic card. Despite the fact that a large number of debit cards include electronic purse applications, smartcards use in Europe is very limited.

1- **The most important barrier to growth is that they need their own acceptance network.** However, the upcoming EMV initiative could be the catalyser that will ultimately promote the development of this kind of products, since all EFTPOS and ATMs will accept smart cards.

2- **The second most important barrier is its limited amount of functions:** Card based e-purses are intended for payments of limited amounts, such as vending, parking or ticketing machines. However, they do not allow any other payment functions such as Cash in, cash out or EFTPOS purchasing.

3- **The few success cases of some e-purses initiatives requires a "killer application"**, defined as a very specific use where e-money card offers a clear competitive advantage or may even be necessary to make a payment in certain circumstances. For example, **TRAVEL CARDS**

Review of the supply of financial services based on prepaid platforms

Conclusions: Evaluation of the directive results:

1-Create legal certainty and contribute to the development of e-commerce:
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 and issuers (MNOs)

2-Avoid hampering technological innovation: 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 offset the entry on new operators and therefore hampered innovation.

3-Preserve a level a playing field :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.

4- Ensure the stability and soundness of issuers: The EMD has indeed been successful in ensuring the stability and soundness of e-money issuers. However, the regime might be too strict which explains partially the low take up of issuance of e-money.

5- Facilitate access by ELMIS from one member state into other member state: 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

Review of the supply of financial services based on prepaid platforms

The Review of the prepaid industry undertaken has analyzed the cases of the USA , Europe and some developing nations

The USA

Europe

Developing nations

Review of the supply of financial services based on prepaid platforms

The Philippines: The central bank, Bangko Sentral ng Pilipinas (BSP), has practiced a flexible but hands-on role in the emergence of mobile banking 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 nonbank-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.

1-The Filipino government's commitment to extending financial services to unbanked low-income populations

2-With its **fragmented geography** and the limited reach of the formal banking infrastructure,

3- This **widespread familiarity and comfort with mobile phones** and tendency to use mobile phones for more than voice services

Review of the supply of financial services based on prepaid platforms

The Philippines: In March 2009, BSP issued an E-Money Circular (following the FSA model) , giving more clarity to the e-money sector

•**E-Money Circular 649. After observing Smart Money and GCash for several years, in March 2009 the BSP issued a Circular 649, which 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.**

Both GXI and Banco de Oro (Smart's bank partner)have applied and become e-money issuers

Review of the supply of financial services based on prepaid platforms

The Phillipines: E-money regulation I

- 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 USD 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 sets 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 emoney issuers to provide quarterly financial statements to the BSP.

Review of the supply of financial services based on prepaid platforms

The Philippines: E-money regulation II

- 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).

Review of the supply of financial services based on prepaid platforms

India: 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:

(i)"**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;

(ii)"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; and

(iii)"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).

Review of the supply of financial services based on prepaid platforms

India: In August 2009, RBI amended 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, nonbanks must keep the funds collected in a noninterest-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 nonbanks to focus only on fee-based (rather than float-based) business models.
- **In August 2009, RBI amended the guidelines to permit "Other Persons" to issue mobile phone-based semi-closed prepaid instruments**, although such instruments are restricted to a maximum of Rs. 5,000 (approximately US $110) value, 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.

Review of the supply of financial services based on prepaid platforms

Indonesia: In April 2009, BI issued a regulation concerning electronic money.

In April 2009, 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 emoney 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 emoney.

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 nonbanks 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 nonbanks 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.).

Review of the supply of financial services based on prepaid platforms

Indonesia: However, the ability of these regulations to dramatically change the landscape is questionable, in part due to the requirement that each agent has to obtain a money remittance license.

.**Use of agents by (banks and nonbank) e-money issuers.** 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). However, 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

•**E-money Issuers. AML/CFT regulation**: 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 accompanied with a copy of the identity card. The wording of the Emoney Circular makes it possible for agents to conduct KYC 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

•**Interoperability:** 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 emoney users, there must be efforts to develop systems which can be interoperable. BI may oblige the parties to follow and adjust its systems when criteria or requirements have become an industrial consensus.

Review of the supply of financial services based on prepaid platforms

Kenya has no laws or regulations dealing directly with e-money yet.

Kenya has no laws or regulations dealing directly with e-money.
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 nonbank 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 nonbanks, 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 "deposittaking microfinance business" in the Microfinance Act.** A nonbank can avoid falling under the definition of banking business by not lending, investing, or otherwise placing at the risk of such nonbank 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.

Review of the supply of financial services based on prepaid platforms

Morocco: The Banking law does not allow non credit institutions to issue open lopped cards

•However, closed lopped cards (cartes privatives) can be issued by non credit institutions such as department stores, petrol companies..

•Currently, MFIs such as Al Amana are in negotiations with the Ministry of Finance and BAM to issue closed lopped cards.

•Also, The Moroccan government though APP is in the process of financing new initiatives that will allow closed-loop payments instruments to be used by Moroccan MFIs

Review of the supply of financial services based on prepaid platforms

South Africa : 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)

- **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).
- The 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

Review of the supply of financial services based on prepaid platforms

South Africa : However, payments to third parties may be made by nonbanks pursuant to the National Payment System (NPS) Act

•The largest nonbank 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.

•**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 nonbank 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 nonbanks 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.

As a result, a large proportion of payment services such as bill payments and social welfare payments are provided by nonbanks, as permitted under the National Payment Systems Act.

Review of the supply of financial services based on prepaid platforms

Colombia: There is no regulation on e-money, viewed as prohibiting nonbanks from issuing e-money

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), or
- 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. .

Nonbanks can issue e-money provided that it does not constitute deposit-taking (i.e., repayable funds). Regulations that explicitly allow nonbanks to issue electronic money could end legal uncertainty around this issue

Review of the supply of financial services based on prepaid platforms

Argentina : There is no regulation on e-money, although the industry is developing with services like 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.

It is currently unclear if nonbanks 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.

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.

Review of the supply of financial services based on prepaid platforms

Brazil: Although Brazil led regulation in banking agents, no specific regulation on e-money has been issued which is perceived as prohibiting nonbanks 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 nonbanks 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 nonbank 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.

The lack of such clarity has hindered the development of nonbank-based branchless banking initiatives and even the implementation of simple payment features, such as "cash-back" at retail points.

Review of the supply of financial services based on prepaid platforms

Brazil: 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, South Korea, and the European Union.

- However, CBB has not issued any position or taken any measure regarding open-use prepaid instruments issued by nonbanks.

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 nonbank-based branchless banking models

Review of the supply of financial services based on prepaid platforms

Mexico: A recent regulation identifies four types of banks according to minimum initial capital and types of operation

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 nonbanks to provide some financial services, such as e-money issuing, without having to apply for a full fledged bank license.**

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

Review of the supply of financial services based on prepaid platforms

Mexico: 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 Electronico aims to expand the POS network in the country** and promote 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 also has created a model mobile banking platform with direct settlement at SPEI**, which seems unlikely to support low value transactions in the short run.

•**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

Neither Nipper nor Banxico's model platform have so far attracted a considerable number of providers.

Mobile Banking Research Initiative

1. Causes of the problem of access to financial services
2. Proposed business model to increase access to finance based on prepaid platforms and cellular technology
3. Review of the supply of financial services based on prepaid platforms
4. Review of the supply of financial services using mobile phones
5. Preliminary conclusions

Review of the supply of financial services using mobile phones

Classification of emerging m-banking models according to the Mobey Forum and D. Porteous

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

Source: David Porteous, 2006. Report produced for the DFID " The enabling environment for mobile banking in Africa"

Review of the supply of financial services using mobile phones

This study analyzes only transformational business models of mobile banking (Porteous 2006) in developing and developed nations

Business models based on prepaid platforms and cellular technology address the supply inefficiencies that explain the lack of access to finance.

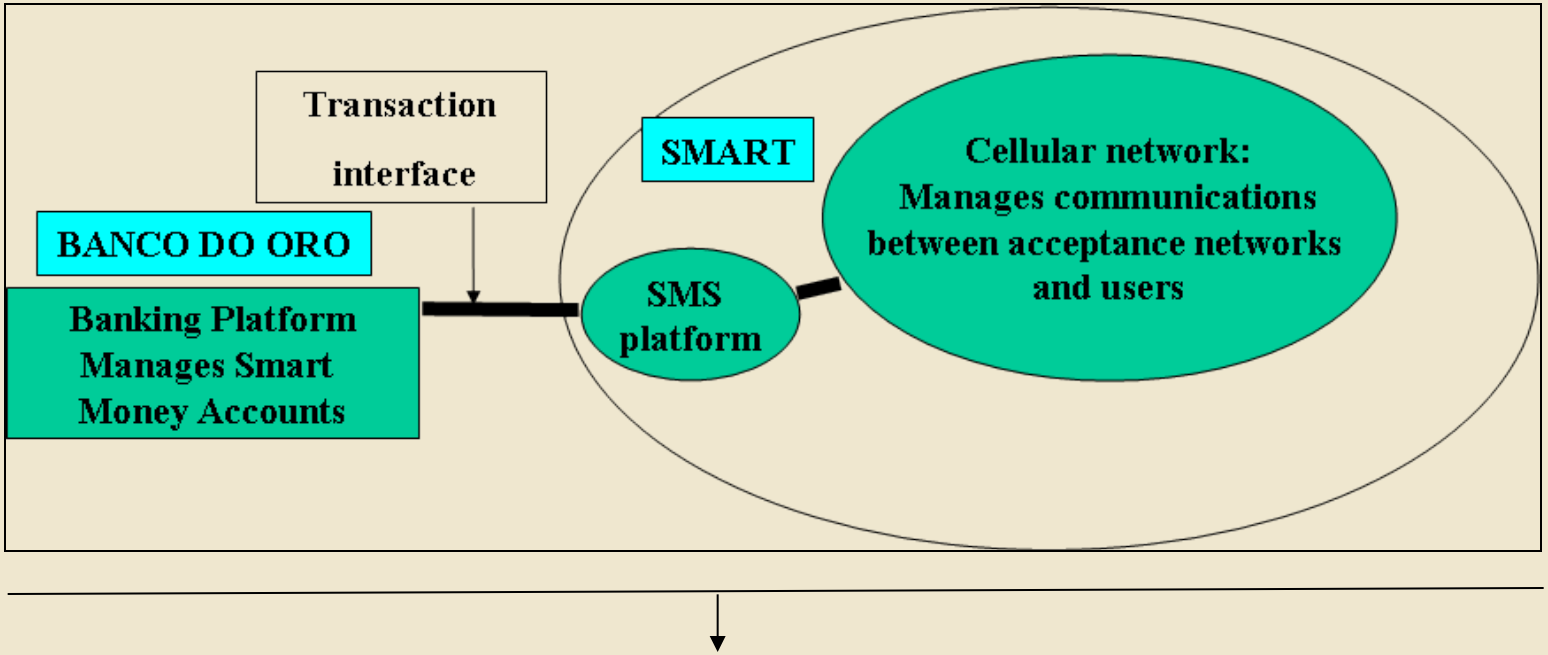
Model name	Bank-centric models	Collaborative models	Independent service providers	Operator centric models
Examples in developing nations	Additive models	Smart/ MTN	Wizzit/SSTA	Globe/ MPesa
Examples in developed nations	Additive models	Mobipay	PayPal Mobile/ Paybox	NTT DoCoMo

Transformational business models

Review of the supply of financial services using mobile phones

Collaborative business model (Smart Money mobile banking) business model is based on its partnership with financial institutions

Smart Money's Business and Technology platform (Infodev, 2006)

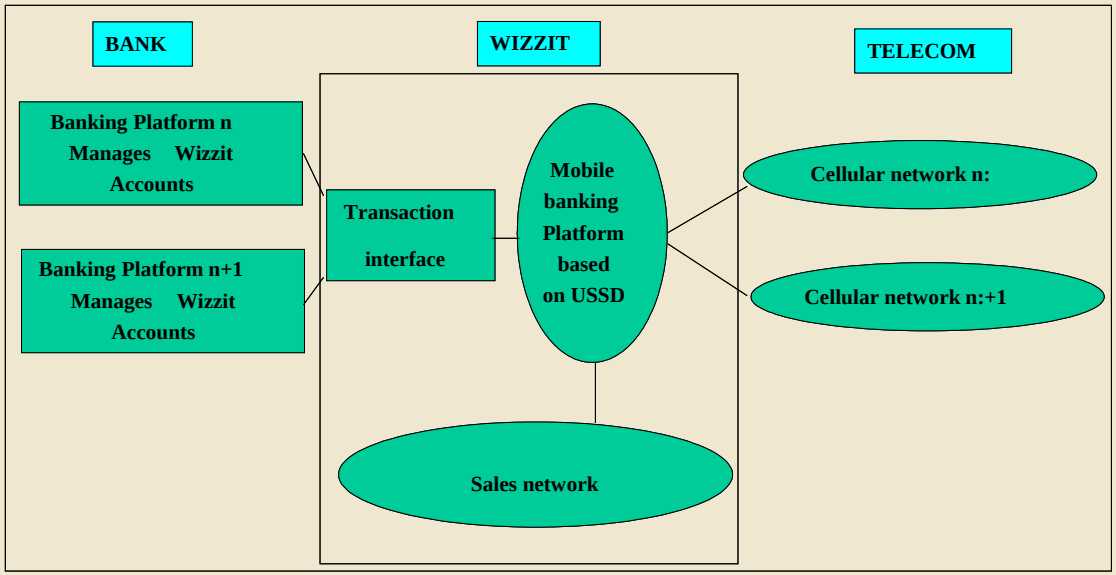


Smart mobile banking business model requires little investment in infrastructure, but has no financial income from float and difficult development of value added services

Review of the supply of financial services using mobile phones

Independent Service Provider business model aims at serving multiple banks and telcos (Wizzit, SSTA, Mobipay)

ISP business and technology platform

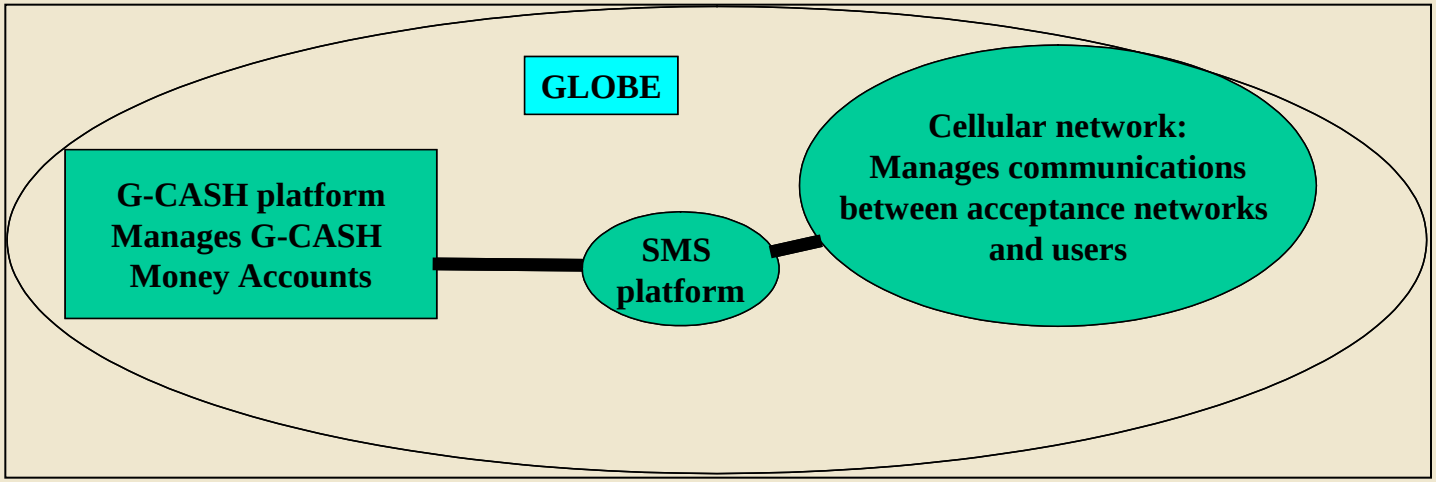


ISP's technology platform allows for interfaces with multiple banks and multiples telcos

Review of the supply of financial services using mobile phones

Operator centric business model (G-Cash, Mpesa) are based on its in house prepaid platform,

G-Cash Business and technology platform (Infodev, 2006)



GXI, holds the deposits managed by its platform, and therefore takes full responsibility in front of regulators

Review of the supply of financial services using mobile phones

Smart Money's financial model is based on making the top up function more efficient and SMS traffic

		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 insitution	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 encription	Yes
	Autentification provided by the operator	Yes
	Authorization using PIN	Yes
Technology issues	Capacity problems	No
Regulatory issues	Regulatory special approval	No

Its current challenge is its MFI Partnership build up, to roll out the Microfinance program with 22 MFIs

Review of the supply of financial services using mobile phones

G-Cash financial model is based on income from transaction fees, float and SMS traffic.

		G-Cash
Key driver of success	Low cost/low value top up system	Yes
	Deposits, withdrawals, and remittances acceptance network	2.980+ 15.000 (acredited)
Business model	Partnership with bank insitution	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 encription	Yes
	Autentification provided by the operator	Yes
	Authorization using PIN	Yes
Technology issues	Capacity problems	No
Regulatory issues	Regulatory special approval	Yes

Its current challenge is the management of its newly created 15.000 CICO network and the expansion of financial services through BANKO

Review of the supply of financial services based on prepaid platforms

Kenya: Having three (soon likely to be four) mobile payments services makes Kenya a unique case in developing markets

•**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 since it began business less than three years ago

• **Safaricom and other providers' (Zain (with its product Zap) ; Essar Telecom Kenya (with its product yuCash) ; Telecom Kenya, owner of the Orange brand in Kenya, has applied to CBK to approve its mobile money transfer service..subsequent early forays into branchless banking were undertaken in an absence of legislation** governing payment systems, e-money, bank agents, consumer protection, and anti-money laundering and combating the financing of terrorism (AML/CFT).

•However, **many believe that 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

•**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).

Review of the supply of financial services based on prepaid platforms

Kenya: 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

•It is the most successful mobile payments business model (9 million customers), basing its business model on:

- **Brand recognition**
- **Channel Management**
- **Pricing**

Its current challenge is decreasing the cost of its retail distribution network

Review of the supply of financial services based on prepaid platforms

Colombia: The uptake of present models has been rather low. The failure of SSTA initiative led by Banca de Las Oportunidades has hampered the de development of the industry

- **Redeban** (one of the bank switches and clearinghouses) recently launched a mobile banking scheme with the intention that electronic accounts would be accessed via mobile phones. Some merchants and banks that had already been connected to Redeban's network are using this platform. Although the objective is to substitute POS and plastic cards with phones and to convert all Redeban merchants into cash-in/cash-out points for the mobile banking service, the mobile platform is primarily used to access bank accounts and it remains unclear whether Redeban will launch its own electronic money product.
- **Banca de las Oportunidades and Banco Agrario** are developing a new initiative for the payment of welfare subsidies
- **For prepaid cards that are issued by nonbanks and that can be used abroad**, BRC requires the issuers to partner with a deposit-taking institution abroad. The operation is subject to BRC's prior approval and the acquiescence of the foreign financial authority. The nonbank must provide information on users and balances to BRC twice a month.

With regard to mobile banking and e-money issuance by nonbanks, it is anticipated that client adoption will not be enthusiastic due to a lack of trust in nonbanks as depositaries of client funds.

Review of the supply of financial services based on prepaid platforms

Morocco: The two leading Telcos have launched mbanking new products under the figure of "IOB" – "Banking Operations Intermediaries

1-**Maroc Telecom (70% market share)** has partnered with Attijariwafabank and BMCE to launch Mobicash, a mwallet product that allows users to store money, pay bills and transfer money between accounts. This service is available in 1000 of the 50,000 airtime sellers and close to 74,000 customers have already opened accounts. However, the business and revenue-sharing model is neither appealing for the banks nor Maroc Telecom. Mobicash is perceived as a pilot to test the market. .

2-Meditel, the second main telco (20% of market share) is owned by BMCE bank. The two entities are partnering to launch a mwallet that allow users to store money, pay bills and transfer money between BMCE accounts only The product would also include a debit card to be used in BMCEs network. The partner bank does not see this as core business but more as a strategy to increase clients satisfaction

MFI Al Alamana is launching its own mobile financial services initiave

Review of the supply of financial services based on prepaid platforms

South Africa : One of the largest retail distribution networks currently operating in South Africa is the prepaid airtime distribution network.

• **Discovery Life, a large South African longterm insurer, launched its prepaid funeral plan in November 2006.** The product is based on a joint venture agreement with Smartcall, a division of South African mobile operator Vodacom.
•Smartcall provides a technological platform for vendors and retailers (from spaza shops to large retail chains) to sell airtime.
•Through the joint venture, this platform can now also be used to sell insurance based on the same principles as prepaid airtime.
•Airtime vendors provide buyers of the insurance policy with a starter pack, which instructs the prospective policyholder on how to register with Discovery.
•Registration is conducted via the mobile phone, with the policyholder inserting his/her identity number, the personal identification number contained in the starter pack, the nominated beneficiaries, etc. Once registered, policyholders buy a voucher from the vendor. When the voucher number is submitted via the handset, the policy is activated.
•This process is repeated monthly to continue coverage..

The potential of using this network to distribute financial services is already being tapped by the insurance industry

Review of the supply of financial services based on prepaid platforms

South Africa : Of the developing countries for which data are available, South Africa has the largest percentage of banked customers accessing banking services through their mobile phone

• All of the large retail banks already offer **mobile phones as an additional access channel for existing bank accounts** (including Mzansi accounts) managed on traditional bank systems.
•However, in the case of WIZZIT, MTN MobileMoney, and Standard Bank's mobile banking service introduced by its community banking initiative (the bank account application is fully integrated with the mobile phone, enabling the customer to use the mobile phone itself as a payment instrument.
•Although both WIZZIT and MTN MobileMoney were developed and are operated by nonbanks—a private firm and a mobile operator, respectively—the Banks Act requires that these businesses, as deposit takers and issuers of e-money, act in conjunction with licensed banks.

However, WIZZIT and MTN Mobile Money, which have been lauded by branchless banking advocates worldwide as solutions for the unbanked, have not grown as expected.

Review of the supply of financial services based on prepaid platforms

South Africa : WIZZIT was founded in 2004 to target the almost 50 percent of unbanked South African adults

- **Wizzit operates in partnership with the Bank of Athens. (The Bank of Athens is liable to the customers for their funds on deposit.)**
- **Customers are primarily recruited by Wizzkids** (4.000 in january 2010)—formerly unemployed people who are trained by WIZZIT to conduct knowyour- customer (KYC) procedures, to issue clients their new Maestro-branded debit card, and to familiarize clients with the use of the application.
- **Customers can use their mobile phone (WIZZIT is "mobile phone agnostic," meaning clients can use phones operated by any of South Africa's mobile operators)** for a number of services, including (i) transferring money to third-party accounts, (ii) checking balances, (iii) loading electricity accounts with prepaid credits, and (iv) buying airtime for prepaid mobile phone subscriptions.
- **WIZZIT has no branches of its own** but has arrangements with the Post Office and ABSA Bank, providing WIZZIT customers with approximately 3,500 sites for deposits.
- **Since WIZZIT clients are issued a debit card**, cash withdrawals can be done at all South African ATMs. Employers can pay their staff by making payment directly into employees' WIZZIT accounts electronically.

WIZZIT has not been able to scale up due largely to the strict compliance standards imposed by the Bank ofAthens—specifically with respect to AML/CFT procedures. As of January 2010, WIZZIT had signed up approximately 300,000 customers.

Review of the supply of financial services based on prepaid platforms

South Africa : In 2005, MTN, and Standard Bank launched their joint venture, MTN Banking, with its mobile banking product, MTN MobileMoney

• **MTN Banking has its own system (Fundamo)**, which is housed at Standard Bank, and its own back office. MTN is the bearer channel pursuant to an outsourcing agreement with Standard Bank. The banking application is fully integrated into the mobile, and every MTN SIM card distributed already has an embedded banking application.

•Account holders can use their mobile phone for **similar services as those provided by WIZZIT**.Account holders are also issued a **MobileMoney cash card** with which they can make cash withdrawals at Standard Bank branches and ATMs and deposits at Standard Bank branches and Standard Autobank machines as well as any EasyPay pay point located at a number of retailers.

•Almost all account holders take the **option of a Mastercard** with which they can make cash withdrawals at all ATMs in South Africa.

•Daily transaction limits of ZAR 5,000 (approximately US$500) are placed on the account to comply with Exemption 17, while a daily transaction limit of ZAR 1,000 (approximately US$100) applies to accounts that are opened without direct client interaction to comply with SARB's Guidance Note 6 (which replaced Circular 6).

Only MTN subscribers can open MobileMoney accounts which limited the number of clients of MTN's Mobile Money.

Review of the supply of financial services based on prepaid platforms

South Africa :However , in early 2009, MTN Banking ceased signing up new customers

•MTN envisioned MobileMoney as a means to reduce customer churn; however, this was not achieved, due perhaps to the failure to persuade MTN South Africa channels that they should distribute the product and possibly also to early marketing efforts that portrayed MobileMoney as an "aspirational" product.
•In early 2009, MTN Banking ceased signing up new customers (although it continues to service its active customer base), and Standard Bank's community banking initiative began offering its own mobile banking service, using field agents to assist in account opening and using a version of the MobileMoney platform developed for it by MTN Banking. The underlying features of the joint venture arrangement do, however, continue.

MTN's Money failure is not however due to AML/CFT requirements like Wizzit, since MTN Banking uses a special application on the phone to enter the required information, including the new clients' identity number (which is then verified against a third-party database), and then photograph the client and his or her identity book to be sent back to the office

Review of the supply of financial services based on prepaid platforms

Argentina : Mobipago , the mobile banking alternative to banking card systems?

- **The stored value can be used for metro payments, purchases in retail outlets near the metrostations, and tolls.**
- According to Gire, the company that manages Monedero, retailers are equipped with POS devices, whose cost of US$500 is divided between Monedero and the merchant.
- Monedero intends to install 35,000 new POS devices in the coming years, which is more than the number of currently installed POS devices in the networks linked to bank switches.
- Retailers pay a fee (undisclosed value) for each transaction conducted at the POS device
- The program is expected to expand to merchants outside the vicinity of metro stations such as Blockbuster, McDonald's, drugstores, buses,movie theaters and others.
- The accounts have a balance limit of US$100 and may be reloaded at purchase points through credit cards (70,000 Monedero cards are linked to credit card accounts), the Internet, and mobile phones. For instance, it is possible to send value from a prepaid mobile phone account to somebody else's Monedero account.
- Opening a Monedero account is free and requires only one identification document and address information. Card balances can be redeemed only if the cardholder has converted the card into a non-transferrable one.

There is no regulation of such service by BCRA

Monedero processes 9 million transactions per month, 80 percent of which are payments at the metro system, 15 percent are payments at other transportation systems, and only 5 percent are used for purchases in retail outlets.

Review of the supply of financial services based on prepaid platforms

Brazil: Competitors touting virtual wallets in mobile phones that will substitute for plastic cards and POS terminals are emerging outside the banking and the mobile phone sectors

- An example **is OiPaggo**, a joint venture between Paggo, a technology provider, and Oi (an MNO) that services credit card companies. **Once a credit card issuer enters into an agreement with Paggo, the credit card is "inserted" into a virtual wallet that is stored in the SIM card of customers' mobile phones.**

- However, other mobile payments businesses are emerging that could cater to informal merchants, such as the one led by **Sebrae/RJ,** which provides a mobile phone-based payment platform for (informal) merchants working on the beaches of Rio de Janeiro

- **Although it is designed to process prepaid accounts and e-money, Paggo currently does not issue prepaid cards because of the lack of clarity regarding whether a prepaid scheme constitutes deposit-taking (which may be undertaken only by CBB-licensed banks and credit cooperatives).**
- **This fact requires merchants to have a bank account to participate in the Paggo system. Consequently, a great part of the informal urban economy is excluded.**

Review of the supply of financial services based on prepaid platforms

Indonesia: The two largest MNOs have each developed an e-wallet service for their mobile phone customers but without much revenue potential for MNOs as e-money issuers due to agents regulations

• **Telkomsel' s T-Cash**, a mobile wallet allowing customers to make retail payments, is available to customers, but industry watchers estimate that as of December 2009, T-Cash had fewer than 100,000 "active" accounts (compared with 500,000 registered users). Even though Telkomsel has received a remittance license from BI to offer a P2P transfer function), it currently does not offer that function.

•**Indosat** has developed, but not yet launched, its Dompetku service. However, Indosat has not been able to qualify for a remittance license, which it needs in order to add P2P transfer functionality to its e-wallet service.

•**Yet, even if an MNO holds a remittance license, it cannot leverage its distribution network toserve as a cash-out point for remittances and withdrawals from a mobile wallet as current regulations would require every airtime dealer to apply individually for a remittance license**(unless the airtime dealer is a branch office of a money remittance license holder). The relatively extensive licensing requirements (would most likely discourage a significant number of small airtime dealers from applying.

Due primarily to existing regulation, T-Cash and Dompetku offer customers fewer transaction services than existing commercial bank-based mobile banking models. In this context, an e-wallet service does not appear to have significant revenue potential for MNOs as e-money issuers, suggesting that MNOs offer e-wallets simply to reduce customer churn and facilitate airtime purchases

Review of the supply of financial services based on prepaid platforms

Indonesia: Some commercial banks have rolled out mobile phone banking applications as an additional transaction channel for existing clients.

- **Technology provider Artajasa provides its Bersama mobile banking platform to 30 banks.** However, usage levels are low. A technology company is about to launch a similar product called Ponsel Banking.

- **Axis, a mobile phone operator, has teamed up with Permata Bank to offer customers a bank account linked to a Visa debit card**. Axis plans to offer a mobile banking service linked to the card soon. It has already signed up members of its distributer network as bank customers to simplify airtime wholesale transactions. Permata Bank benefits because the partnership increases its customer numbers at low acquisition costs and introduces a new liquidity source to account balances.

- The two companies appear satisfied with the early stage of this initiative. However, there are both regulatory and business model realities that may well block significant reach into the unbanked population. KYC regulations limit how much a nonbank partner like Axis can do to acquire customers for the bank. These costs can jeopardize the partnership, given that the mobile banking service is not a core business line for Axis, and low-income customers are not a core target market for Permata Bank.

Additional and not transformational models have developped in Indonesia, but agents regulations can also jeopardize their development

Review of the supply of financial services based on prepaid platforms

Indonesia: There are at least two more mobile banking partnerships that are designed to deliver banking services to new clients

- **The second initiative is by Permata Bank**, which has entered into a partnership with a technology company to provide the banking infrastructure for a product called Ponselpay. The service will work on all mobile networks. Account features will be similar to those of the other mobile banking initiatives. The target market will be unbanked MNO customers and rural bank clients who need access to the broader payment system infrastructure. This initiative appears to offer Permata Bank the same customer acquisition opportunity as its Axis partnership.However, **the Ponselpay partnership also will be challenged by the same regulatory restrictions and business considerations**.

- **The third initiative is Smart Telecom's partnership with Bank Sinarma**s to launch Smart Dompet (translation: Smart Wallet), which envisions providing the user with an interest-bearing bank account, mobile banking application, and access to all ATMs and Bank Sinarmas' remittance services. Smart Dompet has been soft launched for a limited group of people and is moving out into the market. Smart Telecom and Bank Sinarmas belong to the Sinarmas Group, whose employees are the primary target market for the rollout. The respective business models of these two companies and their customer acquisition plan appear to be aligned with a broader Sinarmas Group strategy that may well achieve significant impact in the underbanked and unbanked population.

Smart's initiative can achieve significant impact in the underbanked and unbanked population, following the transformational model used in the Philippines

Review of the supply of financial services using mobile phones

Paybox.net AG (Germany) followed the business model of an independepent service provider when it was launched in 2000

1- This solution was based on an open platform independent from individual banks or mobile carriers.

2- Paybox was to be compatible with any phone, any network operator and any bank account for making payments via mobile phone.

3- Paybox based its business model on strategic partnerships with : Deustche bank (50%), Debitel Telecommunications (4,8%)

4- Its goal of becoming the industry standard led Paybox (encouraged by Deutsche bank) to expedite its expansion to other European markets

By January 2001, The company 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

Review of the supply of financial services using mobile phones

Paybox.net entered the market aggressively but its business model was not sound which lead to its failure

1- Insufficient Income: Business model based on a 12 euro fee for the consumer and a 3% charge for the merchant.

2- Extensive investment plans undertaken by the company:

- Marketing: Paybox.net AG had to raise capital to build up its own brand
- International Expansion

By 2003, Paybox's worsened financial situation lead to Deustche Bank's withdrawal decision

Review of the supply of financial services using mobile phones

Paybox.net Paybox continues offering its technology and know-how to telcos, but its does not offer retail payments services directly as it unsuccessfully tried to do in the past.

Lessons from Paybox failure

1- Paybox's success in Austria proved that cooperation between a strong national partner (Mobilkom Austria) and an accepted mobile payment method could lead to profitable mCommerce.- **TELCO LED SOLUTION**

2- 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. – **COLLABORATIVE BUSINESS MODEL**

Currently, it is a technology provider for Vodafone and o2 in Germany, mobilkom and ONE in Austria, Swisscom, Vodafone Egypt, Maxis Malaysia, Mastercard Int'l, ICSL Nigeria, and Lari Exchange in the UAE

Review of the supply of financial services using mobile phones

Mobipay S.A. is a unique case of collaboration among all financial institutions, payments processors and mobile operators in order to develop an industry standard for mobile payments in Spain

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:

1- Building a cooperative model between financial institutions, telecom operators, and payment processors;
2- Using the high penetration of mobile phones in Spain as the catalyser for using non active bank cards;
3- Offering, a universal solution that could cover all types of payments (micro-macro, virtual-non remote);
4- Using existing hardware such as mobile phones and POS for new transactions without any required investment; Fifth, offering a simple, safe and friendly user experience.

Review of the supply of financial services using mobile phones

Mobipay's cooperative model based on a unique platform shared by all members was a decision promoted by the competition regulator (Tribunal de Defensa de La Competencia)

The ultimate goal of the regulator was to allow every market participant access in equal terms to the technology standards developed by the industry. Standardization also was promoted in order to achieve economies of scale and network externalities, and avoid past failures of proprietary non interoperable solutions by including financial institutions, mobile operators and card processors

1- **Banks** could keep and increase their relationship and their "share of wallet" 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.

2- **Mobile operators** could offer payment services for third party products without having to ask for an ELMI licence, 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.

3- **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.

Review of the supply of financial services using mobile phones

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. Payment transactions could be conducted following two different processes:

1- **Payments transactions conducted using a physical POS allowed the customer to use three identification numbers** . The most commonly used was the telephone number, but the system also allowed users to use an alias (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.

2- **Payment transactions for e-commerce (virtual POS) or when the merchant had no POS terminal.** For these transactions to take place, the merchant had to provide the consumer a sequence of numbers and signs that the user had to dial on the 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 processed, used 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).

Review of the supply of financial services using mobile phones

Facilitating account opening and increasing security were two additional pillar's of Mobipay's strategy

1- **Registering** for the system required activating Mobipay trough 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 will then send a five digit PIN number to the customer that would be used to authorize transactions.

2- **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 neither on the mobile phone nor financial information transmitted over the air (the card number of the user remained in the system of the user). Card payments processors guarantee systems assured merchants of getting paid. Besides, transactions could not be rejected after being authorized from the users PIN number, since inserting the PIN5 digit code was considered digital signature.

Review of the supply of financial services using mobile phones

Mobipay's financial model did not aim at being a for profit initiative. Although it planned to cover operational costs, its main goal was to encourage card payments

1- Costs for the user were low and were decided by the financial institutions issuing the cards based on their commercial strategy.
2- No institution charged for activating or maintaining the Mobipay service.
3- Communication costs, charged by the mobile operators were 0,07 Euros for payment, service and information transactions (These communications were called Mobipay sessions (Sesiones Mobipay) and could not take longer than 15 seconds), except for top up transactions that were free of charge.
4- Mobipay charged 0,024 Euros per transaction (0,018 EUR 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 be absorbed as part of the operational costs of running the card business.

[1]

Its financial model was based on volume

Review of the supply of financial services using mobile phones

Mobipay expected to achieve 4 million active customers by 2004. However, these numbers were never reached

The failure of Mobipay leveraging the large customer base of mobile phone customers in Spain in order encourage bank cards use is mainly due to the lack of interest of a highly banked population in this payment product. Indeed, the two expected market segments that Mobipay was targeting have not responded with interest to Mobipay's value proposition.

1-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 allowing micropayments using also the prepaid telecom accounts of the three mobile operators members of Mobipay, this service does not add any value to the one already offered directly by mobile telecom operators.

2- 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.

Review of the supply of financial services using mobile phones

Mobile banking in the USA, as opposed to Europe, has an important potential market composed of 17, 5 million underbanked households with cell phones

1-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.

2- Among the unbanked, Hispanics are potentially the segment of the population that mobile banking emergent initiatives are currently targeting.

3- Banking access and mobile phone usage of Hispanics in the USA, 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.

Hispanics over the age of 18 without bank accounts that have mobile phones are approximately 3,7 million consumers

Review of the supply of financial services using mobile phones

The most important obstacle to the development of mobile financial services in the USA is the structure of the telecommunications industry in the country

1-**The slow standardization and the fractured wireless market impede** the take up of mobile Banking in the USA.

2- **Mobile phones penetration in the USA is 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.

3- **The continued lack of dependable, universal wireless coverage**, even in metropolitan areas, renders MFS alternatives like online banking more reliable and user-friendly.

4- **Since 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,”.

5-Some experts suggest that **consumers in the United States may be less willing to engage new technology than in other markets** as Korea and Japan.

Review of the supply of financial services using mobile phones

In the USA NFC technology, is driving the development of the Mobile Financial Services Industry

1- **Among payment processors** Mastercard's successful PayPass product in mobile banking was tested during the first quarter of 2007 when Citibank, MasterCard, and Cingular began testing the technology in the United States, in the New York City market, using NFC-enabled Nokia headsets.
2- **The most advanced multichannel offering** among additive mobile banking business models is Banco Popular whose offering is specially targeted to Hispanics
3- **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.
4-Among manufacturers Motorola has led developing M-Wallet Solutions with its application that allows users download directly to their phones through their mobile internet connections.

However, where "transformational models" are being developed is when mobile virtual network operators (MVNOs) partner with SVC providers.

Review of the supply of financial services using mobile phones

MVNOs frequently target niche markets such as youth and ethnic minorities Consequently, MVNOs may prove particularly suited for banking the unbanked partnering with SVC issuers

1-**AMP'd Mobile**, a youth-oriented MVNO with a focus on multimedia content, has announced a partnership with mobile payments company **Obopay**.

2- **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.

3-**Movida**, an MVNO targeted to 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 mpayments solution will also integrate the prepaid debit card and phone to provide wireless remittance services, in addition to wireless transaction and balance alerts.

4-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 to provide mobile payments services (service launched in April 2006).

Review of the supply of financial services using mobile phones

Partnerships between SVC issuers and MVNO's will shape the mobile financial services industry in the USA

1.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.

2.These partnerships, would allow mobile banking value propositions to take advantage on the experience of SVC issuers in the Hispanic market designing products specifically tailored for this segment of the population.

3- **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.

Review of the supply of financial services using mobile phones

The most important challenge that would need to be overcome by SVC MVNO's partnerships is to build extensive load networks

1-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.

2-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.

3- Some Mobile Banking providers such as Obopay have already started thinking along these lines.

4- Retailers like convenience stores and discount chains, already beginning to offer transactional financial services,

Review of the supply of financial services using mobile phones

Paypal Mobile uses SMS or IVR technology, in order to offer P2P transfers and merchant payments at participating retails using their Pay Pal Accounts (in the context of Paypal's merchant strategy)

1-Currently the SMS services works on Alltel, Sprint, T-Mobile and Verizon.

2- Text-message payments might be attractive to offline merchants to small to afford credit card merchant accounts, and to online merchants having signed for Paypal merchant services.

3- Paypal Mobile leverages on the API platform developed by Paypal Merchant Services, the unit of Paypal in charge of developing business outside of the ebay payments world

4-Paypal Merchant Services targets small-to-medium and large online merchants, which together made up $116 billion in off-eBay U.S. sales. In these markets, credit cards were the dominant payment solution.

5- 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.

Review of the supply of financial services using mobile phones

In JAPAN, There are currently six issuers of e-money using smart cards with near field communications (m-wallets)

1- Edy is the biggest among them, and it is operated by bitwallet whose main shareholders are Sony and NTT DoCoMo
2- The second most important e-money issuer is Suica, operated by the JR East Railway in the greater Kanto area.
3- Pasmo is the third e-money issuer in Japan using smart cards and near field technology and as Suica its main use is transport payment
4- Nanaco, Waon and Smart Plus are three recently launched e-money solutions, issuing prepaid cards with Felica chips (contacless smartcards)

The development of m-wallet solutions are due to the FELICA Chip of near field communications, managed by FeliCa Networks, Inc. (60%/40% Sony and NTT DoCoMo)

Review of the supply of financial services using mobile phones

Edy's success is based on its contactless IC chips (Felica)

1- 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").

2-Edy cards were originally sold at am/pm convenience stores for ¥300 (about $3. Edy could be replenished using Edy chargers (or, in some cases, cash register reader/writers) in retail stores.

3- Edy wallet solution was also used in order to run cobranded fidelity programs:

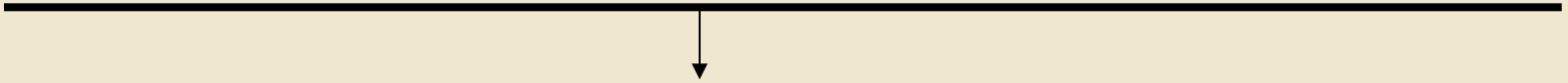
4- Edy was seen by NTT DoComo as one the main applications embedded in its Felica chip that could generate profits.

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

Review of the supply of financial services using mobile phones

Edy' s main challenge was to develop the acceptance network

1- **NTT DoCoMo decided to subsidize the cost of installing eMoney reader/writers** in retail shops, to prevent them from becoming an obstacle to the use of FeliCabased eMoney.
2- 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 eMoney provider required a unique reader/writer**.
3- **The technical challenge of integrating multiple eMoney providers' reader/writers into a single device was not great, but eMoney providers might resist integration for strategic reasons.**
4- In addition to the cost of reader/writers, **merchants that accepted eMoney 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 development of an interoperable acceptance network is still the biggest challenge that the e-money faces in Japan since Edy and Suica are not interoperable.

Review of the supply of financial services using mobile phones

Suica business model is based on providing mobile wallets for public transportation using Felica IC chips

1-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.

2- In November 2001, Suica service became available in 424 JREast 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 eMoney 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.

However, only 350.000 customers have signed up to Mobile suica as of 2007, out of the 19 million commuters that make more than 200 million uses of Suica per month.

Review of the supply of financial services using mobile phones

However, mobile banking in Japan has reached beyond payments and microdeposits allowing also for credit offerings

According to KPMG (2007) there are two credit cards providers issuing near field chips (m-creditcards).

1- **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.

2- **iD is NTT Docomo** operated service for mobile credit cards which is interoperable with Suica, and has some others 55.000 acceptance points

Review of the supply of financial services using mobile phones

QUICPay claimed in 2007 (KPMG) more than one million registered users on cards and phones, and 30.000 acceptance points

1. 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.**

2. 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.

3. **QUICPay charges were added as a lump-sum total to the user's monthly credit card bill.** If aQUICPay credit card was lost or stolen, JCB could deactivate the service if its systems detected an obvious difference in a user's spending habits.

4. 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.

5. QUICPay is **interoperable** with iD, JCB and contactless card J/Speedy. **However, it is not compatible with Edy and Suica.**

Review of the supply of financial services using mobile phones

iD is NTT Docomo operated service for mobile credit cards which is interoperable with Suica, and has some others 55.000 acceptance points.

1. DMCX 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.
2. 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).
3. 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.
4. 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.
5. The acceptance network of iD is any POS or ATM that accepts Visa and is enabled with a Felica reader as opposed to the acceptance of NTT Docomo mobile wallet service (Edy) is only the specific POS network that accepts this method of payment (all by default are Felica readers).

Mobile Banking Research Initiative

1. Causes of the problem of access to financial services
2. Proposed business model to increase access to finance based on prepaid platforms and cellular technology
3. Review of the supply of financial services based on prepaid platforms
4. Review of the supply of financial services using mobile phones
5. Preliminary conclusions

Conclusions

In THEORY Supply related problems can be resolved using the business model proposed

THE SOLUTION IS TECHNICALLY FEASIBLE BUT IS IT FINANCIALLY SOUND??

1- Price of financial services	1- Prepaid instruments
2- Density of banking networks	2- Low cost distribution networks
3- Credit risk methodologies	3- Alternative credit risk analysis methodologies
4- Non optimization of remittances	4- Banking remittances
5- Regulatory framework	5- Adapted regulation on e-money, agents and common platforms

IN THEORY Mobile banking is the most adapted value proposition for banking the poor using prepaid platforms and low cost distribution channels

Conclusions

However, most of the cases analyzed have failed in developing transformational business models

	Phillipines	Kenya	Colombia	Morocco	South Africa	USA	Europe	Japan
Killer application	Yes	Yes	No	Yes	Yes	No	No	Yes
Demand	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Technology obstacles	No	No	Yes	No	No	Yes	No	No
Regulatory obstacles	No	No	Yes	No	Yes	No	Yes	No
Results	High	High	Negative	Positive potential	Medium	Negative	Negative	Positive
Critical factor for success/ failure	Top ups and international remmitances	Domestic remittances	Lack of understanding of the investment needs	Microcredits	Remote access to bank accounts	Fractured telecom industry	Lack of demand	NFC technology

The lack of a clear **BUSINESS CASE** of mobile banking is the common denominator of the failed experiences presented

Conclusions

The cases studied show that a successful BUSINESS CASE in mobile banking requires

1– MARKET POTENTIAL

1.1- Killer application
1.2-Value proposition including the basic financial services for the unbanked: micropayments, microdeposits, microsavings, microcredit

2–LIMITED INVESTMENTS

2.1- Partnerships to exploit synergies with the operators active in the different elements of the mobile banking value chain: PREPAID ISSUERS, MOBILE OPERATORS and RETAILERS

3–ADEQUATE REGULATORY FRAMEWORK

3.1- Risk based regulatory framework that allows prepaid platforms to be used for offering the services required by the unbanked

Conclusions

The cases studied show that where mobile banking is occuring 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;
4-the creation of cash-handling agents using existing networks.

However, is current hype about the potential of mobile banking and branchless banking is running ahead of reality.???

Massive sustained success in reaching the unserved majority requires better informed insights on poor people's financial needs and adoption behavior. This is only now starting to accumulate

Conclusions

FORCES that will shape the future of mobile banking and branchless banking: (CGAP-2010)

1- Demographic changes—• including a greater number of younger consumers coming into the market and greater mobility at least within countries—will be favorable for the adoption of branchless banking.

2-Activist governments will play a greater role as regulators of the financial sector, providers of social safety nets, and providers or encouragers of the rollout of low-cost bank accounts and financial infrastructure. This expanded role may be helpful for financial inclusion.

3-While security concerns about cash crime will continue to drive the adoption of electronic transaction channels, the rise of electronic crime will affect consumer confidence and test the risk management of financial providers.

4- Internet browsing via mobile phones will reduce costs of financial transactions and enable new players to offer financial services.

Conclusions

UNCERTAINITIES that will shape the future of mobile banking and branchless banking: (CGAP-2010)

1-Which entities regulators will allow to provide financial services, and under which conditions.

2-Whether private sector providers will develop robust models for financial services beyond payments, and whether consumers will adopt them.

3-Whether rising competition will spur more services, greater innovation, and lower prices.

4-Whether and how large-scale failure(s) of branchless banking services will affect the confidence of consumers, other providers, and government.

However, in our opinion as the cases of the Philippines, Kenya and the card industry show the key factor for success is the development of an extensive network of MIMO (money in/out) where the customer does not pay