Financial services to lower income population through the correspondent banking technology: lessons from the Brazilian experience at Banco Lemon

Abstract. Recent approaches highlighted the importance of companies to redirect their productive capacity in order to meet the needs of lower income people, because it can be profitable and has positive impacts on the whole society. At the same time, another phenomenon that takes place in Brazil is the great growth of the so-called correspondent banking (CB), where the correspondent, most of retails, offer services on behalf of a bank. Some recent studies propose the CB as a technological channel to foster microfinance. In this regard, there is a pertinent but still scarcely developed question in the literature: how could the current ICT-based model of CB be used to deliver financial services to lower income population? Taking this research question into account, a deep case study was conducted at Banco Lemon, mainly, because it possesses a large CB network, it is based exclusively on CBsno branchesand it is focused on the lower-income population. Main findings of this research refer to two types of financial services, transactional and relational; the former is being developed by leaps and bounds while the latter faced several difficulties and ended in failure at the Lemon case.

Keywords: Correspondent Banking. Microfinance. Inclusive Financial Services. Information and Communication Technologies. Banco Lemon. Brazil.

Introduction

The structure of the financial service currently offered to the so-called lower income population seems not to meet the needs that the microfinance activities and their eminently inclusive objectives aim at. Attaining this objective calls for technologies and processes at

costs compatible with the return that the lower income population may provide in the consumption of banking services.

Abramovay (2004a) state access to banking services is one of the most important conditions to improve the chances of self-employed individuals who are close to the poverty line. He also finds mistaken the idea that the poor must expand their income generation before demanding formal financial services. Abramovay (2004b) also claims that the access of the poor to banks is equivalent to the effect of public policies against poverty.

In this context, it is necessary a new and better exploitation of the information and communication technologies (ICT) used in microfinance activities so that they can eventually fulfill their inclusive role. However, difficulties related to scale gain and to wider geographic reach still prevent the expected spread (Ivatury, 2006). Diniz (2007) argues the most plausible solutions are related to the adoption of new technological channels, standing out the use of points of service (POS) devices at correspondent banking (CB), a concept that is related to an agreement between two institutions, one (the correspondent) accepts deposits and provides services on behalf of the other (the respondent).

The adoption, implementation and use of ICT, which involves different social groups in the communities and that go beyond the limits of an organization, require a direct analysis structure distinct from the ones traditionally used. Jones and Karsten (2008, pp. 150) argue that there should be a greater effort to "broaden the scope of Information Systems (IS) research from its traditional focus on phenomena associated with computer-based information systems at the individual, group, and organizational levels, to address the broader institutional and social developments in which IS are increasingly implicated".

These conclusions imply that the role of ICT in the promotion of microfinance and the offer of banking services to the lower income population needs further detailing concerning the relations between the several groups involved in the adoption of ICT. For these reasons,

this work aims at understanding how the current ICT-based model of CB can be successfully used to deliver financial services to lower income population.

For such, a case that is unique for its particularities and whose bank-community relationships are established ***exclusively*** through bank correspondents will be analyzed using a theoretical model that involves complex and multilevel interactions between individuals, groups, organizations, and networks at the community/societal layer regarding ICT adoption and implementation (Pozzebon et al., 2008).

Literature Review

Microfinance. Since the 15th and 16th centuries, when the feudal production gave rise to the mercantilist mode, with the flourish of trade, tools such as letters of credit and institutions such as the houses of custodywhich would become the current commercial bankswere each time more necessary to that reality. Fachini (2005) affirms, with the advent of the capitalist system, the financial market has sorely developed in the world and with it, all the necessary tools for the escalation of commercial transactions. On the other hand, although there highly developed financial tools, there is still a boundary that precludes much of the world population, specially the poorest portion, from having access to these tools and innovations.

Within this financial boundary, there are commercial banks, stock markets, investment banks, insurances among others. Individuals within this boundary have free access to these institutions (FACHINI, 2005), thus, to formal financial mechanisms that, for reasons explored later in this study, are far beyond more expedite when compared to mechanisms individuals outside this boundary are subjected to. Lower income population, which is focus of this study, is recurrently outside this boundary, which worsens inequality (Abramovay, 2004a), closing the vicious circle to which they are subjected.

Ariza (2006, pp. 12) shows, in 2002, “57% of urban population over 18 had no bank account and two in three people expressed interest in having one.” IBGE (2005) also agrees, based on 2003 data, that there were 10.5 million small non-agricultural concerns in Brazil, which employed approximately 13.9 million people of which 98% belonged to the informal market. Nevertheless, many of these plants looked for financing in sources other than banks.”

Since they have no access to formal financial markets, the poorest use informal financial markets, whose rates are many times higher when compared to those in the formal markets. In this scenario, loan sharks is a steady figure, thus, inequality is highlighted (Abramovay, 2004a). Hawke (2000) apud Stegman et al. (2005) agrees, most of times, lower income population has access to financial services, such as having a bank account or paying a bill, only through high ratesrelatively to their incomeor other kinds of tolls in their day-to-day life. Individuals with a bank account are two times more likely to save money then the unbanked, and they are minded to save in a regular monthly basis (Dunham, 2001 apud Solo; Manroth, 2006).

Abramovay (2004a) emphasizes it is mistaken the idea that, first, the lower income population have to expand their income generation, then, to demand formal financial services. Claessens (2006) also reveal the importance of formal financial access in the economic welfare, mainly for two reasons: (1) access to financial services causes growth (Levine, 2005; Beck et al., 2000; Rajan and Zingales, 1998) and (2) access to financial services remove operational restrictions to small firms, facilitating entry to and exit from the marketplace (Klapper et al., 2004).

So, considering banks are made only for the richwhich is largely accepted in developing countriesdistort the role of banks as economic agents.

Nichter et al. (2002), corroborated by Naqvi and Guzmán (2003), understand microfinance as a set of financial services, such as savings, credit and insurance, provided by

financial or non-financial institutions to lower income population and to micro enterprises-both formal and informalapart or with limited access to the conventional financial system.

According to Berger (2006: pp. 3), microfinance is related to “financial services to micro enterprises: its owner and employees, including everyone, from simple fruit sellers to established street markets.” Besides, micro enterprises are those which include more lower income population, both employers and employees. The author also differentiates microfinance from microcredit, since the latter is only one microfinancial operation, tough, it is very common to witness the misleading concept both in the market and in the academy.

SEBRAE (2008) presents that microfinance refers to provision of adequate and sustainable financial services to lower income population recurrently apart from the financial system mainstream, using differentiated products, processes and management.

In Latin America, lately, the microfinance industry is experiencing a steady growth at 30 to 40% a year, and Brazil, Mexico and Peru are among those with the higher rates. A secret of the microfinance in this region when compared to other parts of the world is the client loyalty, because the services being offered are good, the meet the needs people have, and generate confidence and loyalty (Berger, 2006). Although Latin American microfinance initiatives have operations with smaller bulk then those in other continents, their sustainability and profitability are higher (ibidem).

It is also important to note that, according to Berger (2006), Latin American microfinance initiatives have distinguished features then those in Asia and Africa, since the main target is not only the lower income population or people considered poor, but enterprises with limited access to financial services and the unbaked as well. For example, differently from Asia, three fourths of the Latin American population live in the urban areas and, thus, presents different behavior.

Currently, microfinance initiatives are seen as trying to reaching people not considered target by traditional banks. Berger (2006, pp. 12) affirm "these initiatives are developing systems to measure and manage risks of these people, who do not posses formal documents on their income nor formal credit background."

Correspondent banking. In Brazil, the first institution to enter the CB segment was Caixa Econômica Federal (2000) through the partnership with the so-called *lotéricos*[1]. In 2001, Bradesco followed this tendency and launched the partnership with *Correios*[2], and other banks continued this movement, such as Banco do Brasil, who exploited a large network of supermarkets, drugstores, and bakeries. Banco Lemon, a new and private bank also engaged in the CB business to deliver financial services (KUMAR et al., 2006).

Diniz (2007) assures the CBs were responsible for the delivery of financial services in regions with no bank branches. Additionally, the CB continues to expand: it grew approximately 50% from some 63 thousand in 2000 to more than 95 thousand in 2007, and, more important: the most material expansion is in regions Northeast, Central-West, and North, and South (the first three, among the largest lower income population) (see Table 1).

Table 1 – # of CB outlets in each Brazilian region, from 2000 to 2007, and percentage in the Southeast region (the richest in Brazil)

Region	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Central-West	3.482	3.778	4.114	4.334	4.579	4.998	7.766	7.884
Northeast	7.450	9.241	9.701	10.276	11.167	13.134	18.092	18.149
North	2.837	3.066	3.236	3.399	3.513	3.774	3.134	3.332
Southeast	42.116	45.485	48.202	50.852	53.756	49.084	49.084	47.500
South	7.624	8.359	9.014	9.678	10.381	17.158	17.158	18.984
Brazil	**63.509**	**69.929**	**74.267**	**78.539**	**83.396**	**95.234**	**95.234**	**95.849**
% Southeast	66,32%	65,04%	64,90%	64,75%	64,46%	63,40%	51,54%	49,56%

Source: Soares and Melo Sobrinho (2008, pp. 136).

[1] In Brazil, lottery shops are governmental grants and they are called *lotéricos*.
[2] Correios stands for the Postal Service.

Data reported by Ferreira (2008) estimate the existence of approximately 18,500 bank branches, 6,650 attendance points, and 35 thousand ATMs, insufficient numbers to provide attendance to a country with continental dimensions, which is the Brazilian case; the estimated number of CB is 112 thousand throughout the country, and more then 40 million people use the available financial services. IBGE (2005) claims 37% of informal micro entrepreneurs use CB to meet their demands for financial services.

Diniz (2007) argues some intrinsic factors of the Brazilian economy affect the delivery of financial services to the lower income population in Brazil, where the unbanking rates are extraordinary. Among these factors he highlights: banks high fixed costs, significant high barriers to new entrants, large dimension, and population heterogeneous distribution, and very diversified economic activities. At the same time, large retail banks are involved in a high competitive scenario and they are using sophisticated inter- and intra-banks technological integration, what enables immediate connection with the whole Brazilian territory. Thus, CBs represent a great opportunity to attract clients at low cost.

Diniz (2007) also points some relevant reasons why the CB model has developed particularly in Brazil: (1) the financial segment, as previously seen, is regarded to be one of the most advanced in the world in the use of financial services technology, (2) high operation costs of branches, mainly when the subject is people not using the most profitable products and services, and (3) Federal Government contributed to stimulate this model, legally speaking, aiming at distributing social benefitsimportant to consider the Brazilian geographical dimension and inequality when considering federal remittals, retirement payment and social benefits, to regions with no bank branches.

Ariza (2006) sums up five issues in the Brazilian economic, social and political situation that sustain the important development the CB model took in the country and that led to one of the most successful experience in the delivery of financial services to the poor:

1. Technological aspect of the banking sector in recent years, which enabled the implementation of new delivery channels;
2. Regulation aspect, provided by Federal Government, toward an inclusive financial system, through a set of policies to generate adequate regulatory and macroeconomic boundaries;
3. Normative aspect regarding working hours and wages of formal employees in the financial system, which makes banking branches too expensive, mainly in country regions;
4. Demand for financial services aspect by Brazilian lower income population; and
5. Geographic aspect, since Brazil is geographically very extent, with demography dispersion of population, mainly when the lower income population is considered.

Banks have been using more and more their network of correspondents as a transactional services channel (bill payment, money withdrawal etc), leaving under explored opportunities as a channel for more aggregated value services (credit, insurance etc), provided by the extent of its capillarity and by the access to the lower income population.

Conceptual Framework

The conceptual framework adopted herein incorporates inextricably linked levels of analysis: individual, group and local community, as suggested by Pozzebon et al. (2008). It combines four central concepts: technology-in-practice, negotiation, relevant social groups (RSG) and technological frames. These concepts are linked according to three interconnected dimensions, as posited by contextualism: content, context and process.

This multilevel framework aims at helping to identify occasions, spaces and mechanisms for implementing and using ICT applications at a community/societal level. Each of these concepts, selected to set out the framework, is important for the purpose of this

paper for different reasons. Between individuals and community, there is the group level, which is articulated through the key concept of ***relevant social groups*** **(RSG)**. Pozzebon et al. (2008) define the concept as follows:

> **"Relevant social groups** refer to a set of people who share a common geographical space or occupy the same functional boundaries. In addition, from a constructivist point of view, relevant social groups also share a set of assumptions about a given subject of interest, for example, the expected benefits of the implementation of a new technology (Sahay, & Robey, 1996). *Subgroups and alliances between groups form social spaces and play important roles in the choice of management strategy and use of technology*."

The concept of RSG allows us to understand how people interact within a given community, whether individually or as part of a group, an organization or a network. In our case, the bank representants, the manager network representants and people from communities are relevant social groups. The alliances and consensus that they achieve should be considered in the choice of management strategies.

In the adoption and use of a given technological artifact different social groups attach interests, assumptions and expectations on that. Convergence or divergence, dominance or conflict among ***technological frames*** reveals important mechanisms in negotiations among relevant social groups. Still according to Pozzebon et al. (2008):

> "***Technological frames*** *refer to basic assumptions, beliefs, and expectations that people hold about a specific technological application (Davidson, 2002), including not only the nature and role of the technology itself, but the specific conditions, applications and consequences (intended and unintended) of that technology in particular contexts (Orlikowski, & Gash, 1994). Technological frames might be shared within a relevant social group because members are likely to share common perceptions, expectations and interests regarding the implementation and use of a given ICT application. Similarly, technology frames might differ between different relevant social groups.*"

After we have identified the relevant social groups, it is important to identify the technological frames attached to these relevant social groups (shared and conflicting

perceptions, expectations and interests), because it could define the initial boundaries of the investigation and help establish the *context* in which the implementation and use ICT is being negotiated. In the case analyzed herein, the technological frame of Bank Managers, managers network and community could be different many times and they need to negotiate to find the best way to achieve their goals.

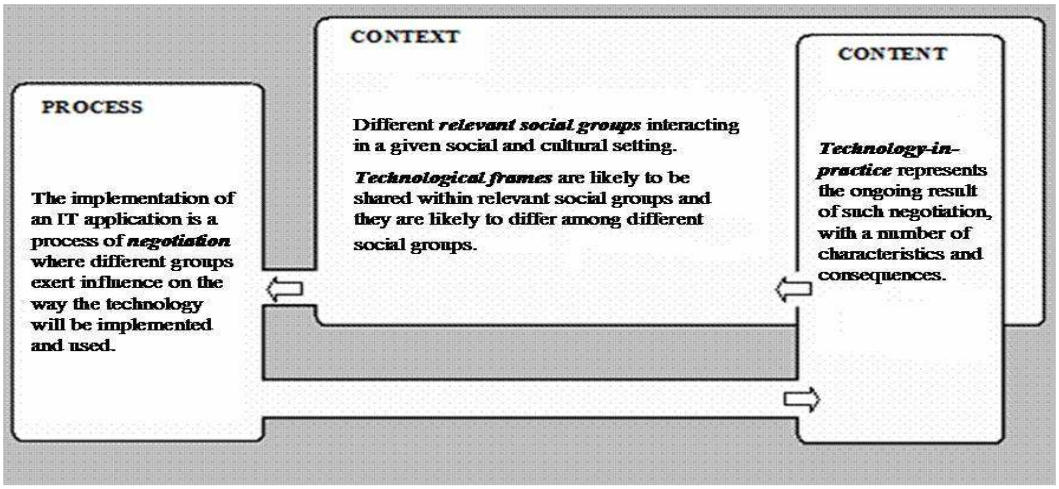
In the ICT implementation and use, **the *negotiation*** is the *process* corresponding to not only the content of the technology itself but also to the identification of occasions, spaces and mechanisms open for negotiation and change becomes crucial for the relevant social groups interaction. What we need to ask in our case is in what arena people are discussing their interests and which are the mechanisms that Banks, network managers and community use to exchange information? How they make their interests prevalent in different occasions?

Eventually, it is important to think about the concept of ***technology-in-practice*** (Orlikowski, 2000) as the result of the negotiation process among different RSG, in order to recognize what interests or assumptions have prevailed in the implementation and use of ICT and what are the *consequences* for the different social groups involved in the process. Orlikowski (ibidem) concept of *technology-in-practice* moves toward a more proactive and practical lens that focuses on emergent rather than embodied structures and replaces appropriation with enactment Adopting such an alternative view, Orlikowski points out that there are always boundary conditions on how to use physical properties of artifacts, and that people always can (even if they do not) redefine the meaning, properties and application of a given technology after development or implementation.

The result of combining the four concepts (relevant social groups, technological frames, negotiation, and technology-in-practice) organized in terms of the three interconnected dimensions of the contextualist frame is presented in Figure 1, as follows. The

arrows indicate that context influences the process, which influences the content, which influences the context and so on.

Figure 1 – The structurationist and multilevel framework



Context			**Process**	**Content**
Individual level *Group level* *Community level* (could be extended to societal level)	The connection between individuals and the local community goes through the **relevant social groups** interacting in a given social and cultural setting.	People build their **technological frames** over time. This implies the identification of *assumptions, expectations and interests* attached to the implementation and use of a given technology.	The implementation and use of ICT is a **negotiation** where different groups exert influence on the way the artifact will be implemented and used. Implies the identification of *occasions, spaces and mechanisms* open for negotiation.	**Technology-in-practice** represents the ongoing results of such negotiation, with a number of *characteristics and consequences (intended and unintended).*

Source: Pozzebon et al. (2008).

Methodological procedures

Hair Jr et al. (2007) state the exploratory research, which is the present case, is used when the researcher has little information about the problem. It is designed to discover new relationships, patterns, themes and ideas; thus, it is not intended to test specific research hypothesis.

An in-depth case study qualitative approach was employed in order to capture the complexity of our research, which conceived four steps (discussed later) to apply the multilevel framework to the field research. Hair Jr et al. (2007) affirm the logic of conducting

a case study is that in order to obtain a complete picture of the entire situation one must examine a real-life example. This enables the researcher to identify interactions between all the variables in a real-life setting.

Banco Lemon, the selected case study, is the result of a venture investment led by former Argentinean partners in a financial concern: a financial internet site called Patagon during the dot com boom in the early 2000s. These partners sold the internet site to a consolidated financial institution and raised funds, but stayed in the same business for a while. After the internet boom collapse, this institution decided to sell some assets, which included a permission to operate a financial institution in Brazil. The year was 2001 and these partners decided to keep this permission, but instead of competing with other huge holdings such as Bradesco and Itaú, they decided to create a new and different business in the financial marketplace[3] focused on CBs and targeting a yet unknown segment: the lower income population[4]. In June 2002, the Brazilian Central Bank allowed the new venture, which was called Banco Lemon[5], to start operations, which took place in late 2002 and early 2003.

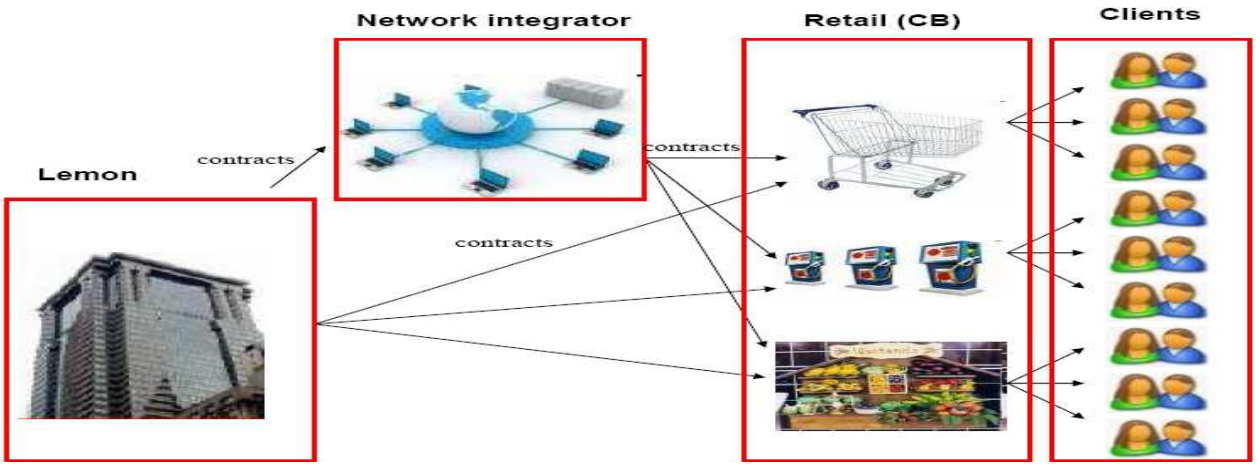
At this time, Banco Lemon also put in practice a strategy to acquire some other businesses focused exclusively on the capture of CBs outlets: the Network Integrators. These Network Integrators were separate businesses responsible for commercial and support issues regarding the CB outlet. This way, Banco Lemon could both contract CB retails directly and contract them through the Network Integrator (vast majority of cases: more than 98%). Figure 2, next, shows both approaches.

[3] Approximately US$ 40 million were invested in the constitution of the bank. This amount was far below the assets of other retail banks at that time.

[4] At that time, Caixa Econômica Federal was already operating CBs through the so-called *lotéricos*, which were lottery shops that offered also some financial servicesthe most important was the delivery of governmental benefits. However, the CB business, generally speaking, was still incipient.

[5] The original name was Lemon Bank, but this name was readapted in 2008 to meet the lower income population demand, to whom the name was of difficult pronunciation and understanding.

Figure 2 – Banco Lemon's CB approach to the client



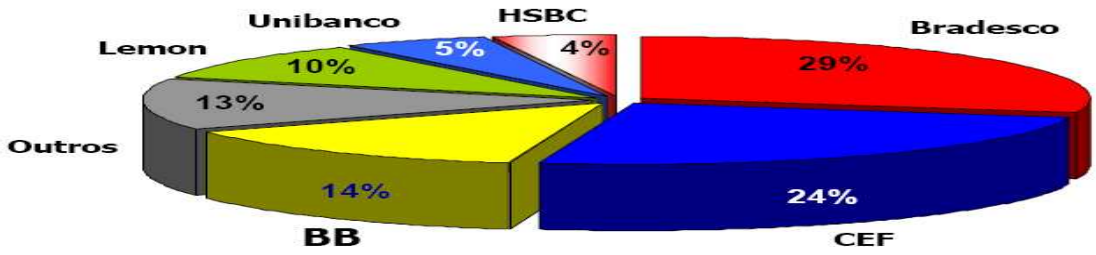
Source: Yokomizo (2009).

With the slogan of "All Brazilian's bank", Banco Lemon is now present in more than 6,527 CB establishments in the whole country (in all Federal States and the Federal District) in more than 1,500 cities. According to institutional information in its website[6], the bank has partnerships (CBs) with retail networks which include bakeries, drugstores, supermarkets, groceries, gas stations, and commercial establishments in general. These stores are closer to clients than banks outlets, such as branches and ATMs. The CBs has also longer working hours, which increase convenience to clients. Its strategy is based on delivering financial services to the so-called classes B2, C, and D through CBs, although the criterion for this classification is not revealed. It is important, though, to recognize the target is not "premium" classes (A and B1), instead, the focus rely on the lower income population.

With headquarters in Barueri, an industrial town 23 km apart from São Paulo city, Banco Lemon's correspondent network is quite large. Despite its small size (assets), Banco Lemon has one of the largest correspondent networks in Brazil; as it can be seen in Figure 3, below, only three banks (Caixa Econômica Federal, Banco do Brasil and Bradesco) have larger networks of correspondents in the country.

[6] http://www.bancolemon.com.br

Figure 3 – CB market share in number of outlets



Source: Queiroz Filho (2008).

CEF = Caixa Econômica Federal and BB = Banco do Brasil.

Some particularities of this case when compared to the others may be highlighted as follows and show the interest in studying such a case:

- Banco Lemon is the only one in the Brazilian context to operate exclusively through CBs, thus, it does not possess any physical bank branches and its Information and Communication Technologies use is intensive and somewhat particular;
- Banco Lemon is a private concern aiming at sustainable profits, since it can not count on governmental subsidies or help. Business processes and use of ICT assume particular forms, mainly when compared to public owned banks that have explicit orientation to social services, for instance, in the delivery of governmental benefits.
- Banco Lemon is focused on the lower income population, which is also the target of this work. Its mission explicitly show this orientation: “To be a bank that offers adequate products and services to the Brazilian needs, through a low-cost, effective and innovative approach, with sustainable results that aggregate value to shareholders, employees and partners, contributing to the democratization of the financial market.” Other important aspect is that Banco Lemon has initiatedand still has its operations in the Northeast, region which is surely one of the poorest in Brazil.

- Banco Lemon is a new concern when compared to its competitors: its operations have initiated in late 2002, while the vast majority of competitors has decades, and some, even centuries of existence.

A particular feature at Lemon is the existence of three types of CBs: (1) hybrid: it is the basic and the most common model, in which the shop teller processes financial transactions, (2) kiosk: it is an evolution of the hybrid model, and the kiosk operator is no longer a shop teller, he is a specialized employee[7], in a separate corner inside the shop, and (3) store: it is an outlet specialized in the offering of financial products and services (its main goal is to obtain profit through financial services), but can occasionally offer other products and services, such as copy services and magazine selling, for instance. Table 2, below, presents the percentage and main features of each type of CB at Lemon.

Table 2 – Types of CBs at Lemon: percentage and main features

Type	Percentage	Main features
Hybrid	80%	Cheaper, but totally dependent on CB employees to deliver more value aggregated products and services, such as savings, insurances and credit. Most of it is composed by supermarkets and drugstores.
Kiosk	12%	More expensive than the hybrid type, because there is a specialized employee to perform the financial transaction. On the other hand, because he is a specialized employee, he can provide a better assitance to the client.
Store	08%	Based mainly on a franchise model, its goal is to obtain profit through financial services. Most of times, employees and onwers can also provide a better assitance to the client.

This research included 22 interviews (discussed later) with interviewees pertaining to different relevant social groups and whose information where classified and interpreted in order to better understand the adoption, implementation and use of ICT to deliver financial services to lower income people through CBs. As a result, we propose a division in three discrete phases with its own features:

[7] For legal reasons, the Network Integrator (instead of Banco Lemon) is responsible for this employee.

Phase 1. Ranging from 2002 to 2005: Consolidation of the payment service. External factors such as governmental regulations and the telecommunications infra-structure spread[8] allowed the operation of the incipient CB business in Brazil. It is worth to mention that a particularity of the Brazilian financial system that helped in the expansion of bill payment was the so-called *boleto bancário*, a payment paper issued by a bank and which payment could be done in any cashier in the payment network, which included other banks and even CB outlets; it is not mandatory that the payer is a client of the bank where he is paying the bill, nor a client of the bank that issued the *boleto bancário*, nor a client that even possesses any bank account. Prior to flexibilities in the CB regulation, a somewhat common scene was thousand (maybe millions in whole Brazil) of people heading to a bank with the single purpose of paying bills; it was chaos: unhappy users facing endless queues with barely no comfort, and less-profitable bank branches, which constitute the most expensive banking channel. In this scenario, technology providers and network integrators are two RSG that play a vital role in this period: the former made possible the use of a known device, which was the point-of-sale (POS) machine, to accept bill payments and electronically transfer information to the bank's datacenters; the latter made it possible to spread the number of CB outlets throughout countryside Brazil, in rural and urban regions with recurrent difficult access, such as the Amazon and Northeast regions, and shanty towns in big cities. As a result, with no opposing RSG or forcesfor example, regulations and strategies, the CB business turned to be very profitable to Banco Lemon and to its partners, and very convenient to clients who had a closer, faster and less frightening ambience than traditional bank branches.

Phase 2. Ranging from 2005 to 2008: Introduction of credit offering in the business model. Favorable financial results in the previous period allowed Lemon to expand horizons and try other products and services in its portfolio. Reasons include: (1) diversification of

[8] According to the Brazilian telecommunications services availability regulations.

products and services in the portfolio reduces risks, and (2) new initiatives were related to relational services, thus, with larger profit margins. Although some initiatives are related to (micro) insurances, to (micro) savings and to simplified bank accounts, the most relevant initiatives were those related to credit offering. This phase will be analyzed at length later.

Phase 3. Since 2008: Stop offering credit and expansion of CB network: Two main drivers are guiding Lemon's operations in the period starting since mid 2008: (1) focus is going to rely on the network expansion and on the payment service, and (2) the world financial crisis is currently promoting negative impacts on the bank's operationsalthough it is not possible to precise to which extent will it bebecause the bank capture money in the market. As a result, Lemon decided to stop credit offerings, which are riskier and proved not to be profitable, at least according to Lemon's business model for credit. On the other hand, it is worth to mention that the bank has almost no clientsvery few bank accounts, and that the transactional bill payment services are less risky when compared to credit offering and generate revenues that sustain the bank's operation, although this efficiency may be questioned.

In this context, attained to the goals of the research, we divided our methodological approach into four steps, say:

Step 1: Selection of the case and preliminary data collection regarding the Banco Lemon context. Sources for data collection included Banco Central's[9] website (http://www.bcb.gov.br) for official numbers declared by Banco Lemon, especially those regarding revenues and credit, and Banco Lemon's website (http://www.bancolemon.com) for identifying the declared mission, objectives, products and services offered. Besides, general websites with news about Banco Lemon were also considered in this step.

[9] Equivalent to the US Federal Reserve in Brazil.

Step 2: Preliminary validation and mapping of major relevant social groups. We carried out a preliminary identification RSG and the results are presented in Table 3, below.

Table 3 – RSG and their technological frames

RSG	2002-2005	2005-2008
Government	Changes in regulation promote the adoption of CB as a channel to deliver financial services. CB is seen as a means for delivering financial services to lower income population, especially for delivering governmental benefits.	Governmental incentives to microcredit offer hindrances to Lemon's interest rates (competition with governmental banks).
Banco Lemon	Competing with other banks in the mainstream would be mistaken (new and small venture); that is why adopting the CB as a channel to deliver financial services was one possible way to the profit.	CB could also be used to deliver credit, not only to be a bill payment checkout.
Network Integrator	Spreading the network coverage and number of agents was easy in an under explored market. CB was a promising business and could lead to profits for the integrator.	Although spreading the network coverage and number of agents was still important, training employees of CB agents was time consuming and relatively expensive.
CB Hybrid and Kiosk Owner	More clients (attracted by the payment service) could lead to higher profits through retail sells.	Credit offering lowers CB capacity to process bill payments. At the same, worthy incentives must be given to stimulate the owner engagement in the credit business.
CB Store Owner	CB meant a profitable business opportunity in the delivery of financial services.	Credit offering lowers CB capacity to process bill payments. At the same, worthy incentives must be given to stimulate the owner engagement in the credit business.
CB Hybrid Employee	More clients (attracted by the payment service) could help maintaining their jobs by leveraging the main business.	Credit offering demanded higher qualified employees. At the same, worthy incentives must be given to stimulate the employee engagement in the credit business.
CB Kiosk Employee (Network Integrator)	CB meant their own jobs.	Worthy incentives must be given to stimulate the employee engagement in the credit business.
Client (for payment)	CB meant reduced transaction costs: closer to home or work, wider working hours, more customized attendance, more convenient.	No changes from T1.
Client (for credit)		Consumption- and business-oriented credit can be offered in CB outlets, which is a viable means for delivering credit. On the other hand, Lemon's interest rates are prohibitive to both consumption- and business-oriented credit takers.

Step 3: Selection of people perceived as representative of each RSG. Regarding the presented theoretical frame, the criteria for selecting the interviewees was based on the

concept of RSG. In order to comply with the research goals, information collected in 22 interviews with different RSG were transcribed, and then analyzed: 5 interviews with Lemon executives (General Director, Operations Manager, IT Manager, Products Manager and Marketing Manager), 3 interviews with the Ceará Network Integrator (Ceará State Regional Manager, Fortaleza Kiosk Consultant and Ceará Country Hybrid Consultant), 4 interviews with CB Owner (3 Hybrid and 1 Kiosk), 5 interviews with CB employees (2 Hybrid and 3 Kiosk), and 5 interviews with Clients. All interviews with the Lemon executives were held from September 2008 and Febreuary 2009 in the city of Barueri (State of São Paulo, Lemon's headquarters), and all other interviews were held in the cities of Fortaleza, Caucaia and Itapipoca (State of Ceará). The State of Ceará was considered eligible and adequate for the objectives of this research because Ceará is in the Brazilian Northeast region, one of the poorest in Brazil, and because two other relevant initiatives for delivering financial services to lower income population are being conducted, the Crediamigo Program (Banco do Nordeste do Brasil) and the Palmas Communitarian Program (Banco do Brasil), thus where the competition is more evident.

Interviewees inside Banco Lemon were selected because they pertained to the so-called *dominant coalition*; the dominant coalition is composed by individuals that drive the organizational goals. Cyert and March (1963) proposed the organizational goals are determined by the negotiation process between members of the dominant coalition who have certain interests and try to reach them. Each coalition searches for or destroys alliances, and each negotiated agreement provides a guide or a constraint for the organization. The dominant coalition concept also guarantees both individuals and groups have influences (though not equal) over the organizational movements, and, frequently, no group has the major control. Some interest conflicts may be solved through negotiation, others may not, and, eventually, the dominant coalition changes over time. This strategy was particularly

useful in this case, since it was not possible to interview all employees at Banco Lemon due to lack of time and resources.

Interviewees in the Network Integrator were selected by convenience according to the snowball strategy (Atkinson and Flint, 2001), which consists of identifying an initial group of respondents who are then used to refer to other potential respondents. Such a strategy was useful in this case, since at the beginning of the data collection process in Fortaleza we had a detailed understanding of Banco Lemon's view of the operation (supply side) but very few information about other RSG (supply and demand sides); on the other hand, reaching those RSG was difficult at first, because peoplespecially in lower income communitieswere very skeptical to strangers.

Step 4: Semi-structured interviews, based on the theoretical framework, seeking to gather enough data to answer part of the research questions. All interviewees were stimulated to report relevant experiences and attitudes attained to the questions under investigation (Walker, 1988). The data analysis was based on data coding (Miles and Huberman, 1994) guided by our framework, and based on detailed examination of interviews transcription. Thus, excerpts were classified into different categories, as follows: RSG, technological frames, negotiation process, and technology-in-practice.

Results and Analysis

Technological frames refer to assumptions, expectations and interests of individuals in the adoption, implementation and use of a specific methodology. Instead of individuals, this study focus on assumptions, expectations and interests of social groups, more precisely, to RSG, as previously defined.

Although Table 3 has already presented RSG and their technological frames, Table 4 reveals strengths, weaknesses, opportunities and threats for each RSG regarding the Lemon case, as follows.

Table 4 – Strengths, weaknesses, opportunities and threats for each RSG regarding the Lemon case

	Strengths	Weaknesses	Opportunities	Threats
Government				Governmental incentives to microcredit offer hindrances to Lemon's interest rates (competition with governmental banks).
Banco Lemon	Strong infra-structure: software and hardware are compatible with credit offerings without any additional cost.	Credit offerings are riskier and .less profitable than bill payment transactional services. Banco Lemon has virtually no ways of capturing money, thus, the only way to have money to lend to clients is to capture it in the market (other banks).	Learn with previous experience may lead to better understand on the lower income population financial behavior.	It is difficult to find a lower income person (before and after offering the credit): no reliable information about address, telephone number, and other personal documents.
Network integrators		Higher operational costs to train CB Kiosk employees, and to set a larger and safer place inside the CB Kiosk outlet (more aggregated value to sales).		
CB Hybrid, Kiosk and Store owners	Clients tend to be loyal to a CB retail establishment (not for financial reasons), and credit can be easily offered to them.	Higher operational costs to CB, because CB process design is due to simple activities. Model lacks a methodology.	Owners may have a good knowledge of potential credit takers, because most of times both belong to the same community.	Ways of paying the CB owner for a credit transaction is not well defined.
CB Hybrid and Kiosk employees		There are no incentives for employees to offer credit: no additional payment for this offering and possibly facing a more exigent client.	Employees may have a good knowledge of potential credit takers, because most of times both belong to the same community.	Business model is totally dependent on employees (front-end).
Clients	Convenience when compared to bank branches: closer, less	Higher interest rates when compared to other market		First alternatives to take credit include family, relatives,

	frightening, wider working hours, employees usually belong to the community.	alternatives.		friends and colleagues. Competitors such as CrediAmigo are very well-known and most of those who have already taken microcredit have good experiences.

Negotiation process points at how different RSG influence the adoption, implementation and use of a specific technology. In order to gain a better understanding of the negotiation process that took place during the practice of credit initiatives at Banco Lemon, interviewees were stimulated to explain their perceptions on: (1) main challenges related to the implementation of credit offering; (2) resources and skills that explain the implementation of credit offering; and (3) resources and skills that should be mobilized in order to improve credit offering.

Both consumer- and business-oriented clients had a great demand for credit (cultural reasonsthe consumption societymay explain part of this) and Lemon executives found the CB a viable alternative to meet this demand.

Even if clients perceived CB as a viable and interesting place to get credit, there were still difficulties to be overcome by the supply side.

As previously shown, credit initiatives took place in the second period in time, ranging from 2005 to 2008: credit at request, credit at indication, and credit at selection (see Table 5). These initiatives were only possible due to good financial results from the first phase, which was based on transactional bill payment services.

Table 5 – Credit type, its main feature and challenge, resources and skills needed to implement and further improvements

Credit type	Main feature	Main challenge	Resources and skills	Improvements
At request	Client asks for credit in the retail shop to pay his buying grand total.	To deliver an answer (either accepting or denying) quickly, because the client is	Current software, hardware and telecommunications provide fast and	CB owners and employees should be further trained (both operationally and

		inside the shop waiting for it.	accurate communication between the POS device and the bank datacenters. Scoring methodology is both fast and attained to organizational goals (profits).	commercially) to foster this kind of credit offering, trying to bind the retail to the credit loan.
At indication	CB owner or employee identifies potential "good" clients who may need credit. Credit at request (the previous case) can be understood as a particular case of credit at indication.	To distinguish "good clients" from "good friends" (conflict of interests).	Current software, hardware and telecommunications provide fast and accurate communication between the POS device and the bank datacenters. Scoring methodology is both fast and attained to organizational goals (profits).	CB owners and employees should be given worthy financial incentives so that identification of "good clients" does not compete with the identification of "good friends". Indication should be considered in the scoring phase: theoretically, indicated individuals show fewer risks.
At selection	Lemon searches for potential "good" clients based on a telephone bill payment behavior scoring.	To gain scale with this methodology.	Current datamining process quickly creates lists of telephone bill payers.	Telephone bill payers not necessarily need credit. Telephone bill not necessarily is paid by the owner of the line. Try to integrate CB owners and employees to contact the payers and to investigate whether he wishes a credit loan.

CB owners and employees had particular interest in credit at request not because the credit was an appealing and profitable product or service for them; but it could promote an increase in sales: the larger the credit, the easier it is for the client to purchase. However, training proved to be demanding, time consuming and costly: Network Integrators were not well prepared to train CB owners and employees, mainly because products and methodology were not fully consolidated.

Additionally, because the credit sale is more demanding and time consuming, whenever a client asked for credit, immense queues were formed in the outlets: people

standing in a queue could both pay bills and/or ask for credit. Thus, the credit offering was muddling the transactional bill payment service, which was the most important in terms of sustainable profits for all RSG.

CB owners and employees expressed little interest in credit at indication because they had little or no worthy financial incentives to foster this initiative. On the other hand, Lemon had several problems regarding this, first to make an official credit contract (because most of lower income population has little or no formal documents related to identification, address and/or telephone numbers), and then to repayment defaults (because selection was problematic and locating debtors is a somewhat difficult task).

Almost the same problems could be identified in the credit at selection initiatives: lack of formal documentation and difficulty to locate and charge debtors.

At the same time, it is important to highlight that Lemon did not count on steady and bulky deposits; thus, the only way of capturing money to lend was in other banks at market interest rates. The spread to cover all cost (including those with risks) produced higher rates when compared to competitors.

Even if on the one hand there was an unmet demand for credit and the CB was perceived as a viable means to deliver it, on the other hand, the supply side faced several difficulties to deliver this credit: higher interest rates, poor CB training and incentives, and lack of a separate infra-structure for credit and for payment. As a result, one may conclude that the credit venture at Banco Lemon was interrupted and this happens since 2008.

Banco Lemon's credit offering initiatives can be divided into three different periods in time: during the first phase (from 2002 to 2005), there were no credit initiatives but the results achieved with the transactional bill payment services created the basis for the credit venture; during the second phase (from 2005 to 2008), some credit initiatives were put into practice, whose results will be further investigated, and during the third phase (since 2008),

there was a backspace movement toward phase 1 (no credit initiatives). It can thus be understood that credit initiatives at Lemon ended in failure (it proved to be a non-profitable initiative).

However, this failure can also be understood as a non-intended consequence for all RSG, since both demand and supply sides wanted the credit offering in the practice. What then caused the credit venture at Lemon not to be developed by leaps and bounds?

The following reasons are perceived as being those more material and relevant to explain the failure of the credit activities at Lemon:

- Higher interest rates than competitors;
- Lack of worthy incentives to CB owners and employees; and
- Under exploitation of the large network.

Results of the credit offering. As a result of the previous failure reasons, the credit business and also others products such as the (micro) savings, (micro) insurances and simplified bank accounts did not work out at Lemon and a backspace movement toward to transactional bill payment services took place.

> "*When we had products other than bill payment, our profitability certainly did not improve, I can tell you this for sure; mainly for the CB owner, but for us as well.*" [CheguePague Ceará Regional Manager, about the failure in products other than the transactional bill payment services]

A summary that describes those reasons at length is present in Table 6, as follows.

Table 6 – Cause, consequences and results for the failure of the credit activities

Cause	Consequence	Result
Lemon lacks mechanisms to capture client deposits (virtually no savings).	Lemon needs to capture money in the marketplace (with other banks).	Spread between capturing money in the marketplace and lending it to lower income population produces non-competitive higher interest rates.
Governmental initiatives (public owned banks with profit-, but	Competition in the credit marketplace tends to be unfair	Better alternatives for credit in the marketplace when compared to those

mainly, social-oriented goals), governmental subsidies (BNDES[10]) and occasionally other programs of microcredit offer money at attractive interest rates.	regarding private owned banks with no governmental subsidies.	offered by Lemon.
Credit offerings depend on CB owners and employees. They must be trained and given worthy incentives.	Both CB owners and employees had little incentive to promote credit products and services: both financially (variable payment) and logistically (lack space and ambience). Training was costly to CB Kiosk employees (Network Integrators)	CB owners and employees tend to refocus on transactional bill payment services in detriment of credit offerings, because it is simpler, has fewer risks, and requires virtually no training.
Credit sale is more elaborated and customized. Credit services are more difficult to understand and to sell; thus, these employees needed more training.	Higher operational costs, because credit sale consumed more time and other resources (training and repayment default risks, for instance) than transactional operations.	A large network, Lemon's strongest feature, was of little value when it comes to a customized approach.
Lower income population has no or little formal information on basic identification documents, address, and telephone number, just to cite some.	Lemon had difficulties to formalize documentation on credit loans and to charge debtors for repayments.	Credit approvals were limited and default rates were high.

It is also interesting to note these results that led to the stop in the delivery of credit by Lemon were unexpected because the potential of credit demand by clients is enormous.

> "*If we had access to cheaper money, credit would be certainly a viable product. In Ceará people like to ask for money… they do like to ask for money, but they have a money grubber culture… and, because of that, they are known to be good payers. Liquidity is really good.*"
>
> [ChequePague Ceará Country Consultant, about the viability of credit business in Ceará]

On the other hand, interviewees presented a set of possible avenues for improvement for the credit venture at Lemon. Those alternatives are presented at length in Table 7.

Table 7 – Reasons for credit failure and possible avenues for improvement

Reasons for credit failure	Possible avenues for improvements
Higher interest rates than competitors	Stimulate the selling of other products and services with capturing purposes, such as (micro) savings, and (micro) insurances. Engage CB owners and employees in these initiatives, offering them financial incentives. Negotiate more attractive interest rates with the Government, instead of capturing money to lend in the marketplace (with other banks).
Lack of worthy incentives to CB owners and employees	Provide appropriate training to CB owners and employees on credit products and services, and mainly give financial incentives to both CB

[10] BNDES stands for *Banco Nacional do Desenvolvimento* (National Bank for Development) and it is a governmental institution that aims at development projects and lends money at attractive interest rates for business-oriented concerns.

	owners and employees (variable payments on credit loan and repayments). Integrate CB owners and employees to the business model and share risks with them: indicating and rejecting candidates for credit. Try to bind the credit loan to the commercial retail.
Under exploitation of the large network	Promote credit offering to the CBs owners themselves in the first place. Use previous experience to understand cause-and-effect relationships between credit offerings and payments or defaults.

Although some avenues for improvements are possible to be implemented soon, as previously shown, it is hard to believe that Banco Lemon has breath to do so, mainly for two reasons: first, because it is worthless to implement only one or two of the proposed improvements, instead, it is necessary to implement all of them simultaneously, and the results do not necessarily lead to the success in the credit business; second, some of these improvements depend on third parties, such as de Government itself, thus, results, again, do not necessarily lead to the success.

Besides, it is remarkable that the credit business compete with the transactional bill payment services in terms of scarce resources. The latter is far beyond simpler, faster, easier to understand, and, the most important feature is that it proved to sustain the operation and generated profits for all parties involved in this operation.

Final considerations

This research tried to better understand the relationship between correspondent banking and microfinance, and deeply explored a case of particular interest in this context: Banco Lemon. The main goal of this research, thus, was the understanding of how the current ICT-based model of CB can be successfully used to deliver financial services to lower income population.

The results obtained from the proposed analysis can be summarized as follows: led by bill collection, transactional services expanded rapidly and proved to be profitable for Banco Lemon. This growth has resulted in relational service initiatives, led by credit granting. From

the bank's viewpoint, the results cannot be considered stimulating and show the difficulties in working with services that require relationship with low-income clients. However, Banco Lemon acknowledges that the inability to pursue profitable business with the low-income population is a general phenomenon and whoever succeeds first will have a large competitive advantage. It also acknowledges that this solution will greatly depend on technology and business model, and in these two aspects, they certainly are ahead of the competition.

The methodological framework allowed us to conclude that the negotiation process is strongly influenced by certain relevant social groups. Banco Lemon defines which technology is going to be implemented and how it must be done. The network integrators compound another group with relative power in the negotiation process, as they are in charge of the commercial relationships with the retails. This way, we can conclude that the technology-in-practice is strongly determined under the power of Banco Lemon, who determines the technology to be adopted and owns part of its network integrators as well.

On the other hand, a closer glimpse to another relevant social groupclientssay their interests are being only partially satisfied, and they have not much influence in determining the technology to be adopted. This negotiation process seems to face intricate hindrances: Banco Lemon is not gathering good harvest while clients hardly demand services other than bill payment.

From now on, many alliances could be formed depending on the context where social relevant groups are involved. The content of technology changes very fast and interferes in the context that has now changed by the new circumstances caused by the financial crisis. As a result, the interests of the involved relevant social groups also change, interfering reciprocally in the context and the content.

The main contribution of this paper is a richer discussion on the social and technological forces that have contribute to the development of Banco Lemon from a channel

for providing basic transaction services to the poor to a more complex set of services. Banco Lemon has become one of the four largest banks competing in the banking correspondents market (in just 7 years). As the business grows, it attracts social groups with diverse interests, objectives and technological frames.

Future researches may include other in-depth case study case at Banco do Brasil because of the similarities to Banco Lemon: large banking correspondents' network and focus on the poor. Nevertheless, other cases of the use of CB to deliver financial services may also be considered: the Crediamigo Program (Banco do Nordeste do Brasil), the Postal Bank (Bradesco), Lotéricos (Caixa Econômica Federal) among some others. These case studies, once performed, will provide possibilities of cross-cases comparison (Patton, 2002) and perhaps a higher level of generalization.

Finally, we do not believe in a Brazilian model of banking correspondents delivering inclusive financial services. Instead, there might be three or four models, and Banco Lemon is surely one of them. Thus, studying this case is of great interest for the research in this subject.

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