

# Looking for Strategies to Re-launch Retail Banking: The Mobile Payment Ecosystem

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**Abstract**— The mobile payments service includes all the initiatives that enable payments or money transfer by cellular phone, regardless of the means of payment used (credit-debit-prepaid cards, phone bill) and the technology involved (remote payment via internet, contactless payments at a POS or direct remittance by cellphones). The industry of mobile payments today is still in a start-up phase and the nature and extend of approaches to these innovations are not uniform around the world and inside the same countries. The way and the intensity it will be widespread in the market is going to depend on the ecosystems that would be designed and developed. As for this purpose, the scope of the article is first to highlight the main variables enabling or limiting its diffusion in the market. And secondly it is to highlight why retail banks should enter the mobile ecosystem mainly to regain their key role in the market as they had in the past.

**Index Terms**— business ecosystem, communications technology, mobile device, mobile payment, payment, retail banking.

## I. INTRODUCTION

obile payments generally refer to payment services operated Munder financial regulation and performed from or via mobile device. In a wider definition, mobile payments is concerned with all the transactions that enable payments or money transfers by mobile devices, independently from the paying-tools (cards, wallet, etc.) or technologies used. The definition of mobile payment actually includes two different paradigms of payments. They are:

- mobile remote payment, which includes all the services that enable, in remote, the payment of a good or a service by phone, using a wireless network. It is concerned with payments that start using a mobile communication device regardless of location of the payer or the payee. In this case, physical presence at a Point Of Sale (POS) is not required. Mobile remote payments can be classified into different types (*person-to-person* or *person-to-business*), according to the usage. The technologies involved in the mobile remote payment are the Over The Air Programming

technology – that refers to various methods of distributing software updates and configuration

settings for mobile devices. It can also refer to technologies used for distance communication between the Mobile Network Operator and the SIM Card - and the payment tools can be *textual* (SMS, QR Code, etc.), *phone-based* (Interactive Voice Response, Drop Call, et.), *web-based* (WAP, i-Mode, etc.) *SIM-based* or *advanced* (Apple, Android, Windows). In regard to this paradigm of payment it is possible develop all the applications for mobile commerce as well as mobile money transfer;

- mobile proximity payment, that includes the payments whereby a *physical proximity* is required between the buyer and the seller. In this case payments are enabled by mobile phones, using short-range transmission technologies. In this case, physical presence at a POS is required in order to make a payment and the Near Field Communication (NFC) technology can be a possible common standard for mobile proximity transactions, even though there are some other approaches available in the market. An important facilitator in this regard will be the diffusion of contactless POS, that assumes merchant cooperation and costs efficiency as well as the location of the *secure element*, that is where secure card credential are stored (SIM, SD or Micro SD cards, embedded chips, remote servers).

This new field promises to create opportunities for the single organizations and the market itself; this is because the ubiquity and convenience of mobile phone.

For businesses this also means to reach vast numbers of new customers – banked and unbanked - and also provide better services to existing customers.

Driven by technological and market changes organizations compete and cooperate, and bring firms to experiment alternative coordination mechanisms that lead to intermediate or hybrid forms of organization. Although research has made important contributions towards the understanding of businesses, several authors look for inspiration in biological science, electing “the theory of ecosystems” and “the evolutionary theory” as the main biological research fields affecting social and economic science that provide innovative perspective and theoretical models. Even if any comparison between economic and ecologic realms has to be careful,

biological ecosystems seem to provide a powerful metaphor for understanding a business that works as a network.

The first approach to business ecosystem is due to Moore (1993) who argued that a firm is not just a member of a single industry but a part of a business ecosystem that crosses a variety of industries. In a business ecosystem, firms' capabilities co-evolve around new innovations that characterise the ecosystem itself, as the locus around which species co-evolve by exploring innovative evolutionary path.

In the business literature a "business ecosystem" is an economic community supported by a foundation of interacting organizations and individuals - the organisms of the business world -. They hold own specific characteristics and interests, bound together by different mutual relationships as a collective whole. Species within ecosystems are related and interact with each other as much as firms play a specific role in a business network. The fate of each living organism in the ecosystem is related to the fate of the others; cooperation and competition, as much as in a business network, are considered ecosystem characterizing phenomena. And this is the case for the mobile payment ecosystem.

This economic community produces goods and services of value to customers, who are themselves members of the ecosystem. The members organisms also include suppliers, lead producers, competitors and other stakeholders (who,) over time, (...) coevolve their capabilities and roles"<sup>[1]</sup>.

Mobile money ecosystems are thus the networks of organizations and individuals that must be in place for mobile money services to take root, proliferate, and go to scale. They span a wide range of different players including mobile network operators (MNO) – who are the providers of the wireless communication services through the SIM cards; banks; different agents; retailers; utilities; employers; regulators; consumers - who makes the payment. There is also a set of different payment institutions – who play the role of issuers as they perform authentication and authorization of the transaction parties – and those who are acquirers and act as intermediaries between the issuer and the merchant.

Depending on the different interactions in the way the payment can take place, there are several different models of ecosystem that the players can experience: MNO centric model, Bank centric model, Collaboration model (Bank-MNO, MNO collaborative), OTT model (i.e. Google, Square).

Before moving to the role retail banks can play in the mobile payment ecosystem, we have to consider that in the present situation banks are suffering of being struggle to maintain their competitiveness in the face of severe external challenges. Massive debt loads are threatening the global economy, while stringent regulations put in place as a result of the financial crisis of 2008 are staunching traditional revenue streams. Customers, still distrustful of the industry, and above all they have become increasingly accepting of nonbank alternatives, and social media is giving them an opportunity to publicly explore them. More than ever, retail banks must strive to create stronger bonds with their customers and this is getting more and more an imperative for them to consider. In particular, retail banks need to look for and develop

diversified customer experiences as to stand out in today's increasingly competitive marketplace. Therefore banks should prioritize the movement toward a more focused approach as a long-term goal, executed in sync with efforts to improve customer loyalty. And this is the case we intend the mobile payment, as a way to improve the overall customer experience.

In this article first we want to approach the mobile payment ecosystem from the regulatory point of view together with some of the technological aspects concerning the mobile value chain. Secondly we describe some transformation regarding the mobile payment ecosystems at an international level. Finally we discuss the opportunity for retail banks to play a key role in understanding now and how to shape positive experience through mobile, in order to position themselves better for the future. This is because, in the recent past, the growing attractiveness of the retail banking sector reflected the availability of a pool of relatively cheap and more stable funds for banks. While in the UK, commercial banks also enjoyed a dominant retail market presence because of their tight control over the payments system.

We think that the new payment environment can be the way a retail bank gets the chance to regain its role in the market. And look for a renovated market positioning throughout the opportunity offered by the mobile value chain ecosystem.

## II. THE REGULATORY FRAMEWORK AND THE MOBILE VALUE CHAIN

The regulatory frame in Europe in which mobile payments is working, refers to two main issues. The first one is related to the European Commission "E-Money Directive (EMD)" (2009-110/EC) [<sup>2</sup>], that aims to encourage new entrants to the market, such as mobile operators, by imposing lower capital requirements and a lighter regulatory regime for small "e-money issuers" (EMIs). The Directive also intends to enable new, innovative and secure electronic money services and promote a real and effective competition between all market participants. Its main purpose is to offer more benefits to consumers, businesses and the wider European economy. Finally the Directive intended to modernise EU rules on electronic money within the requirements for payment institutions presented in the Payment Services Directive (2007/64/EC).

A second issue is about the mobile payment ecosystem, as it is presented in the second edition of the "White Paper on Mobile Payments" (February 7, 2012), that represents the decision-making and coordination body of the European banking industry in relation with payments, whose main task is the development of SEPA (Single Euro Payment Area). In this paper is outlined the idea towards a common framework in which the cooperation among the different service providers in the payment industry and players within the mobile ecosystem can be developed.

The White Paper identifies two important authorization procedures: tap and go (used for small amount payments, also

<sup>1</sup> J. F. Moore, *The death of competition: leaderships and strategy in the era of ecosystems*, New York, NY-Harper Collins, p.26.

<sup>2</sup> [http://ec.europa.eu/internal\\_market/payments/emoney/index\\_en.htm](http://ec.europa.eu/internal_market/payments/emoney/index_en.htm)

called micro payments, conventionally less than 15-25 euro), where no PIN is required to end the transaction, and double tap (used for higher amount payments, conventionally more than 15-25 euro), where a PIN code is required.

As far it is concerned the mobile value chain, it is interesting to analyze its entire structure. If we consider the seller-buyer relationship it is possible that we can identify four main phases (pre sell, commercial, payment and after sales) that can be completed both on a mobile basis as well as non-mobile basis (See Fig. I). In the pre sell phase the goal is to develop an effective commercial proposition, that can be achieved sending a message to the mobile device (SMS, web based, app based, etc.; for this see Table I) exploiting, for example, the geo-location systems, that represent one of the major features introduced by last generation mobile devices. The second step, the commercial phase, is concerned with the purchase of the good or service. In this phase the buying experience can take place both “in-store” (physical or virtual) or “on-line” (web based or app based). Then in the third phase (the m-payment) takes place the core activity for a bank along the value chain. And finally there is a last phase (after sales) in which the customer is getting different benefits such as the one of collecting points into his/her loyalty cards or benefiting of discounted prices related to couponing programs. But the new technologies can also address customers with more personalized and targeted marketing campaigns.

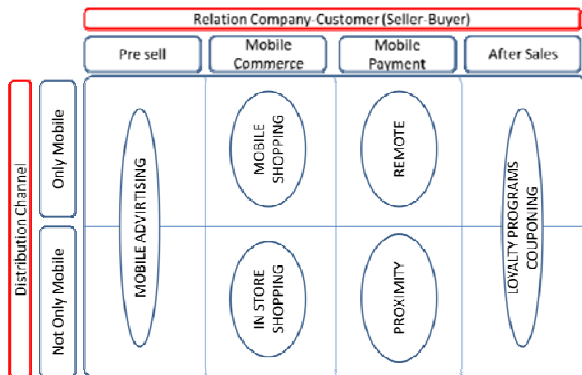


Fig. I. The mobile value chain

**Text Messaging**

- one-way alerts
- two-way information
- two-way transactions

**Browser**

- device agnostic
- designed for the mobile environment
- more functionality than text messaging
- less robust user interface than apps

**Apps**

- designed for specific device(s)
- more robust user interface than a browser
- allow camera access for remote deposit capture.

Table I. I. Different communication methods. Source: Journal of Payments Strategy & Systems Vol. 5 No. 4, 2012, pp. 360–372

III. INTERNATIONAL PERSPECTIVES AND PRACTICES

At present there is a noticeable transformation taking place in the world of payments; the nature and extension of this transformation is not uniform across all countries and this opens the path to different innovative uses of technology, fresh ideas and different business models. Infact there are many different approaches, such as the followings: in markets where banking infrastructures are well developed and there are high volumes of electronic payments can leverage on the available infrastructures, rather than starting from scratch. And the main issues is to gain momentum in terms of convenience and utility to end users, minimise transaction costs as well as reach a mitigation of payment risks. Where markets have poor or fragmented access to banking services or those with less robust payment infrastructures, then the main issue is to introduce new methods, using the wide reach and availability of mobile telephony and the cast array of inexpensive mobile handsets, in order to provide financial services at affordable costs. But in each payment the key issue is to get interoperability and acceptance of the new money substitute. This is because the payment industry is principally based on economic of scales as on the acceptance and the processing phase. But as outlined before the two different contexts form the base for the development of specific ecosystem configurations in which the key role can be played by different actors of the mobile value chain.

At present there are different ecosystems already experimented in the market, such as the OTT (Over-The-Top) services, like Skype and WhatsApp; Telco Collaborative; Telco-Bank Collaborative; Telco first mover, etc.

These ecosystems differ each other because of the different position each stakeholder covers in the mobile value chain and also for the dominant relevance in terms of commercial agreements signed.

Globally, the number of communication devices enabling advanced mobile payment applications is rapidly growing. In 2011, around 87 per cent of the world citizens owned a mobile phone. Global smartphone penetration reached 34 per cent in the same year<sup>[3]</sup>. In the next 4-5 years, sales of smartphones are expected to accelerate by more than 50 per cent a year. The mobile devices purchases rates are impressive: the first billion took over 20 years, the last billion only 15 months<sup>[4]</sup>.

People are already using mobile transactions in a big scale, 212 million of users are up to make 171,5 billion dollar in the expected transaction value this year.

By a detailed analysis of worldwide mobile payment applications, we extracted an overview of the main examples of mobile payments (See Table II).

<sup>3</sup> <http://www.siliconrepublic.com/digital-life/item/26074-smartphone-penetration-keep>

<sup>4</sup> <http://mobithinking.com/mobile-marketing-tools/latest-mobile-stats/b>

Country	Technology	Product Name	Notes to high light
USA	Nfc Cand remote Checkout	Google Wallet	Mobile Wallet with a wide range of additional app services.
	Remote Checkout	Square	Mobile System with a strong focus on remote and geolocalization services.
	NFC	Isis	A telco collaborative ecosystem.
USA/Other Countries	Remote Checkout	Paypal	The first move and pioneer in the online payments. No NFC investments. Proximity QR code based.
Italy	SMA and Drop call	BeeMove	Merchant consortium with a lean infrastructure.
Spain	NFC	Setgies	NFC startup with more or less 4.000 merchants.
Scandinavian Countries	Remote Checkout	iZettle	The Square model applied in Scandinavian countries.
France	NFC	Cityzi	A well-coordinated telco collaborative ecosystem.
Turkey	NFC and Remote Checkout	Turkcell	Telco mover.
Brazil	NFC and Remote Checkout	Wanda	Mobile wallet.
China	SMA	YeePay	Original payment tool in which the user can connect the mobile number to a bankcard. And with it you can purchase digital goods and send SMS.
	Remote Payment	SmartPay	Mobile wallet.

Table II. Examples of mobile payment systems around the world.

Among them we can consider that the USA represent one of the most active markets in the implementation of these payments systems, with four main examples that are: Google Wallet, characterized by its brand strengths and reputation, can reach an impressive number of potential final users, covering all the value chain in its remote and proximity payment offer (although with a main focus on the second one). Square is a very advanced system, focused mainly on remote payments, with the advantage of lack of hardware constrains and characterized by a remarkable joint venture with Starbucks. Paypal is considered to be the first mover in Usa in virtual payments and the most widespread, being the official payment system of E-Bay since its birth. Isis represents the answer of MNO to enter in this business, considering that the previous main players didn't sign with them any specific agreements and didn't include directly any MNO in their ecosystem.

In European countries there are some other examples, focused mainly in the proximity application side; but just few of them are reaching a significant response. Cityzi, a French example can represent a developed and integrated ecosystem. It works as a proximity system based on NFC technology started from an open Telco-collaborative model that has been extended to the main banks, retailers and transport players with an interesting coordination activity that involved all the players.

#### IV. STRATEGIC REASONS FOR A RETAIL BANK TO BECOME A PRINCIPAL ACTOR IN THE MOBILE PAYMENT ECOSYSTEM

The analysis made so far brings to some conclusions which could be used as managerial recommendations for the retail

banking industry. There are many reasons because a retail bank ought not to miss the opportunity of being more involved in the mobile payments ecosystems. Through decades of change, the business of banking has grown increasingly beyond its former industrial approach and must now focus on serving retail customers differently from the past. Whether the industry can succeed depends on how willing it is to become something else. While history tells us that, at the beginning, retail banking was predominantly supply-led and was able to set its own course, the industry quickly became customer-driven with varying degrees of customer intimacy. With such variations, it is in this latter stage of the past 15 years or so, that retail banking essentially lost its way. So many miscellaneous strategies were developed with various objectives to reach, tools to develop, and channels to pursue in an attempt to cope with it all, that the industry lost hold of any strategy to meet the real needs of retail bank customers.

While mobile money is in its emerging stages, it is rapidly moving toward consolidation and growth. Industry leaders are clear that what is needed now is sustained action: experimentation and innovation by firms with differentiated mobile business models and by government in the regulatory frameworks to make them possible. In developing a differentiate frameworks of mobile payment business models, each actor involved has always to keep the perspective of the customer. This is more and more relevant as you act in a retail business arena, where the key attribute is location. In this respect the mobile business main objective is ubiquity and this fits perfectly with the need for retail banks to stay closer to their customers, and regain the customer's perception of being useful and able to deliver new value to them.

Mobile payment is also useful to retail banks as users of consumer banks often come with no bookkeeping experience, no balance sheets, no controllers, no advisors, no economic education – and above all, pursuing very different goals. If this is the situation, then payment services through mobile devices are certainly the way a retail bank can come back to be a solution provider, as every service company ought to be.

The key to success will be a thorough reassessment of the unconscious or half-forgotten convictions – the rules, the values, the goals – that have influenced banking throughout its history and are destined to dominate the industry's future. Then we have to remember that in old times bankers were born to facilitate payments and develop commerce. The new ecosystems will take them back to basics throughout a modern relationship concept of doing banking. And also retail banks will gain the opportunity to get in touch with a huge market share of customers on a daily base, as at present customers contacts show a sharpening decline.

Mobile payment is more than an app for customers, it is a new way to influence their entire consumer behavior and offer them a true usefulness experience in both small and bigger payments.

The importance of mobile payments will increase more and more as the innovation in offering unique value to customers throughout the diffusion of innovative ways to shop will be developed in the market. An interesting example is the one occurred in South Korea, where the UK-based retailer Tesco has a grocery delivery business called Home Plus, the chain plastered the walls of subway stations with life-size, high-

resolution photos of products on store shelves, complete with QR codes that can be scanned with a smartphone. This allows consumers to shop and arrange for delivery while waiting for their trains. Within three months of the system's rollout, the number of registered users of Home Plus had increased by 76 per cent, and revenues had increased by 130 per cent.

Retail banks need to play a major role in the ecosystem apart that for being a payment processor. The evolution is near to come and retail banks should benefit from the opportunity to shift from payment-only configuration ecosystem to a more value-added configuration framework in which they can offer advices, consumer loans, etc.

Another important reason why a retail bank should gain a central position in the mobile payment ecosystem, it is that of leveraging on its trust and credibility in front of the customers and in the market. It is well known that retail banking is a business based on trust and confidence between the bank and its customers. Loyalty infect is an important issue banks are facing nowadays.

On the aspect of trust it is interesting to mention the well-known example of mobile payment in Kenya (M-PESA). In that case the issue of trust has resulted of great importance and it infers an important concern. It has to be known that this service has been put in place by Safaricom ([www.safaricom.co.ke](http://www.safaricom.co.ke)), that is one of the leading integrated communications companies in Africa with over 17 million subscribers in a country of 36 million people. According to a recent study on the examination of trust in mobile banking transactions, also the M-PESA mobile payment experience has been analyzed. And it is resulted to be important because many customers do not trust the agents – who sell them this service – but the data gathered suggested that customers use the service because they trust Safaricom. This means that the trust relations between the customers and Safaricom are much stronger than those between the customers and agents. This could be because the company has a history in Kenya. It has provided mobile services since 1997. As such, many of the M-PESA customers have been using Safaricom as their mobile service provider before the M-PESA service was introduced. They have thus had more exposure to the mobile service operator and more time to assess the quality of the institutional arrangements. These assessments result to be vital for the emergence of institutional trust.

Therefore trust is a vital element of social relations, and as seen, was shaping the trajectory of the M-PESA application. The preliminary findings, as it is outlined, suggested that many of the customers trust the M-PESA system because it is affiliated with Safaricom. This means that institutional trust relations between the customers and the mobile service provider are strong. While interpersonal trust relations are weak as customers do not trust the agents within the M-PESA network.

The above example underlines the importance for a retail bank to come back being central in payment services industry as not to lose the opportunity to be central in everyday needs, as well. This is extremely important because there is an increasing sentiment and acceptance of nonbank alternatives, and this happens not only in countries similar the one mentioned.

In our markets retail banks have been working for long time with customers who have been able to appreciate their services and their long lasting presence, as well as their solvency and stability as far as it is concerned the payment services.

In the context of mobile banking transactions such trust is important because customers are handing over their money that should be held in a virtual account managed by other participants to the ecosystem, as Safaricom does in Kenya. As such, they must have faith that the institution will protect such deposits and make them available to the customer when needed.

In conclusion we are strongly convinced that a retail bank should consider this opportunity. And as in any mobile ecosystem the backbone is based on the network of touch points through which customers do their commerce and e-commerce, retail banks can be a privilege actor. This is because they hold a strong position through which they enable many other players to get access both the banks' merchant base and the customer base. And also because of this they can be active promoters for a stronger cooperation and co-evolution of any single actor in the mobile payment ecosystem.

Infect, if in our markets we consider the Operator Centric Models, we find out that even if they hold a large customer base and SIM card infrastructures, they bear a lack of merchants base. And in addition to that, trust is also a relevant issue - as M-PESA teaches us - in this context because money is managed together with relevant personal information. Infect one of the main benefit to be central in the mobile payment ecosystem is that of having access and control of customers information. This also implies the possibility to manage huge amounts of data (big data analysis) to enlarge the customer base with a bargain power towards other actors involved in the ecosystem.

Processing mobile payments, only, cannot be considered a value added activity. In our opinion, the real added value factor of the ecosystem lies in information and consumers data. The exploitation of them will be useful for targeted offer of enhanced banking services. In the long-term perspective, the spread of payment systems alternative to cash will improve the bank database in terms of spending behaviors, shifting the focus from the payment service to a wider range of products with a higher value added information. Concluding, in our opinion, there are good arguments favoring the banking industry as a key role playing service provider in the mobile payments ecosystem. Banks' comparative advantage is also in the reliability and familiarity of payment services that have been processing for long time in the bank history background.

As a final conclusion we think that a further research question will focus on how promoting a faster deployment of mobile payment ecosystems and the way banks can leverage on the existing acquiring and issuing skills that among many retail banks already exist, as far as it is concerned the credit card market.

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