Social networks, game-changer for e-money? Will social networks (e-)monetise the payments industry?

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ABSTRACT

The idea that electronic money (e-money) could change the way in which payments are made has been around for more than a decade. Despite high initial expectations, e-money has largely remained a hype and has not reached the mass consumer market. The recent boom in social networks, connecting vast networks of customers across the globe, all seeking to 'e-monetise' their customer base, could provide new momentum for the uptake of e-money. This paper outlines the main barriers that have limited the uptake of e-money to date. The complex ecosystem lacking global standards and requiring enhanced collaboration between multiple stakeholders including financial institutions, card schemes, mobile network operators, service providers and merchants, and the sometimes fragmented regulatory regimes, all have to be addressed for e-money to be successful. This paper describes why we may be at the forefront of a breakthrough in the e-money market, driven by social networks. In particular, the uptake of electronic commerce, the boom of social networks connecting families across the globe and creating opportunities for money remittance, the active presence of merchants on social networks to advertise and sell goods online. But, next to social networks, global technology enterprises are also looking into the potential of e-money services and intend to transform the e-money and wider payments industry landscape. Consequently, traditional providers should prepare for this new environment.

Keywords: social networks, electronic money, mobile money, electronic payments, money remittance, electronic wallets

INTRODUCTION

While wholesale payments are executed predominantly electronically, in the retail segment cash, in addition to credit and

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debit cards, remains largely the most popular way for retail consumers to pay their bills. The idea that electronic money, hereafter referred to as e-money, the equivalent of cash, provided by banks or non-bank payment providers, could change the way in which payments are made has been around for more than a decade.[1] Despite a number of successful experiences, mainly in emerging economies, such as M-PESA[2] in Kenya, e-money has largely remained a hype and has not yet reached the mass consumer market.

The recent emergence of social networks such as Facebook, Twitter and Sina Weibo, all seeking to 'monetise' their customer base, could provide new momentum for a massive take-off of e-money.

Social networks, which connect vast networks of customers across the globe, could bring the innovation necessary to transform the payment industry considerably. Recent announcements by Facebook[3] and Twitter[4] show that they are preparing to take their share of the payment industry. They have the potential to bring e-money to everybody's smartphone and allow payment for goods and services online as well as in physical stores.

WHAT IS E-MONEY?

Continuous technical developments and innovations make it difficult to describe accurately what e-money is. Furthermore, the term 'e-money' is often used to refer to a wide variety of electronic payment schemes.

In general, e-money can be defined as monetary value stored in an electronic device that can be used to make payments.[5] In a more restrictive sense, e-money is defined as 'electronically stored monetary value as represented by a claim on the issuer that is issued on receipt of funds for the purpose of making payment transactions and which is accepted by a natural or legal person other than the e-money issuer'.[6] This definition of e-money covers a number of different concepts and services, including card, internet and mobile-centric electronic wallets.

There are a number of key elements in this definition: e-money is a liability of the issuer, is generally prepaid, and is a multi-purpose means of payment. E-money, is different from currency, as it is a claim on an issuer and, in general, an obligation of a private company rather than of the central bank.[7] This element of liability is also distinct from decentralised virtual currency such as bitcoin, where there is no form of liability or claim on an issuer.[8] Another features of e-money is that the total value of e-money is usually mirrored in a bank account, to ensure that, if the provider service were to fail, users could recover their funds stored in their accounts. In addition, in contrast to bank deposits, e-money accounts can traditionally not benefit from any interest.[9] Furthermore, e-money services can be provided by banks and by non-bank service providers such as mobile telecom operators, transport operators and social networks.

Electronic wallets, mobile money, mPOS

Electronic wallet or e-wallet

An e-wallet, or electronic purse, is probably the most common type of e-money to date, where users store money on a physical payment card or on a payment account on the internet for making payments in both the physical and online world.

Mobile wallet

An e-money account, whereby the electronic equivalent of cash is primarily stored on or accessed through (and used by means of) a mobile device, can be defined as a mobile wallet.[10]

Mobile money

The definition of 'mobile money' varies across the industry, as it covers a wide range of overlapping applications. In general, mobile money can be defined as a service that uses the mobile phone to transfer money and make payments.[11]

The wide adoption of mobile phones among consumers in some emerging markets, with no or very limited access to basic financial services such as a bank account, have resulted in the emergence of new innovative mobile money services.[12] GSMA,[13] the trade association for mobile network operators, describes mobile money for unbanked consumers, defining it as a service that allows the mobile phone to transfer money and make payments to the underserved. One of the key characteristics is that the service relies heavily on a network of transactional points outside bank branches that makes it accessible to unbanked and underbanked people. In addition, customers should be able to use the service without having been previously banked.

Mobile remote or mobile contactless?

Another distinction made in mobile money services is the way in which funds are exchanged for the purpose of payment transactions. A distinction is made between mobile contactless and mobile remote. Mobile remote payments[14] can be defined as payments where the transaction is conducted over telecommunication networks such as GSM or internet, and can be made independently of the payer's location or its equipment. Mobile contactless payments[15] are defined as payments where the payer and payee (and their respective equipment) are in the same location and communicate directly with each other using contactless radio technologies, such as near field communication (NFC), Bluetooth or infrared for data transfer.

Mobile point of sale

A mobile point of sale (mPOS)[16] refers to using a consumer mobile device to facilitate payments and enable acceptance of payment instruments. An mPOS refers to the acceptance infrastructure for merchants necessary for accepting payment transactions independently from the way in which the transaction itself is executed.

UNACHIEVED PROMISES

A survey from the Bank of International Settlement (BIS) in 2001 projected 'Electronic money to take over from physical cash for most if not all small-value payments' and 'evoked considerable interest both among the public and the various authorities concerned including central banks'.[17] But, despite high initial expectations, e-money has obtained only limited market adoption in both the USA and Europe. The main reasons why e-money has not found its way to the mass market has been the existence of well-functioning payment solutions, including credit and debit cards as well as credit transfers offering limited incentives for new innovations by existing players. Furthermore, the complexity of the payments landscape, with many financial institutions, card networks, mobile network operators, hardware and software providers, and other stakeholders, results in a considerable challenges to build successful e-money solutions.[18]

One player, PayPal,[19] the payment service of the popular e-commerce platform eBay,[20] has turned out to be the only e-money scheme that has obtained a global reach. Owing to the success of e-commerce in recent years, its service has been growing exponentially.[21]

In a number of markets, local successes have been launched by mobile telecommunications and transportation operators. In some Asian countries such as Japan[22] and Korea,[23] e-money services and

mobile-based payment services have obtained considerable market adoption. In Japan, 24 per cent of households hold e-money in stored-value cards or through server-based online services. Approximately 150 million stored-value cards, which are used mainly for low-value payment transactions, were in circulation in 2011.[24] The main driving factors for the relative success of e-money in Japan have been cultural preferences for paying with cash over paying with credit cards, the absence of debit card schemes and a specific business climate whereby non-bank providers, such as rail networks and mobile operators, offer additional convenience to consumers through e-money services.[25]

In other emerging regions, where a large number of the population have little or no access to traditional financial services, the wide dispersion of mobile phones has given rise to mobile money services for 'unbanked' consumers. In these regions, alternative providers, mainly mobile network operators, have stepped in, providing consumers with the possibility of accepting, storing and exchanging funds and paying electronically by means of mobile phones. While the first successes were observed in sub-Saharan Africa, mobile money services have also expanded in Latin America and Asia in recent years, contributing to the financial inclusion of the unbanked.[26] For example, in 2013, new mobile money services were rolled out in Bolivia, Brazil, Egypt, Ethiopia, Guyana, Jamaica, Tajikistan, Togo and Vietnam.[27]

Examples of mobile money and financial inclusion

Kenya

One of the most successful e-money initiatives, M-PESA,[28] was deployed by Safaricom, Kenya's largest mobile operator. Since its launch in 2007, the system's nearly 15 million users have been able to use their mobile phones to deposit cash into their accounts, using as a point of deposit any of the 28,000 shops around the country that participate in the initiative. Among the main favourable factors to the broad market adoption in Kenya have been the relatively large number of unbanked consumers and the high adoption of mobile phones. M-PESA has further expanded to other markets, including Tanzania and South Africa.

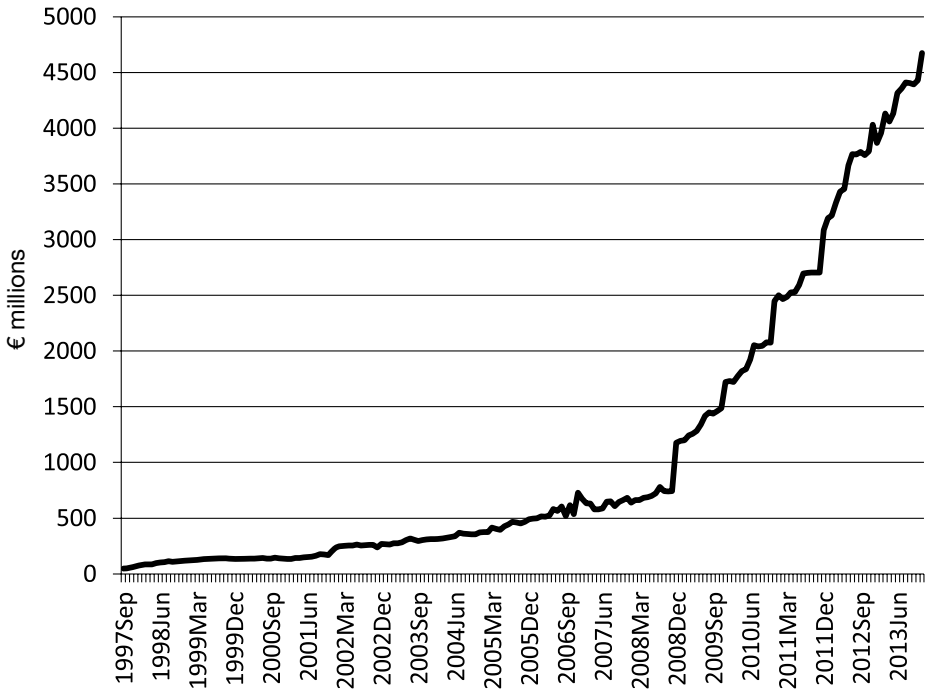
Pakistan

Easypaisa,[29] a mobile money service launched in Pakistan through a partnership between Telenor Pakistan and Tameer Microfinance Bank, is another example of new innovations serving the needs of unbanked consumers. The service allows subscribers to use their mobile phones for payment transactions, and subscribers can deposit or withdraw cash in Easypaisa shops throughout Pakistan. Since its launch in 2009, it has acquired more than five million customers. The large number of unbanked consumers in Pakistan combined with the deployment of a mobile money dealer network contributed to its success.

Paraguay

With one of the lowest rates of banking penetration in Latin America (only 22 per cent of adults in Paraguay have an account at a formal financial institution), Paraguay has a large potential for mobile money services.[30] Two service providers, Tigo and Personal, have launched mobile money services, Tigo Money and Billetera Personal, respectively, providing the ability to store funds in an e-wallet, conduct peer-to-peer payments and process remittances. These innovations offer unbanked consumers the ability to control their financial lives better and increase their access to formal financial services.[31] In 2014, Tigo Money was reported as having

Figure 1 Evolution of outstanding e-money in the EU 1999–2013 (end of period, in millions of euro)



Source: ECB, 2014, outstanding amount of e-money, dataset BSI. M.U2.N. A.LE0.A.1.Z5.0000.Z01.E

approximately 150,000 clients paying bills with its service, and Billetera Personal was projected as having 23,124 bank-backed Billetera Personal accounts and another 62,796 non-bank e-wallet clients following the introduction of a new electronic payments regulation in 2014.[32]

E-money in Europe

In Europe, there has been relative growth in e-money since 2009, starting from a very low base, as shown in Figure 1, reaching 4.5 billion of total outstanding e-money at the end of 2013. It has not yet lived up to its full potential, and did not become a digital replacement for cash as was expected in the early 2000s.[33] Even though a number of innovative e-money service providers have entered the market, non-financial institutions have not been able to conquer the mass consumer market of e-money.[34] According to data from the European Central Bank (ECB),[35] non-financial institutions issuing e-money had approximately 750 million of outstanding e-money at the end of 2013. Furthermore, some initial e-money schemes, such as 'proton' in Belgium[36] or the 'GeldKarte' in Germany, were not such a success stories, as the relative share of these services remains small[37] and the traditional e-money purse seems to be doomed. Newer services, such as contactless payments,[38] seem on the way to bypassing the electronic wallet.

POTENTIAL BENEFITS OF E-MONEY

Despite the limited success, there are various potential benefits of e-money and e-wallets for consumers and stakeholders in the e-money and wider payments industry.

For consumers, e-money could be a very convenient way to pay safely and cost-efficiently without the need to have cash in hand or a debit or credit card. When widely accepted, e-money should not be limited to purchasing goods online, but could also be a way of paying for goods and services in physical stores. Furthermore, e-money could create added value and additional convenience through new innovations. For example, it could allow the transfer of money peer-to-peer between consumers and enable new services such as sharing bills electronically. In emerging economies, e-money could be a driver of financial inclusion, providing non-banked consumers with access to basic financial services, enabling the acceptance and storing of funds and paying bills electronically.

For merchants, e-money services have the potential to reduce costs and risks related to receiving cash payments. To attract merchants, it can be expected that the fees charged by new market entrants for accepting e-money would be lower than the existing charges by debit and credit cards schemes. Furthermore, e-money systems could be beneficial for merchants if they allowed the acceptance of e-money without the need to acquire new POS devices associated with the existing card schemes.

For potential new e-money service providers such as social networks, this business could be a new way of monetising their existing base of customers and merchants. Given their global reach, even a very limited margin on individual transactions could result in considerable revenue streams. In addition, payments data could be a new valuable source of data for social networks (or their competitors) to obtain information about the payment habits of their customers, which could be of use to advertisers.

THE E-MONEY REGULATORY REGIME

Across the globe, e-money has received distinct treatment by regulators. In general, the regulatory frameworks for e-money remain complex, with distinct applicable laws and regulation (including consumer protection, anti-money laundering, prudential requirements and data protection legislation), and have difficulty keeping up with continuous technological innovations. The regulatory intervention varies from no specific regulation in the USA up to a fully calibrated regulatory regime in the EU.

In the USA to date, there is no single regulatory framework or regulatory authority governing e-money. A report by the Mobile Payments Industry Workgroup (MPIW),[39] convened by the Federal Reserve Banks of Boston and Atlanta showed that five different regulatory agencies[40] have some oversight responsibilities for mobile payments, which also applies to e-money and e-wallet solutions. According to the report, the regulatory agencies' main focus has been the need for consumer protection, the security and efficiency of the payments system, data security and privacy, and accessibility and how to deal with non-bank alternative providers. To date, the regulatory agencies in the USA have considered further monitoring and clarification on how the emerging innovations fall within the scope of existing legislation, and increased coordination across agencies might be necessary. Recently the Consumer Financial Protection Bureau (CFPB) proposed making a rule[41] on prepaid accounts which, when effectively implemented, could integrate e-money into the USA bank regulatory regime.[42]

In addition to a wide number of regulatory agencies, the USA regulatory framework is characterised by the requirement for non-bank e-money operators, depend-

ing on their involvement in the payment transaction, to obtain a money transmitter licence to provide money transfer services or payment instruments in any of the US states that regulate this business activity.

In the EU, a specific regulatory regime[43] for e-money was designed in 2000 with the intention to facilitate access by non-credit institutions to the business of e-money issuance. The main goal was to create legal certainty for e-money, build confidence by safeguarding the interests of consumers and businesses, and encourage new market entrants and so greater competition. These rules created a significantly lighter regime for e-money institutions compared with traditional credit institutions. The regime includes prudential requirements aimed to protect consumers and ensure safe operations.

Potential market participants considered the European e-money regime disproportionate to the risks of the activity and the number of licences attributed did not meet expectations.[44] Following the limited developments of the e-money industry, the regulatory framework was revised, and new rules entered into force in June 2011,[45] introducing a more proportionate regulatory regime, more in line with the risks of the activity of e-money. These revised rules allow e-money institutions to conduct other services such as operating mobile telecommunication services more flexibly,[46] which was considered a catalyst for innovation and development of new e-money services.

Also in other jurisdictions where e-money has emerged, regulatory regimes have been set. In Japan, where e-money services are a popular alternative to credit and debit card payments, the Prepaid Card Law, which covers the main rules relating to e-money, provides a simple framework that applies equally to both bank and non-bank issuers and which contains a prudential framework considered proportional to the size of the issuer.[47] A new regulatory regime governing mobile money was also adopted in Kenya in August 2014,[48] covering consumer protection and prudential operations, and promoting collaboration and interoperability between market participants. Following the uptake in sub-Saharan countries, recent regulatory changes have been introduced in a number of countries in Latin America, including Bolivia, Peru Brazil and Paraguay,[49] enabling non-banks to issue e-money.[50] In some other Latin American countries, such as Mexico,[51] provisions have been introduced allowing non-banks to acquire limited banking licences to issue payments instruments.

FRAGMENTATION OF MOBILE PAYMENTS INITIATIVES CONTINUES

While various developments in the e-money and payments industry are ongoing, in the USA, the EU and the rest of the world, the e-money and payments landscape remains characterised by fragmentation.

A report[52] by the Federal Reserve Bank of Boston and Atlanta witnessed considerable changes in the US mobile payments landscape in the period 2011–2013. In particular, the report observed 'increasing collaborative efforts across a diverse set of industry stakeholders, increased channel and technology convergence, participation by new non-bank entrants, and continuous technological innovation and experimentation'. Collaboration between mobile network operators (MNOs), banks, card networks and technology companies has resulted in pilot mobile payment solutions. For example, some large MNOs founded a joint venture with several financial institutions and a card network to create a mobile wallet solution Isis, recently rebranded Softcard,[53] based on NFC[54] technology. In addition, some alternative

payment providers have developed solutions and applications that leverage a range of technologies, such as cloud,[55] Quick Response (QR) codes[56] and geofencing.[57]

One of the observed blocking factors has been the slow adoption of new services by merchants, owing to concerns on the business case for the implementation of mobile payment solutions. In the USA, the slow rollout of the EMV standard[58] and NFC technology enabled POS solutions, combined with the introduction of some new low-cost alternatives such as QR code scanning, have created more market fragmentation.

In Europe, despite the latest revision of the rules on e-money, European-wide mobile-enabled e-money schemes have failed to emerge (with the exception of PayPal) and the market remains highly fragmented. A recent report on the new initiatives on mobile payments in the Single Euro Payments Area (SEPA) from the European Payments Council (EPC)[59] demonstrates that the existing market situation is widely diverse in terms of geographical scope, technological solutions, level of collaboration in the payment ecosystem and size of participating merchant networks.

The EPC reports a total of 33 distinct initiatives emerging in the period 2013–2014 in Europe, covering 14 different countries. The geographical scope of all initiatives is limited to national jurisdictions and, for some initiatives, the pilot phase is further limited to a city. The types of initiatives surpass e-money services and are divided into four areas: mobile contactless payments[60] (13 initiatives); mobile remote payments[61] (eight initiatives); mobile wallet[62] (five initiatives); and mPOS[63] (five initiatives). Most initiatives are based on partnerships between one or more players in the mobile payment ecosystem, including MNOs, payment providers, banks and retailers. The market potential of the services is determined by the number of potential subscribers, which is limited at national level to customers of the collaborating partners, including banks, MNOs, payment service provider or participating retailers. Another key feature is the acceptance of the service by merchants, which for the reported initiatives is also limited in scope to national borders, and varies from pilots with a few thousand of participants to 300,000 POS.

Also in emerging economies where the uptake of mobile money services is expanding, the types of services and ecosystems remain widely dispersed. GSMA reported 294 distinct services in 84 countries at the end of 2013 and 113 planned deployments.[64] The type of services offered varies across service providers. For example, 85 per cent of the mobile money service providers allow for peer-to-peer transfers, bill payments and airtime top-up.[65] Fewer providers allow for bulk payments, merchant payments or international money remittance.[66] Furthermore, interoperability between distinct mobile money services providers, allowing consumer to exchange funds between customers of distinct operators, remains a challenge to the further market uptake of mobile money services.[67]

These findings in the USA, the EU and emerging economies, demonstrate that, while progress is being made, e-money and mobile-enabled payment services remain fragmented, in their early stage of development. They will most likely require considerable time and further collaboration among ecosystem partners to achieve considerable market adoption. An easy to use mobile enabled service, based on common standards or solutions, accepted by a vast number of merchants and available to customers worldwide or throughout large jurisdictions seem not yet to be materialising.

WHY ARE SOCIAL NETWORKS DIFFERENT?

The reports that global social networks, such as Facebook, Twitter, Sina Weibo and others, are experimenting with e-money and electronic payment raises new expectations for the e-money industry. It remains to be seen how the weaknesses and obstacles observed both in the USA and the EU can be overcome. In particular, the complexity of collaboration across multiple stakeholders in the eco-system, the lack of common solutions and standards, the diverging regulatory requirements, the limitations in geographical scope, the cost and efficiency concerns of merchants, and privacy and security concerns among consumers should be addressed.

There are various reasons to believe that we are at the forefront of a breakthrough in the e-money market driven by social networks.

Favourable market trends

In both advanced and emerging economies, some market trends[68] are raising the potential for social networks in the e-money and wider payments industry. In advanced economies, consumers are becoming increasingly familiar with online purchasing of goods and services. While such transactions are currently mainly executed by cards or credit transfers, they could easily be migrated to social networks by offering peer-to-peer payment transactions on their platforms.

Many social networks have started experimenting with micropayments of low value for purchasing virtual goods and services or for rewarding loyal customers. Social networks have developed their own virtual currencies (such as Facebook credits, Weibo coins, Habbo diamonds), which are obtained by exchanging real money. Consumer can use the virtual currency in social gaming applications or purchasing virtual goods or charity contributions.[69] This has familiarised existing users of social networks with the idea of purchasing real life goods and services or conducting peer-to-peer transactions through social networks.

Money remittance

In an increasingly globalised world, money remittance, a market mostly operated by banks and other financial payment providers such as Western Union,[70] remains an important way[71] to transfer money across countries subject to relatively high transaction fees[72] Social networks such as Facebook and Twitter, which already today connect consumers throughout the globe, could facilitate foreign workers to send funds to family members in their home nations through their platforms at lower fees. A recent report of the World Bank Development Research Group[73] estimated that over 90 per cent of money remittance transfers are sent between family members who are also connected on social media. In emerging economies where the share of unbanked consumers remains important,[74] social networks are particularly growing their market presence.[75] Consequently, they could add to their services low-cost solutions to serve the unbanked.

To be successful, social networks would need to overcome some challenges that are linked to the 'branchless' remittance transfers business model.[76] These challenges include obtaining senders' trust to hand over funds to social networks, complying with regulatory requirements on anti-money laundering and 'Know Your Customer' regulation, and offering recipients convenient ways to obtain and use the funds. In particular, social networks would need to provide a solution for recipients to pick up their funds. This could be facilitated through third-party agent networks, bank accounts, mobile network top-ups or

Table 1: Selective overview of social networks and e-money and payments initiatives

Enterprise	*Core business*	*Existing or potential initiatives*	*Potential users/size*
Facebook	Social network	• e-wallet • peer-to-peer payments transactions • online payment transactions	1.28 billion monthly active users
Twitter	Social network	• peer-to-peer payment transactions	625 million active users
Sina Weibo[79]	Social microblogging site in mainland China	• peer-to-peer payment transactions (weibopay)	148 million monthly active users
RenRen[80]	Social network in mainland China	• peer-to-peer payment transactions	178 million monthly active users
Habbo[81]	Social network aimed at teenagers	• e-money (credits, duckets and diamonds)	11 million monthly active users (2013)

Source: www. Facebook.com, www.twitter.com, reuters.com, www.sulake.com

by developing their own e-wallets, providing receivers of funds with connectivity to retailers.[77]

Global reachable mobile enabled customer base

The largest social networks often have a global active customer base. For example, as shown in Table 1, large social networks, such as Facebook, Twitter and Sina Weibo, have reported 1.28 billion, 625 million and 148 million monthly active users, respectively,[78] connected to their services through the internet and increasingly through smartphones. Consequently, social networks have the potential quickly and cost-effectively to provide customers throughout the globe with an e-wallet service and enable them to pay for goods and services through their e-money platforms wherever they go with their smartphones.

A new application or a mere update of an existing one could be sufficient to upgrade millions of users to the new services. As a step in that direction, the social media giant Facebook announced that it would extend the functionality of its messenger service,[82] allowing peer-to-peer payments earning fees on money transfers.[83]

Trusted and globally loved brand

Social networks such as Facebook and Twitter figure at 20th and 71st, respectively, on the list of most valuable global brands in 2014.[84] That brings them close to the existing dominant market participants in the payments industry, such as the main cards schemes Visa (7th) and MasterCard (18th), American Express (24th), well beyond any other operator in the e-money industry, with the exception of PayPal, whose former parent company eBay is listed 61st in the list of most valuable global brands. As a consequence of being globally loved brands, social networks could offer confidence to consumers not only to share their personal data, but also trust their funds and pay for the goods and services they need.

Privacy issues and data security on social media have been a major concern,[85] which could make users reluctant to trust money to social networks. A recent study[86] showed that only 14 per cent of consumers trust Facebook for their personal

data. Therefore, it will be important for social networks to enhance their efforts to create trust in their services in order to gain market adoption for e-money services.[87] Privacy concerns could limit market adoption in advanced economies where many alternatives are available. Such concerns might be of less relevance in emerging markets with a high number of unbanked and few alternatives.

Global merchant reach

Owing to the global reach of customers, an e-wallet and related payment service allows merchants not only to advertise on social networks, but also to sell goods and services and receive payments. As an illustration of this market potential, there are already 30 million small businesses[88] promoting and selling their goods and services on Facebook. An e-wallet provides new incentives for merchants to join social networks (in so far they are not yet active on social media) and also accept e-money for the goods and services they provide. Additionally, social networks, already connecting millions of users, have the technological capabilities to provide a cost-effective and secure e-money platform for merchants necessary to deal with a high flow of e-money transactions.

Cloud-based technological efficiencies

New e-money services will most likely be fully cloud-and web-based, avoiding any new hardware interfaces for both merchants and consumers. This will allow sharing costs over global transactions and enabling social networks to enter the market by offering competitive prices compared with the existing card schemes.

Linking bricks and mortar with the online world

The use of an e-wallet should not necessarily be limited to the online world. The extensive use of social networks through mobile devices may result in the development and design of applications and services that allow the e-wallet to be used in physical stores.

THE ROAD AHEAD: IT IS NOT ONLY SOCIAL NETWORKS

Given the interest of social networks in offering e-money solutions and payments, it seems likely that a second chance will be given to e-money. Social networks' global scope of operations offers the necessary potential and network effects to make a successful e-wallet and payment service with a worldwide coverage. The large online customer base, the existing network of advertisers and knowhow in the design of easy to use online services provides the opportunity for designing attractive e-wallet services for the mass market.

Social networks are not the only market players with the intrinsic capacity to transform the e-money industry. Technology giants such as Google and Apple have launched their respective services. In addition, newly created payment services providers such as Square, and global e-Commerce undertakings such as Amazon and Alibaba are well positioned to bring innovation to the e-money or wider payments market.

Google

Google, which has also its own social network, Google+, has launched the Google Wallet,[89] which allows users to store debit cards, credit cards, loyalty cards and gift cards, as well as redeeming sales promotions on their mobile phone. Launched in May 2013, Google announced that its e-wallet would allow for peer-to-peer payment transactions to all contacts of their e-mail service Gmail.[90]

The service connects a user's Gmail account with an e-wallet, and allows

money to be sent to Gmail contacts free or for a small fee if the transfer is made by a linked bank account or from a credit card, respectively.[91] This enables, Google to capture its users' bank account and credit card information. As 66.5 per cent of Gmail users access their accounts online, the e-wallet is a true mobile payment platform.[92] Combined with Google's Android operating system for mobile devices, which represents 80 per cent of all sold smartphones in 2014,[93] it has a very wide user base for its e-wallet.

Using its already popular Gmail service, which has a global reach of 425 million customers,[94] its e-wallet is a mobile payment solution with global market potential. Until now the Google Wallet has not achieved its market potential. In addition to the lack of devices supporting the service and the reluctance of merchants and telecom operators, Google's advertising business model has been an important drawback.[95] The requirement for participating banks to provide users' purchase information, which would enable Google to refine its advertising business, created privacy concerns and made issuing banks reluctant to participate in the system.

Apple

Apple has made a late but decisive entry into the digital payments industry with Apple Pay. By collaborating with the main card schemes (Visa, MasterCard and American Express) and the majority of large US banks, Apple made important allies by creating a service complementary to the traditional market players.[96]

With the focus on security and privacy, combined with an easy to use customer experience, it has strong assets to convince consumers. In contrast to the Google Wallet, Apple will not collect what consumers buy with Apple Pay nor any payment-related information. Furthermore, by the use of tokenisation, whereby credit card numbers are replaced with a randomly generated numbers, Apple has created one of the most secure and fraud-proof mobile payment mechanisms.[97] In addition, the 'touch-ID' fingerprint sensor provides Apple Pay users with an additional security feature for ID authentication protecting payment information.[98]

In the US market, Apple Pay can benefit from the requirement for merchants to upgrade their POS terminals to the EMV technology accepting NFC by mid-2015, creating an incentive for merchant acceptance.

To drive adoption, Apple should entail to upgrade its existing user base of more than 575 million users with registered credit cards in Apple's iTunes applications.[99] Furthermore, with Passbook,[100] an application introduced in September 2012, which allows users to store event tickets, loyalty cards and coupons on their phone, Apple has gained experience with an electronic wallet platform. Passbook has now become a cornerstone of Apple Pay where customers will store their credit card information. Since the launch of Passbook, Apple has established partnerships with a wide range of third parties, including airlines, railway enterprises and hotels, which have linked their own systems with Passbook.[101] These existing partnerships will certainly facilitate the roll-out of Apple Pay.

The main constraint to become a widely adopted service is the fact that Apple Pay is limited to the closed Apple eco-system and the latest Apple devices,[102] which limits the uptake to consumers with the purchasing power to own a high-end mobile device. This will remain an entry barrier limiting the uptake of the service in emerging markets. Apple Pay is currently geographically limited to the USA and should still prove itself in its traditional home market as well as in the rest of the world.

Amazon

Amazon, one of the world largest online retailers, is also interested in grasping its share from the online and mobile payments industry and has recently made an important step in this direction. With 237 million active users[103] and annual sales of US$74.45bn in 2013,[104] an own, fast and convenient e-money or e-payments scheme could enhance its overall customer experience and at the same time create new sources of revenue.

As part of this strategy, Amazon obtained a licence as an e-money institution in Luxembourg.[105] On 9th June, 2014, its e-payments intentions were unveiled[106] with the launch of its payment platform 'Amazon Payments',[107] which allows for paying online at merchants other than Amazon.

For their online purchases, consumers can access multiple merchants with one single registration at Amazon.[108] They can save time at checkout, as they will not need to re-enter their credit card and shipment data for each purchase, which will be securely stored in the Amazon account.

For merchants,[109] the service offers easy integration as well as Amazon's security and user data. With this new servicing offer, available through desktops and mobile devices, Amazon has become a direct competitor of PayPal, which offers a similar third-party service.

Alipay

Alipay,[110] the payments platform of China's Alibaba,[111] an online commerce site, which recently went public,[112] is another new emerging challenger in the payments industry. With 300 million registered users and 100 million mobile users, and having processed US$150bn in mobile transactions in 2013, it is the largest mobile payments provider in the world.[113]

In addition, Alipay's business is not limited to its mother company's e-commerce platform, but also serves other clients. Alibaba only represents 37.6 per cent of all payments processed by Alipay on a total of US$519bn payments processed in 2013.[114] Furthermore, its Alipay Wallet service provides a wide range of solutions, including mobile payment transactions, peer-to-peer payments and paying in physical POS. For example the Alipay Wallet enables payments through sound wave technology or QR barcodes[115] in physical POS. Furthermore, its peer-to-peer functionality allows bill sharing among its users.

In addition, Alipay is expanding to other services,[116] which are traditionally in the hands of banks. The Alipay Wallet is also a tool to be used as a current account or to invest in Alibaba's financial product Yu'ebao,[117] a money-market fund. The fund, where consumers are expected to earn higher yields compared with Chinese bank deposits, has raised 250 billion yuan and became China's largest investment fund in January 2014.[118]

While Alipay is a huge success story in its home markets in China and Asia, it remains to be seen whether it will also conquer the rest of the world.

Square

A new market entrant that aims to transform the payments industry is Square Inc.,[119] a merchant services aggregator and mobile payments company based in San Francisco, California.

Square Register, its main service, allows individuals and merchants in the USA, Canada and Japan to accept offline debit and credit cards, transforming smartphone or tablet computers into cash registers. Consumers can pay by swiping their card through the Square Reader, a small device that is plugged into a smartphone or tablet. In addition, another alternative payment service, Square Cash,[120] allows users to execute free peer-to-peer payment transactions based on a debit card.

Furthermore, Square is also experimenting with its own wallet service Square Wallet.[121]

Square, which was projected to process US$30bn payment transactions in 2014,[122] was valued at US$5bn beginning in 2014. While Square does not have a powerful brand compared with Facebook, Google or Apple, its innovative products could make it an important challenger, cannibalising the existing payments industry. Furthermore, it was reported that both Google and Apple were considering acquiring Square,[123] which could transform it into a world class competitor, even if they would not make it a stand-alone entity.

OUTLOOK AND WAY FORWARD

Whether it will be social networks such as Twitter or Facebook, or software and hardware providers such as Google or Apple, or still someone else to drive the uptake of e-money is hard to predict. Google and Amazon have already made the leap into this market, Apple has, with the recent launch of Apply Pay, introduced a considerable challenger, and social networks are preparing to take the same road.

The mere fact that global, powerful technology enterprises are looking into the potential of e-wallet services offers prospects and will definitely shake and transform the payments industry landscape in the coming years. Existing e-money issuers and payment service providers as well as banks should rethink their business model, as they could be easily cornered by breakthrough innovative e-wallet services designed and rolled out globally by these new powerful technology giants.

The recent hiring of David Markus,[124] PayPal's former chief executive, to lead the extension of Facebook's messaging services to payments should be a wake-up call for all competitors: social networks are serious about putting their (e-)monetising strategy into practice.

AUTHOR'S NOTE

This paper reflects the views only of the author and does not represent the opinion of the European Commission.

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