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Advanced Payments Report 2014

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For more information contact:
Samee Zafar, Director, T: +44(0) 207 283 1114 • E: samee.zafar@edgardunn.com
Jane Cloninger, Director, T: +415 442 0545 • E: jane.cloninger@edgardunn.com

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Contacts

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Edgar, Dunn & Company
Management Consultants

Samee Zafar
Director, EDC London
Samee.zafar@edgardunn.com
+44 (0)78 250 275 26
www.edgardunn.com

Jane Cloninger
Director, EDC San Francisco
Jane.cloninger@edgardunn.com
+415 442 0454

Gregoire Toussaint
Manager, EDC Paris
Gregoire.toussaint@edgardunn.com
+336 7026 9925

Payments CARDS & MOBILE
Payments Industry Intelligence

Alex Rolfe
Managing Director
alex@paymentscm.com
+44 (0) 1263 711800
www.paymentscardsandmobile.com

Published January 2014

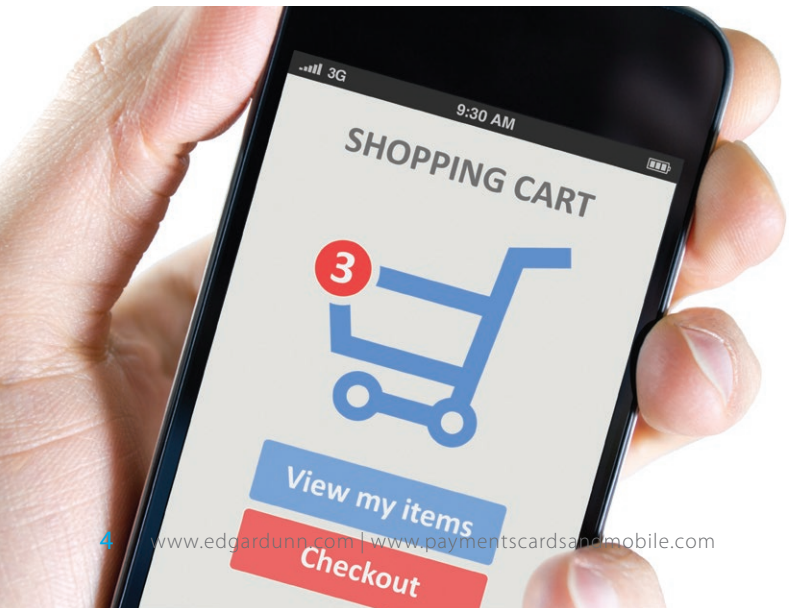
American Express Introduction

Mobile commerce – more changes?

Mike Matan, Head of American Express Global Network Business

More than a decade has passed since we first began talking about the promise of mobile commerce, and we have seen an untold number of innovative form factors and solutions introduced by both new and established players in the payments industry. For all of these companies, the singular, driving focus has been on addressing change – the changing industry, technologies, business paradigms and customer needs. But what else has to change in order for mobile commerce to really take off?

The truth is, not that much. Of course, new ideas and technologies will continue to be introduced and change the marketplace, and the pace of innovation is not going to stop, not by any means. But in order for mobile commerce to move forward, we need to go back to the basics when it comes to building long-lasting customer relationships and driving consumer adoption.



Essentially, consumers seek a few fundamental things when it comes to taking up new products and services: added-value, convenience and simplicity. This is no different with mobile commerce. As the providers of these new products and services, we have to make sure we are meeting a genuine customer need and offering real value, whether it is through the delivery of relevant, customised offers or new, streamlined services. And while we are also focused on providing the highest level of security with these new types of payments, we have to be equally committed to ensuring the user experience is simple and convenient.

Having a deep understanding of the customer experience and creating a frictionless user environment are critical to accelerating the adoption of mobile payments.

For example, in the near-term, we are likely to see faster growth in online mobile payments as consumers have found that moving their online shopping from a desktop to a mobile device has been relatively simple and straightforward. The next step is making the online checkout experience on a mobile phone even easier, while continuing to ensure the security of the transaction.

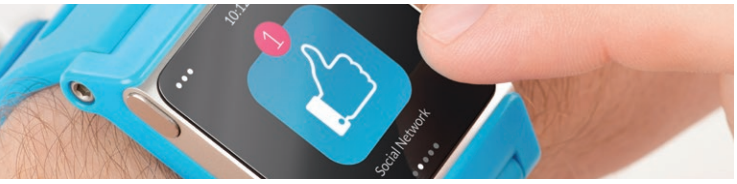
Ultimately, in order for mobile commerce to advance and become ubiquitous, both traditional and non-traditional companies in the payments space will have to collaborate and work together to create a global, interoperable mobile payments ecosystem. By establishing common standards and protocols, we will be able to establish a cohesive payments environment for consumers and create a viable and sustainable mobile commerce industry for the future.

Life, karma, whatever

"You have to trust in something – your gut, destiny, life, karma, whatever. This approach has never let me down, and it has made all the difference in my life."

Steve Jobs, the greatest innovator of recent times, relied on gut instinct and not on market research. Surveys, research studies and focus groups were not for him; these were not what made Apple products capture the world's imagination.

"It's hard for consumers to tell you what they want when they've never seen anything remotely like it."



Industry Opinion

The Advanced Payments Survey (APS) is not a consumer survey. It does not seek to forecast the future nor does it predict consumer behaviour. Instead, it asks questions about the future from those involved in the payments industry. Survey respondents include bankers, card company executives, technology specialists, consultants, entrepreneurs and innovators.

It reflects industry opinion and showcases what industry professionals are thinking, how industry opinions are changing, which emerging payment services are promising and which have lost their magic. It involves deep knowledge of payment technologies, analytical thinking and even some quantitative decision making. But Steve Jobs may be right here too – perhaps the responses come from the gut, destiny, life, karma or whatever.

Slow Start

Today, many markets in the world have already reached saturation in mobile subscriber numbers. For some, mobile penetration has gone beyond saturation, and there are more mobile connections than people. But despite the enormous potential, promising pilots, and encouraging forecasts, mobile payments have not yet gained popularity except in a few markets primarily in the developing world.

The slow starts, the technology trials, investor anxiety and confusion over the business models, are characteristics common to most early stage markets. In the early days of internet commerce, technology pundits waxed lyrical about its enormous potential and how it would make redundant the existing methods of making payments. But despite the enormous early stage investments, it took many years for internet commerce to reach critical mass.

This is because we often overlook, that besides technology, the most important elements of successful innovation are convenience and ease of use – things that Steve Jobs never lost sight of – famously demanding of his product teams that no task should take more than three clicks.

Mobile technology is growing at an enormous rate and gaining momentum, but it will take time before it becomes conveniently accessible to consumers and some more before it reaches critical mass. One does not need to be a technology pundit to predict that one day, in the not too distant future, there will be affordable availability of fast reliable mobile internet in most places on the globe. Connected to it will be consumer electronic devices – not just mobile phones and computers – but household appliances, motor vehicles and even clothes and personal accessories – the so called "wearables," things we use in our daily lives. The term "mobile" will become redundant because connectivity preferences will default from fixed to mobile. That will usher a whole new era in digital commerce.

2. Key contenders

When John and Patrick Collison, two brothers in their early twenties, founded Stripe – a start-up meant to make it easy for developers to accept payments they asked themselves, "how hard could it be?"

This lack of knowledge or youthful naiveté may have been a blessing, thought Peter Thiel, one of the founders of PayPal and an investor in Stripe. "If you knew how hard it is to break into these industries, you wouldn't even try," Thiel was quoted as saying in a recent Fortune magazine article.

No wonder, in our survey, start-ups appear at the bottom of the list of entities most likely to drive mobile payments forward in the near term. Payments is one of those "hard to break into" industries that Thiel alluded to. Competing against incumbents in payments is extremely difficult. But start-ups that overcome that barrier and climb to unprecedented heights are signified by the category at the top of the survey chart: Established Alternative Players.

PayPal is the most prominent member of this category, and its continued focus on mobile is bearing fruit with consumers. A contributing factor to PayPal's success on the mobile front is that consumer interaction whether online or over a laptop, tablet or smart phone is relatively similar, and customers don't need to learn something new when paying with a mobile device from their PayPal account. But PayPal's next challenge is to break into physical payments where payment cards dominate and cash is still used for a majority of low value transactions.

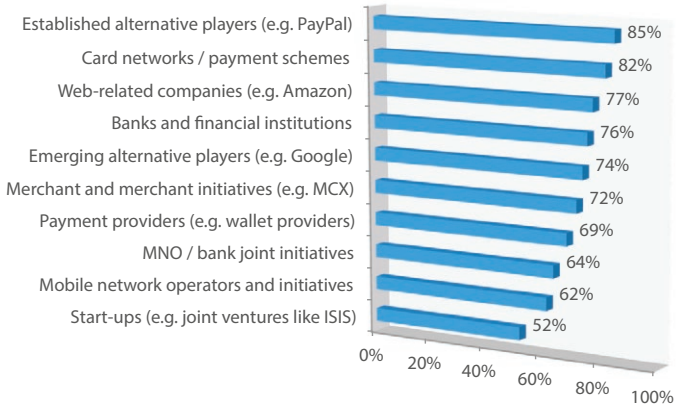
The payment infrastructure at shops is architected to accept plastic cards. Online payment services, such as PayPal or those that use the ACH networks, lack mainstream connectivity at the Point-of-Sale.

Square is yet another example of a start-up creeping up the ranks in the world of payments to reach significant momentum in the United States, which happens to be the largest market for electronic payments today. Square and other mobile Point-of-Sale solutions (mPOS) are discussed elsewhere in this report.

"The real holy grail for Paypal is being able to move to the physical world and being an accepted mark at a physical retail location," *says Bruce Cundiff, Director of Payments Research at Javelin Strategy & Research.*
"What they're doing now is a real attempt to replicate the Visa and MasterCard model. They want to make that growth exponential."

Players most likely to drive growth in mobile payments

(% of respondents who agree or strongly agree)



New Initiatives

Respondents are relatively confident that merchant initiatives such as the much talked about Merchant Customer Exchange or MCX in the United States have the potential to be successful. It makes sense, from the point of view of merchants, that they develop a payment system controlled by the merchants themselves – a solution that could reduce costs and allow merchants to retain control of valuable customer data, ensuring that customer data is not used to cross-sell one merchant's customer to a competing merchant.

Critics, however, say that setting up a new payment system that is widely accepted is a tall order, and managing payment risk, an essential part of any payment system, is not a core merchant competency. Stick to your knitting and do what you do best, they say. 2014 will be a crucial year to watch progress on this front to see whether or not the initial enthusiasm for merchant payments graduates to something substantial.

Card Networks

Respondents ranked card networks and payment schemes towards the top of the list, consistent with last year's results. Existing card networks are at the heart of billions of electronic payments and dominate retail payments today. The advantage of incumbency, while never permanent, is of critical relevance in payments because setting up a new payment infrastructure can be economically prohibitive.

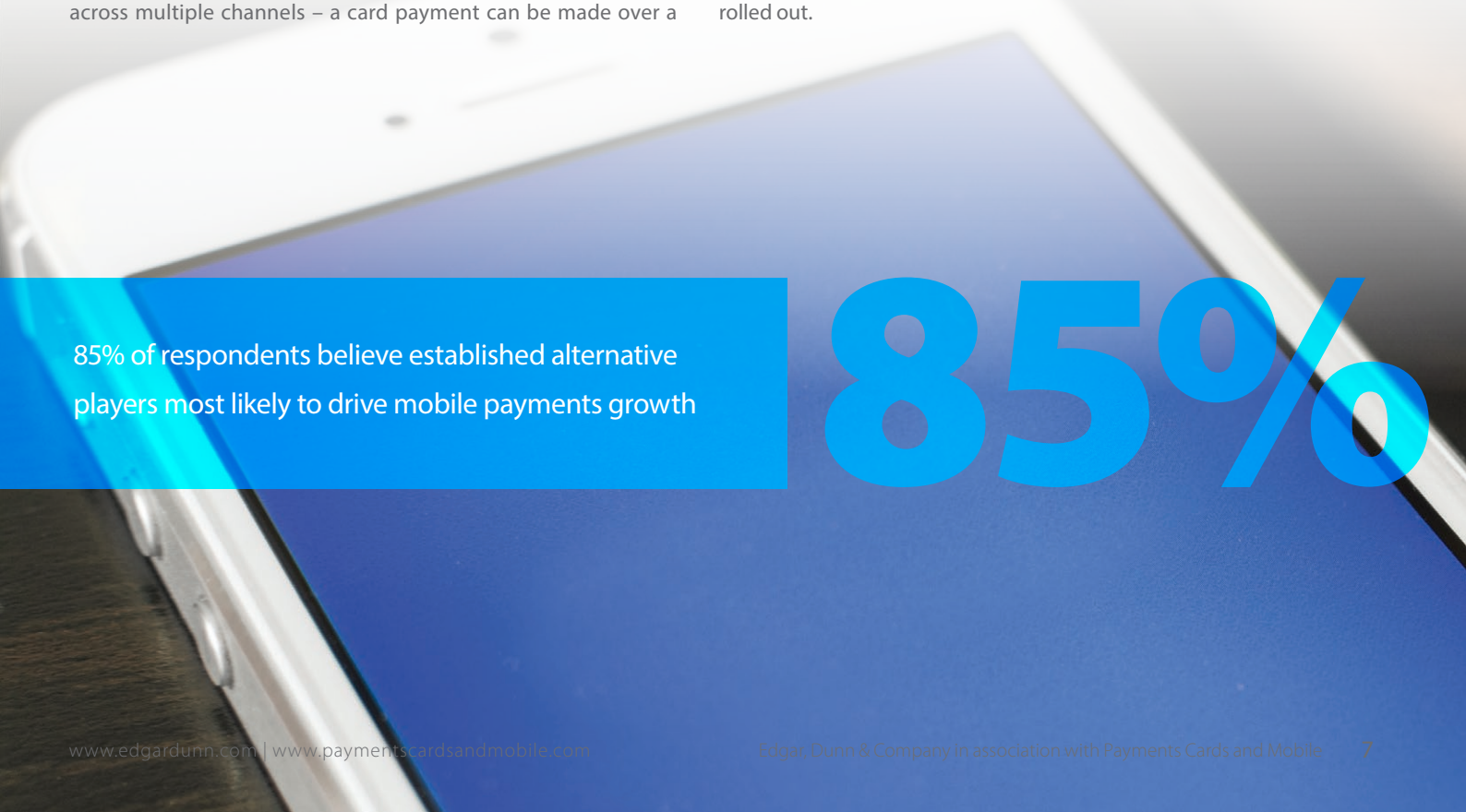
Existing networks have well-established, robust processes and have been highly effective in managing a wide range of credit, charge, debit and prepaid products. Payment cards can be used across multiple channels – a card payment can be made over a mobile device, from a laptop connected to the internet or at a POS. However, existing networks are being challenged by start-ups and others to provide a more flexible, seamless user experience across channels.

Slow Progress

The relatively low ranking given to MNO-led initiatives (which ranked above start-ups but below all other players) may reflect disappointment in the slow pace of investment by mobile networks.

The MNOs have been slow to deliver the promise of data driven, location based and easy to use payment services. Despite the formation of consortiums such as ISIS and Weve, the mobile industry has not yet been able to gain strong traction when offering new mobile payment services in developed markets.

In some developing markets where there is poor access to banking and financial services, mobile operators have successfully introduced payment and banking services. However, as discussed in a separate section of this report, 2014 may well be the year when this may change, and we may see more mobile payment programmes being rolled out.



85% of respondents believe established alternative players most likely to drive mobile payments growth

85%

3. Driving mobile payments forward

A commercial transaction is meaningless without the means to pay for it. As the world moves towards digital commerce, more slowly perhaps than most of us expected, making payments secure and easy to use is critical for consumer acceptance.

Survey responses to the question, what type of payment services are most likely to propel consumers to use mobile devices, have been relatively stable over the past three years, with the notable exception of mPOS, which is now believed to be far more influential. The chart below summarizes the survey responses.

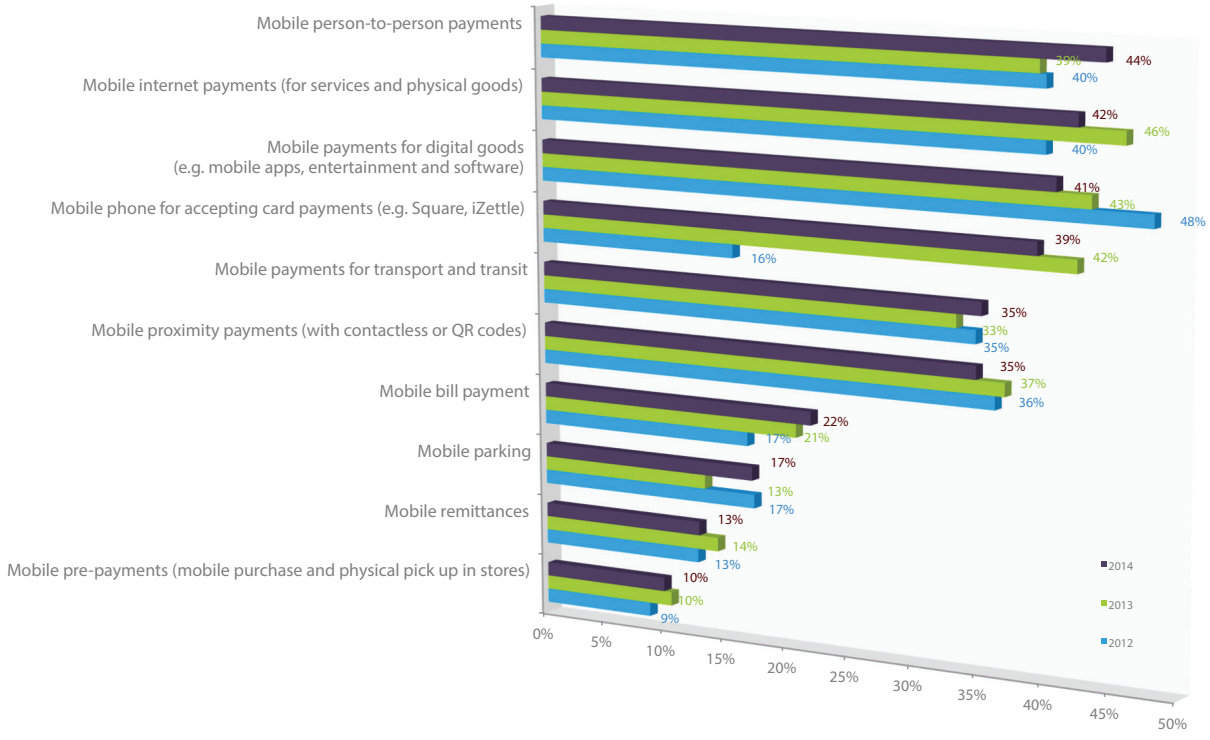
Mobile Person-to-Person

Mobile person-to-person payments occupy the top place in the survey. This is no surprise when we observe the increasing number of participants that exist in this category and the investment occurring in the space.

The most successful examples of mobile P2P products are in developing countries, e.g. M-PESA in Kenya or GCash in the Philippines, both MNO-led initiatives. There are also dozens of contenders in developed markets, ranging from bank-led products like Pingit in the UK or POP money in the US to start-ups looking to disrupt the industry, like Dwolla.

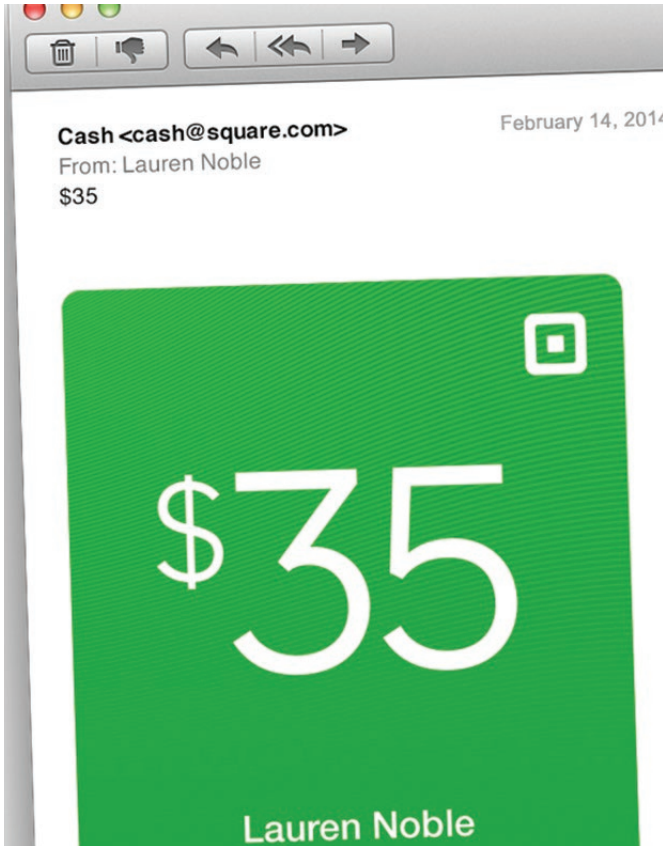
Types of mobile payment most likely to be the most successful over the next 2-3 years

(% of respondents that prioritised these items among the top 3)



Recently we have seen very innovative approaches introduced. For example, during the last quarter of 2013 Square launched Square Cash in the US. This is a P2P payment system that offers a simple user experience in the industry and currently is free to use for both senders and receivers. Under the Square Cash model, a user sends an e-mail with the amount of money they want to send to the receiver, copying Square as another recipient. Upon receipt of the e-mail, if it is the first time they receive money the receiver has to enter their debit card number. If they have used Square Cash, they simply accept the payment. The system allows anyone, with a debit card (from any US bank), to send or receive money.

In this very busy industry space one thing is true; we can continue to expect new competitors to enter the market and incumbents to expand their presence, including the major card brands.



Mobile Online

A clear and consistent message from the surveys over the past few years has been that the industry continues to think mobile and online channels as similar and complementary, or – borrowing from the popular industry lexicon – we are moving towards "channel convergence." Nevertheless, cart abandonment rates are higher with mobile devices than with other devices.

In response to this, retailers are developing applications and enhancing their websites to ensure that the mobile shopping experience becomes more attractive and convenient. Today, many retailers still offer vastly different browsing, searching and purchasing processes across channels. Digital wallets, discussed later, could help streamline these processes to make purchasing convenient, if not similar, across all channels.

Mobile payments for digital goods can be considered an extension of mobile Internet payments. Even when the final goods received are different, for example, physical vs content downloads, the purchase process is converging.

Despite growth in digital downloads, the number of mobile transactions related to digital downloads could decrease slightly due to the current changes in the media distribution industry, like the creation of subscription services. In any case, mobile online payments continue to rank among the top three choices in our surveys.

mPOS

mPOS devices are acceptance accessories that enable mobile devices to be used for accepting card payments. One of the key changes in the survey compared to past years was the big jump in industry expectations for mPOS from 16% to approximately 40% in the last two surveys, placing mPOS as one of the top perceived opportunities... mPOS is further explored elsewhere in this report.

4. Wallet success factors and considerations

Consistent with last year's results, this year respondents agreed that mobile payments are just one part of a successful mobile wallet.

As shown in the chart below, an overwhelming majority of the respondents think that mobile wallets will need to consider the whole purchase process and bundle payments and non-payment services in order to be successful.

Considering the Whole Purchase Process

Payment has traditionally focused on solutions that target specific channels. As a result the consumer payment experience can be substantially different at a physical store compared to online.

Consumer shopping behaviour is continuously changing. More and more, consumers are using multiple channels to complete a purchase. As depicted in the chart below, a consumer may see a product in the store, use a mobile device to check product reviews and make the purchase online from home (see chart 4.1, p11).

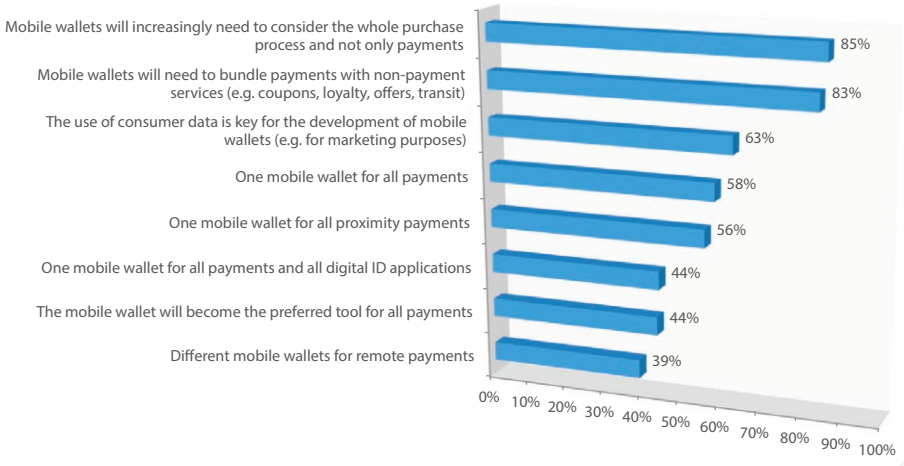
Survey respondents believe that successful wallets must be able to integrate all aspects of a consumer's purchase decision. They believe that providing access to social networks, product reviews and product information to inform the purchase decision will be critical to the success of mobile wallet solutions.

Value Added Services Driving the Purchase Process

Survey respondents prioritised integration with loyalty and coupons as the number one value added service that a mobile wallet can provide. The ability to combine mobile data such as real time location with targeted messages has significant value for merchants

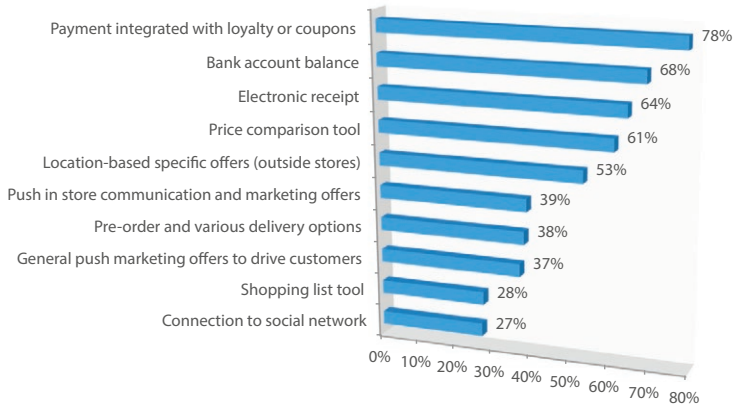
Mobile wallet success factors

(% of respondents who agree or strongly agree)



Value added services for mobile wallets most likely to be most used by consumers

(% of respondents that prioritised these items among the top 5)



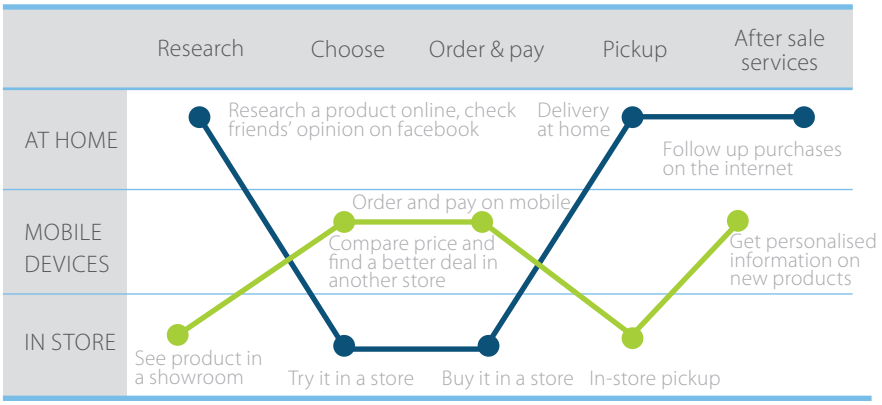
who want to increase sales and consumers who do not want to be bombarded with unwanted marketing messages on their mobile devices.

Services that add value

Next to rewards, survey respondents prioritised banking services, such as checking bank balances or retrieving statements, as the most likely to be used. Obtaining electronic receipts for their purchases was prioritised as third. Other relevant services include price comparison tools which, if accurate and helpful, offer great utility to any customer.

Location based offers were favoured by more than half of the survey respondents.

4.1 The whole purchase process



85% of respondents agree that mobile wallets will increasingly need to consider the whole purchase process

85%

5. The challenges

The harshest criticism from mobile payments detractors can be summed up in two statements: it has no business case and no one needs it...

Our survey respondents, as shown in the chart below, identified these two challenges plus increased security concerns as the top three challenges that must be addressed for mobile payments to be successful.

The Business Model

As in the past, survey respondents indicated that creating a viable business model is a key hurdle for mobile payments. And understandably so. New payment services require infrastructure, marketing initiatives and incentive programmes to ensure that consumers understand the benefits. Providers must continuously fine tune their services in accordance with consumer needs. But all these challenges translate to increased cost burden.

A variety of forces are putting pressure on already thin profit margins for payment transactions. But this perspective ignores the broader strategic questions. Can a payment provider, in a world that is increasingly connected and mobile, ignore the inevitability of mobile payments? Can a retailer ignore the need to optimise their website for mobile devices?

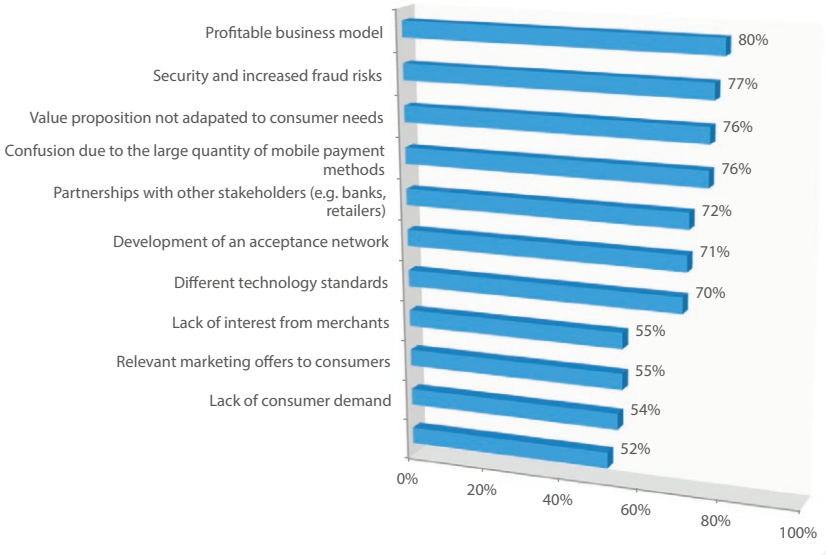
No One Needs It

Changing consumer habits is one of the hardest things to accomplish. Survey respondents ranked the ability of mobile payments to meet a consumer need as one of the top hurdles for success. To be successful, mobile payments must solve a problem that consumers do not perceive that they have without complicating the process with additional steps.

For most consumers, plastic cards work just fine. In order to get those consumers to change their habits, mobile payments services must provide services that are easy to use and that enhance the consumer's current shopping experience. Additionally, these services must provide value to merchants so that they will accept the payment method. To address these issues, service providers are bundling value added services and developing streamlined check out processes that enhance the user experience.

Key hurdles to the development of mobile payment solutions

(% of respondents who agree or strongly agree)



Security

This year, concerns around security of mobile payments have moved up in the priority list. Security is discussed elsewhere in this report. It remains an integral part of any financial transaction – especially payments.

Too Many Players – Too Little Value

Another challenge is the plethora of providers offering mobile payments. This is a typical early stage market phenomenon.

People look for trends and roll out products quickly when they see an opportunity, though the market for their products may still be in its infancy.

Some products are instrumental in pushing

"When we launched the O2 Wallet 18 months ago we were one of the first mobile wallets around," the carrier says in a statement on its website. "Since then lots has changed for us, the market and our customers. So, we've decided to close the O2 Wallet to give us time to look into new and better ways to help people manage their money on the move, both in the UK and abroad."

their segment forward but most, especially in payments, find it difficult to stand out, creating confusion for customers who are often attracted to the rewards offered for signing up but defect if the product does not deliver continuous value.

A recent example relates to mobile wallets. This category is discussed elsewhere in this report but it is interesting to note the demise of a recent mobile wallet from the UK mobile operator O2, now a part of Telefonica.

The wallet is to be discontinued in March 2014. While there were organisational and other reasons cited for dropping the service, the nature and number of negative reviews on service download sites is revealing. One such review summed it up: "Slow, painful registration, multiple passwords, unclear security."

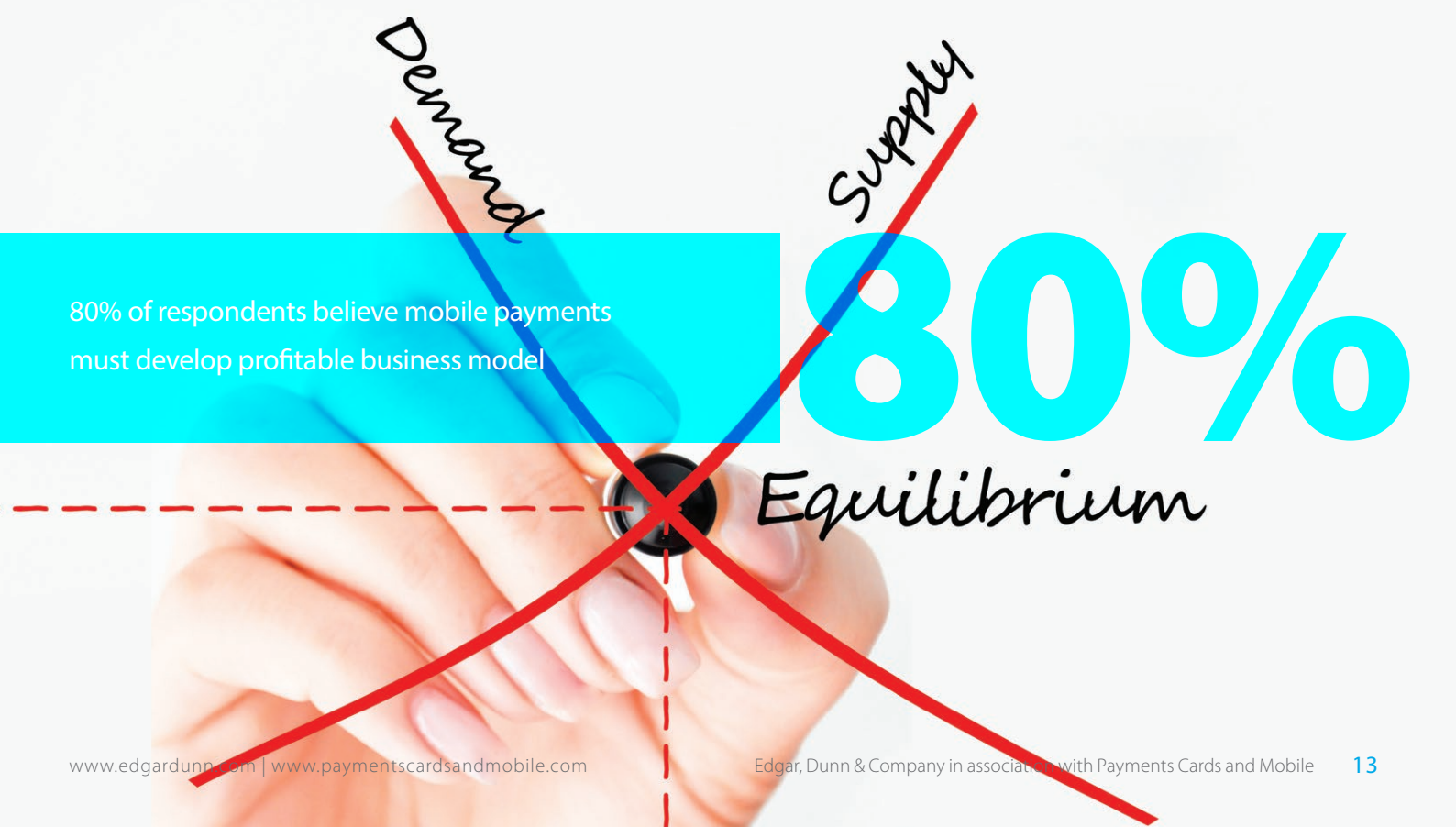
But Not A Lack Of Demand

Interestingly, lack of consumer demand is less of a concern. This is positive. Consumer demand is not often easily discernible or measureable and if it were so, everyone would be able to identify the prized opportunities.

As mentioned in the introduction to this report, Apple saw consumer demand for the ground breaking products it created even though no survey or focus group would have uncovered it for them.

But consumer demand does not automatically translate to consumer acceptance. The latter comes from developing products and services that are intuitive, easy to use and understand.

This remains a key challenge and appears high on the list.



80% of respondents believe mobile payments must develop profitable business model

80%

6. Technologies for mobile payments

Which technology for mobile payments?

It is clear from this year's survey results that respondents continue to believe that multiple mobile technologies have the ability to successfully drive mobile commerce at the point of sale. However, there is a major shift towards cloud based software solutions and away from hardware based technologies such as the mobile SIM.

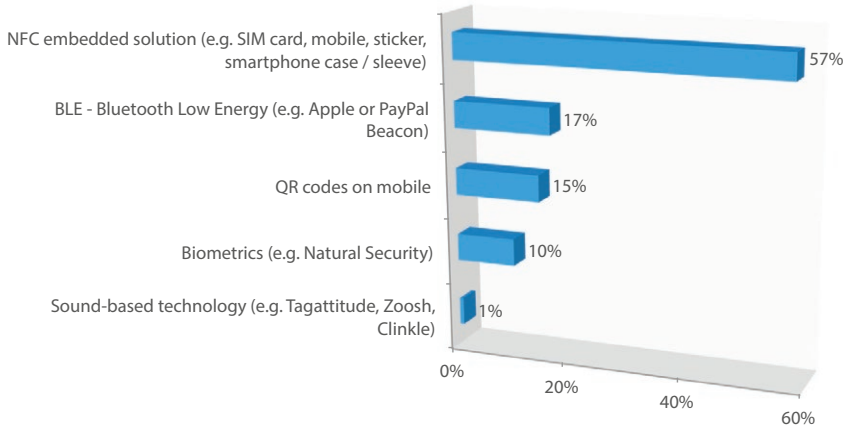
The debate about which technology is best suited for mobile payments continues. This year there were several significant developments that make the debate even more interesting: Apple and PayPal, both long-term proponents of cloud based solutions, announced support for Bluetooth Low Energy (BLE) further challenging the NFC paradigm. In contrast, Google's enabling Host Card Emulation (HCE) in its new KitKat platform brings credibility to a cloud based NFC solution. Additionally, innovative applications of QR code based niche solutions continue to pursue the promise of frictionless payments.

This year's survey respondents, when asked which technology will be most successful to drive mobile proximity commerce going forward, selected NFC by a significant margin over cloud based BLE and QR codes. This compares to last year's results where the non NFC technologies received relatively equal support.

This strong belief comes in spite of the fact that the NFC ecosystem remains complex and competing technologies continue to emerge. Sound based technologies were ranked the least likely to be successful followed by biometrics, which respondents also ranked as unlikely to be successful.

Technology most likely to drive mobile proximity commerce going forward?

(% of respondents that prioritised the top 3 items)



Significant Evolutions in 2014?

Strong support for NFC and its ability to drive mobile commerce is likely a reflection of expectations for advancements anticipated in the upcoming year. Many of the MNO-led initiatives around the globe are planning to or have already moved from limited pilots to national rollouts. For example, the US based ISIS, the joint venture between AT&T, T-Mobile and Verizon, announced its nationwide rollout at the end of 2013, after a year-long trial in Salt Lake City, Utah and Austin, Texas. The ISIS application will likely be pre-loaded on phones sold by the three MNOs. Similar MNO-led initiatives are expected in China, Germany, France and Japan for 2014.

In addition to MNO-led initiatives, a few banks are expected to launch programmes with embedded chips. In Australia, Commonwealth Bank of Australia announced its launch of an NFC mobile payment service with Samsung and MasterCard. Westpac, another leading Australian bank, is expected to launch a similar programme with Visa.

Google Wallet, which launched with Sprint in the US, has met stiff resistance from the other leading MNOs who have effectively blocked access to their chipsets, severely limiting the success of its wallet.

Google's support of HCE offers a way around its problems with access to handsets and brings credibility to the possibility of cloud based solutions for NFC. The recent launch of Royal Bank of Canada's mobile solution utilises similar technology.

Available in Blackberry for several years, HCE enables storage of the payment credentials remotely combined with NFC for the final communications to the POS terminal. Hybrid solutions like this have the promise of simplifying the mobile payments ecosystem.

In recent years, the market has seen progress in establishing the infrastructure required for NFC solutions with growing deployment of contactless terminals in various markets such as the United Kingdom, Canada, Australia and Turkey.

Additionally, the availability of NFC enabled handsets is increasing. However, the complexity of the value chain and its implications on the business model remains unresolved. Using hybrid models, the ecosystem can be simplified – a service provider can store the payment credentials in the cloud, bypassing the need for a Secure Element in either the SIM or an embedded chip in the phone. This has obvious economic advantages for the service provider.

Many experts express security concerns around a software only solution for mobile payments, including HCE. A possible solution could be coupling HCE with a Trusted Execution Environment (TEE) which effectively provides a firewalled section of the mobile operating system to offer secure storage and controlled access to data stored in that environment.

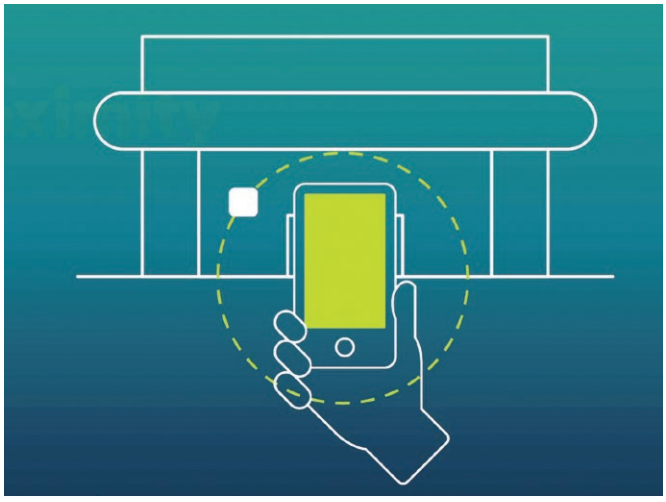
Blue Tooth Low Energy (BLE) Beacons, from Concept to Reality

Both Apple and PayPal are supporting BLE, the technology behind their recently announced beacon products. Beacons are small, low cost devices that retailers (and others) can use to communicate wirelessly between devices, such as a customer's mobile phone, and can easily deploy in indoor locations.

Bluetooth connections can transmit messages, such as specific deals or product information, to customers while tracking a customer's location within the store at the same time. Compared to WiFi communications, beacons are far more precise in pinpointing locations than WiFi's geo-location capabilities.

Additionally, beacons use significantly less power and thus do not drain precious battery life as quickly. Promoters of beacons foresee payment applications that deliver on frictionless payments by automatically checking a customer out as they leave the store with merchandise in hand, without the customer having to stand in line at a physical check out. Customers must authorise applications, thus providing permission, in order to activate the technology.

The technology is currently being tested at Apple stores and selected merchants. BLE may have significant potential but it remains to be seen how it will be implemented and how consumers will respond in order to assess its real potential.



Quick Response (QR) Codes

QR codes are another technology that can link the physical world (a consumer's smart phone in a store) with other devices (a POS terminal) to trigger a payment.

Starbucks' enormously successful mobile app proves the model for individual retailers, with Starbucks reporting that mobile and gift card payments now account for more than 30% of total US payments.

Other applications such as LevelUp in the US and Flashlz in Europe are leveraging the technology in a multi-merchant environment. However, to be successful as an open payment system, they must conquer the chicken and egg dilemma of recruiting both consumers to use their apps and merchants to accept them.

Other Cloud Solutions

Applications are emerging that integrate the payment process seamlessly into the "shopping" experience. Uber was one of the first to innovate in the taxi business, making it easy and transparent to order a taxi while incorporating the payment process automatically on the back end.

Other applications are targeting similar experiences for the restaurant and bar industry, enabling customers to check in when they arrive, monitor their tabs and walk out without waiting for their bill when they are done. Their purchases are charged directly to their card or account provided when they registered for the service. The innovative design of frictionless payments has shown positive results among consumers and is one of the trends to follow in 2014.

Software or Hardware?

The location of the payment credentials is central to the question of which technology will be most successful. Achieving the balance between security and customer experience is limited by the terms of the technology chosen.

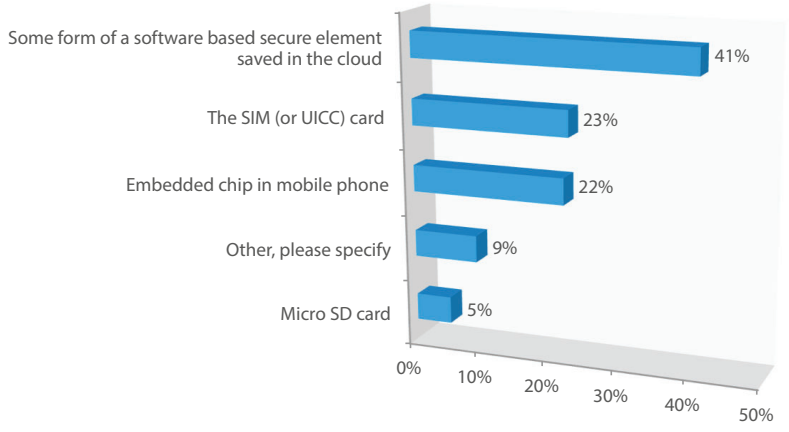
This year's survey results indicate that the most suitable candidate for the secure element is likely to be software based (e.g. cloud) by a substantial margin over prior years. SIM and embedded chips still were felt by many to offer the best solutions, but there is a notable shift in favour of software solutions compared to prior years.

Maybe the right question is not which technology will win, but how will these technologies interact and co-exist?

From the consumer perspective, technology is largely irrelevant, and in the end, the technology that provides the best balance between user experience and security will prevail.

The most suitable candidate for the "secure element"

(% of respondents who agree or strongly agree)



7. Merchants and mobile commerce

Increasing focus on mobile payments

The future of commerce is mobile. Almost two thirds of merchants surveyed in *Edgar, Dunn & Company's 2013 Retailer Survey* have launched or are planning to launch a mobile app or wallet in the next 2-3 years.

Merchants are taking a proactive stance, not willing to let other players impose their standards or gain access to their data.

2013 has seen the confirmation of this trend with significant initiatives led by merchants, including: MCX in the US, Auchan group's Flash'N Pay in France and numerous start-ups such as FlashIz or LevelUp. Mobile is considered as an opportunity to create new points-of-interaction and strengthen customer relationships. Nowhere else is the shift in the overall balance of payments and the strong will of merchants to retain control over consumer relationships more evident.

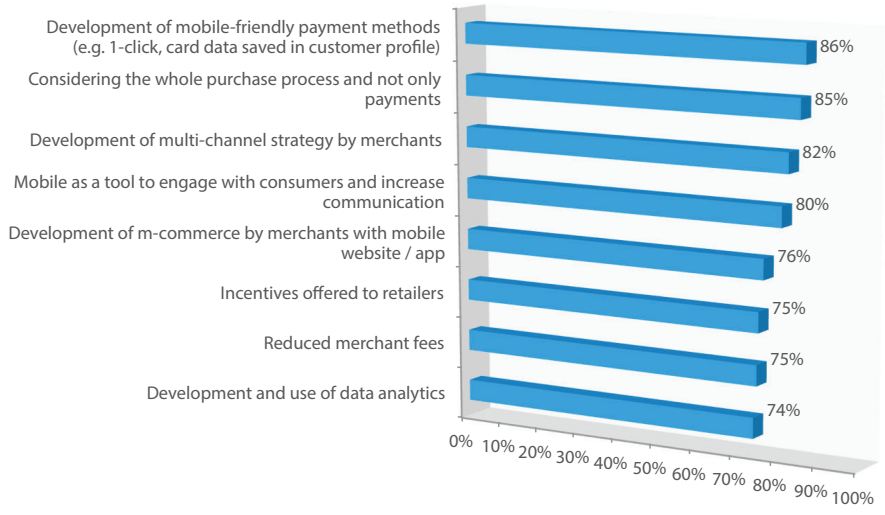
Key Drivers for Merchant Adoption of Mobile Commerce

The mobile recipe for success for merchants in this year's survey includes ingredients that generate additional sales, such as mobile-friendly payment methods and ingredients that reduce cost, such as incentives for retailers.

Merchants face a significant challenge when trying to increase its sales conversion per client: how to leverage new technologies to offer a simple experience to consumers? The traditional silos of stores, Internet websites and mobile have become irrelevant in the consumer's eyes. Consumers expect that the payment method

Key drivers for merchant adoption of mobile commerce / payments

(% of respondents who agree or strongly agree)



"The views of merchants who are engaging in m-commerce is that, by and large, they are very keen to be able to offer couponing services, front-of-store sale services, and temporary sales points, all of which can add value. Improving merchant acceptance translates into the ability for cardholders to be able to pay in different environments. Beyond new technologies, the underlying challenge for the industry is, like always, to win both consumer acceptance and merchant acceptance."

Victoria Conroy, Editor PCM

they choose to use will work across all channels. What won't work is expecting or requiring consumers to use various different means of payment, each of which only works in one or another channel. PayPal's moving into physical points of sale is testimony to this need to consolidate payment methods even as the disruptors continue inventing new ones.

Historically, the result of successfully implementing innovation has been consolidation. Examples include the automobile industry or music distribution (think records, CD's, mp3's). And the evolution and maturity of successful payment systems will be no different.

Customers are beginning to demand that their preferred payment system be usable in all channels. Merchants are demanding, by their choice of payment mechanisms (often made by balancing cost savings against usability), that innovators do a better job of rationalizing the current over-abundance of payment solutions by better meeting the sometimes competing demands of the merchants as well their customers.

While striving to achieve real multi-channel payment methods will bring benefits for customers in the form of better experiences, it will also bring benefits for merchants. The eventual consolidation of payment methods should bring a decrease in prices for all channels. This phenomena will be compounded by the ideas and models proposed by new entrants and disruptors. As acceptance prices decrease, the business case to accept new forms of payment will be clearer for more merchants further accelerating payment convergence.

The lower ranking of data analytics, relative to other items, closely tracks the low rankings given to the direct questions about the difficulty of implementing data analytics and the lack of clear models for monetization, on both of which the survey shows continuing doubt. This topic is addressed elsewhere in the report.

8. Consumer expectations

Increasingly high consumer expectations

The adoption of new technologies is changing consumer purchasing habits. Consumers expect quicker and easier checkout and payment processes and relevant personalised information whether they are at home, at work or on-the-go.

Mobile devices work effectively across all delivery channels and make the distinction between different sales channels, such as the traditional opposition between brick-and-mortar and online commerce, irrelevant. Re-thinking the consumer experience for mobile commerce is essential.

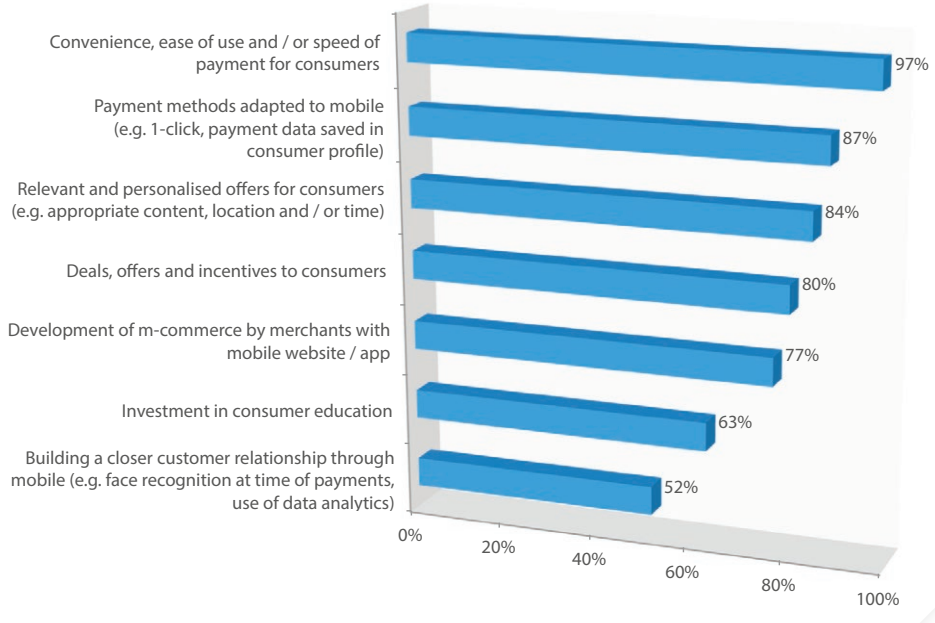
As consumer expectations increase, merchants and payment providers are playing a catch-up game with changing consumer shopping habits. Mobile is considered as the next big opportunity, but one thing that many in the industry acknowledge is that providing an appropriate solution is no easy task.

Key elements have to be taken into consideration when designing a mobile commerce solution:

- Almost all respondents in this year's survey (97%) considered that convenience, ease of use and / or speed of payment are essential components of a mobile commerce solution
- Payment also needs to become easier with mobile (agreed by 87% of respondents), especially for repeated usage as evidenced by the Amazon 1-click or Square pay-with-your-name features
- Compared to previous years, there is significant change in the presence of relevant and personalised offers in the top 3 drivers for consumer adoption. While previously considered interesting, they were not as significant as in this year's survey, and they reflect the increasing focus on providing appropriate content to create a two-way interaction with consumers and a significant potential to generate additional sales.

Key drivers for consumer adoption of mobile commerce / payments

(% of respondents who agree or strongly agree)

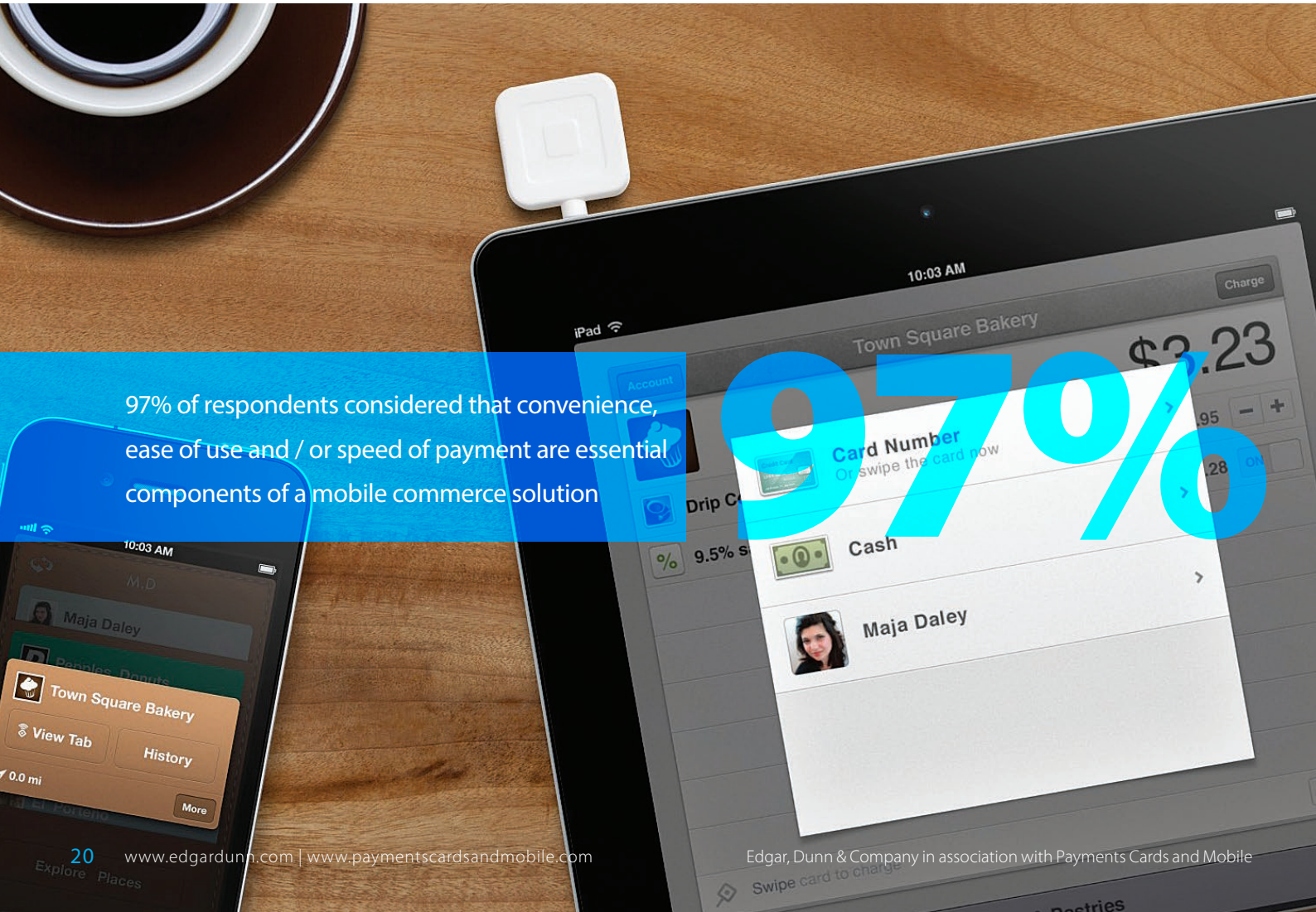


8. Consumer expectations

Towards a Frictionless Customer Experience

This quest towards convenience throughout the shopping process generates a frictionless customer experience. Superfluous steps or non-optimised sub-processes create unnecessary friction negatively impacting customer willingness to complete a transaction or return for another one.

Survey respondents agree that payments need to become frictionless to offer customers a simple and integrated payment experience across all channels. This is where payment providers have a significant role to play in providing appropriate solutions and processes to assist merchants to increase sales on mobile devices.



97% of respondents considered that convenience, ease of use and / or speed of payment are essential components of a mobile commerce solution

97%

9. The social scene

In the 2014 survey, 55% of respondents agree with the statement that "social networks will play an important role in the development of mobile payments." This level of agreement is not a surprise when we consider the number of users in each major social network and the influence that these communities can have.

At the end of 2013, Facebook had 1.2 billion monthly active users; this includes 870 million that log in via mobile. Meanwhile, YouTube also boasts 1 billion monthly active users that upload and watch millions of minutes of video every day. Twitter at "only" 200 million monthly active users has more reach and influence than most traditional media outlets. The speed with which information is shared within and across social networks is far superior to traditional media. Social networks are powerful because they allow information to flow in both directions, and the broadcaster and the audience can interact with each other and change places at any time.

Social media is definitely growing in importance for many industries, and the payments industry is not excluded from this trend. Even companies that traditionally have not had a direct-to-consumer presence are stepping in to engage customers via social networks. General Electric's Industrial Division, for example, has created its "Brilliant Machines" social media campaign, engaging customers on Twitter, Facebook and YouTube. This is not a coincidence, as most companies have realised that having a cohesive social media campaign can bring several benefits, such as the following mentioned in a September 2013 Forbes article:

- Improved company branding
- Improved brand awareness
- Word-of-mouth advertising
- Increased customer loyalty and trust
- Improved audience reach and influence

But that is not all; a well coordinated social media strategy, and a good product, can help launch initiatives and fund projects. This can be of interest to payment initiatives that have traditionally struggled to win adoption. Consider Coin, a start-up that has come up with the idea of making an "intelligent" card. The intelligent card will store the information of several payment cards and change this information on demand, effectively liberating the user from carrying around several plastic cards.

Due to their savvy use of social media, including creating compelling video content, sharing information on Twitter and reaching out to the blogosphere, they managed to beat their goal for pre-orders in less than 40 minutes after launching their campaign. The product is expected to be ready for the summer of 2014.

In the future we can expect social experiences in payments to become more common and eventually the norm. This will require companies to become savvy social media users for all new ventures. According to the Pew Research Center, 87% of US internet users between 19 and 29 years old are actively using a social network, and as they grow older they will become the most important customer category for most industries. This trend can be observed in many countries around the world.

10. The security equilibrium

Security is one of the core foundations of any successful payment system. Consumers and merchants must have faith that legitimate transactions will be completed and that their confidential data will be secured from those who would want to use it for unauthorized purposes.

Over the years, we have seen fraud migrate from one off small incidents to large, organized data breaches that have compromised millions of accounts. These breaches have targeted a broad spectrum of payments participants, such as merchants, large processors and providers of online services like email and search.

The recent breaches at multiple US merchants over the past holiday season clearly highlight that the vulnerabilities within the payment system are not just online, but also at POS.

These breaches erode consumer confidence and can result in millions of dollars of fraud losses and additional expenses for banks and other entities involved. They expose the vulnerability of large industrial scale payment systems to criminals operating from unreachable jurisdictions in a world that is increasingly connected.

The results of our 2014 survey are largely unchanged from 2013. As shown in the chart below, respondents continue to believe that security is a key concern with mobile and online payments but that it must be balanced with the consumer experience (see chart).

As our survey respondents agree, no technology is completely secure, and the majority do not believe that the security question is overhyped. Cyber-fraudsters today are likely to be highly tech-savvy individuals working as part of organised criminal gangs, and they will probe the defences of a secure system until they find weak points that can be exploited.

As payment systems continue to migrate to cloud based solutions, the industry will have to find new ways to protect the client's information.

Security in mobile payments

(% of respondents who agree or strongly agree)

Balancing Act

Nevertheless, a majority of respondents agree with the statement that while security is paramount, consumers still seek ease of use and convenience from a secure payment service, financial website or application. Downloading special software or memorising yet another password, in general, discourage the adoption and use of services.

Many merchants have concerns around 3D secure protection for online payments and worry about the potential of increasing cart abandonment rates; as a result, many have decided to bypass the protocol to make the checkout process easier for customers. Reaching this type of pragmatic compromise between security and customer experience is something that banks and payment providers have traditionally found very difficult to do. Going forward, the payments industry will have to find the right balance of security and consumer experience that will keep information safe and provide a service that users will embrace.

Solutions that are highly secure but require new infrastructure are often harder to roll out. NFC technology, for example, is versatile and offers significant opportunities in payments, advertising, marketing and loyalty. NFC also offers a high level of security. But deploying it requires specialized hardware on both the mobile device and the POS. This limitation, to date, has contributed to the slow adoption of NFC by merchants and clients, beyond pilots and trials.

At the opposite end, there are numerous start-ups that are promoting software based payment solutions that are easy to implement. For security, these solutions often store the payment credentials in the cloud, and tokens, such as bar codes and pictures, are used at the POS. Many believe that software only solutions could be subject to hacking and that they may be appropriate for closed loop systems, but may not provide a suitable level of security for open payment systems.

The development of flexible hybrid software plus hardware solutions for mobile payments could help deliver the balance between security and customer experience. The use of these new technologies including Host Card Emulation and Bluetooth Low Energy beacons could ensure that security protocols will be adaptable and will respond to customer needs rather than relying on common processes such as passwords.

Additionally, mobile brings the promise of additional authentication measures to the handset. Using the computing power of a smart phone, security measures such as biometrics, PIN entry and tokenization could potentially be implemented. User experience may be enhanced across all channels while increasing security levels.

11. Mobile and corporate payments

Even though the consumer market has gained most of the visibility in the mobile payments and solutions world, the corporate market holds significant potential for the development of this industry. Our 2014 survey shows strong agreement (more than 60%) in the relevance of different use cases for mobile in the corporate world.

It was expected to see "alerts and messaging" as the top use case for mobile in corporate as it is an extension of the current uses of mobile in the consumer world, but "travel expense and control" opens a whole new category of services that are worth exploring.

Given that the mobile device always accompanies most business travellers during their trips, it acts as an always-available tool to ensure adherence to travel policies and monitoring of expenses. With corporate travel and payment tools, a company can not only make sure that travel costs remain within approved limits but can also analyse expense patterns in real time. At the same time, the business traveller is able to access support tools such as the company booking and reservation systems.

Nevertheless, even with all the potential benefits that mobile can bring to the corporate world, the deployment of these technologies has been slow. This is not a surprise, considering that businesses act very differently than consumers. The latter tend to move relatively quickly towards new technologies while businesses usually lag behind as they require a compelling business case to deploy new technologies. Launching a new tool or app in a corporate environment requires a large amount of resources in the form of support, licenses and testing, and unless there are positive returns to be expected in the form of savings or productivity increases, the technology will not be deployed.

Mobile phones have a clear limitation in the size of their screens, leading business executives to wonder how much information they can receive and process efficiently under this limitation. But the relatively recent rise of the tablet (e.g. iPad, Kindle, Surface) has opened new horizons. It offers more screen real estate.

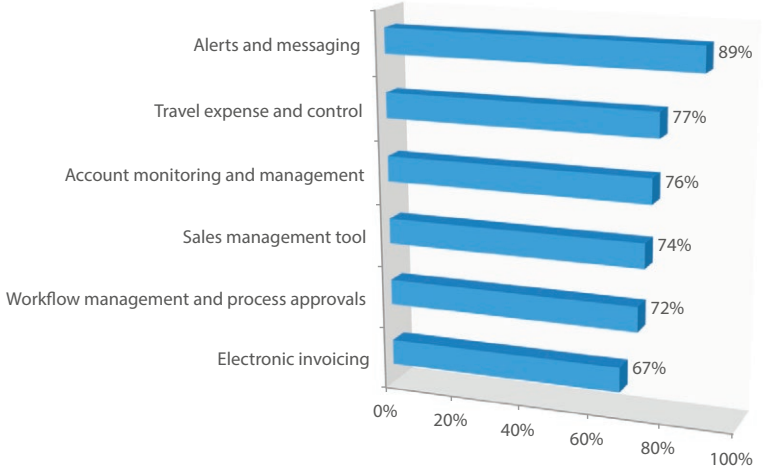
We can expect in the future more and more mobile corporate solutions will adapt to tablets, and corporate use will grow along with the rise in tablet devices.

Another factor to consider for mobile in a corporate setting is "Bring-Your-Own-Device" or BYOD; this is a trend in which corporations relax their IT rules to allow employees to use their personal devices for work. BYOD is not without challenges as IT departments face a more complex environment, one in which they need to support many different devices.

Mobile devices have significant potential for corporate use and although so far the adoption of these technologies has not kept pace with the consumer market, we can expect it will only accelerate in the following years due to advances in device capabilities and the changes in IT rules at large corporations.

Corporate applications for mobile devices

(% of respondents who agree or strongly agree)



12. mPOS – not just for micro merchants

In less than four years, mPOS (mobile Point-of-Sale) has become one of the most *promising market segments of the payment industry*. The number of terminals has grown from 4.5 million to 9.5 million between 2011 and 2013 worldwide.

One of the reasons for the rapid development of mPOS is that mainstream retailers are now adopting mPOS solutions and integrating them into their current POS environment. Over two thirds of survey respondents concurred that mPOS is not just for small retailers but for large retailers as well. Initially, mPOS vendors targeted small micro-merchants with simple, low cost pricing models coupled with basic POS features.

Vendors have now enhanced their services by offering full cashier stations that can be integrated into a retailer's core systems. Consequently, companies like Nordstrom, Home Depot and Gap stores have implemented or are implementing mPOS solutions to enhance and further personalize the customer sales experience.

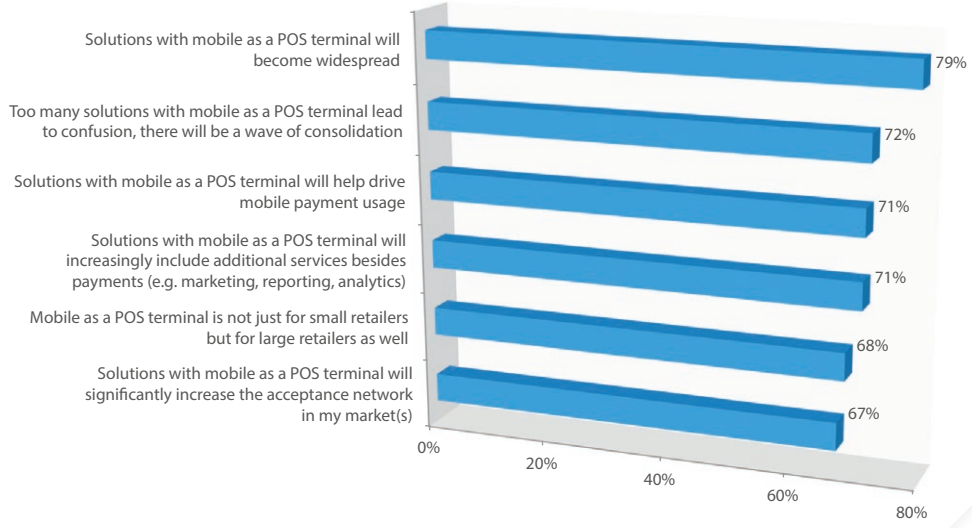
mPOS is contributing to major changes in the payment industry. Since the launch of Square in 2009, there has been a proliferation of new mPOS initiatives. Edgar, Dunn & Company has identified more than 200 mPOS global providers as of December 2013, approximately 40% of which are EMV compliant.

Over 70% of this year's survey respondents anticipate that the crowded mPOS market will undergo a stage of consolidation. Key competitive elements are likely to include:

- Security, which is still a significant concern for merchants and consumers
- Value added services provided through the mPOS terminal
- Tiered pricing (e.g. iZettle charges 2.75% for card turnover above £2,100 per month in the United Kingdom, reduced to 1.5% if their monthly card turnover is above £12,830)

"We find that most Americans view traditional cash registers as outdated because more and more retailers that are known for innovations are moving away from cash registers and going more towards mPOS," *said Pascale Juan, Chief Operating Officer of I Love Velvet.* ***"We do think traditional cash registers are facing extinction as more and more of the larger retailers begin to implement mPOS and are replacing traditional cash registers. Smaller retailers will start to adopt the same strategy, and you will start to find less and less traditional registers in retail."***

Perception of mobile POS solutions (% of respondents who agree or strongly agree)



13. Digging for data

It's Not Hype

Respondents overwhelmingly reject the notion that data analytics is 'all hype' or will fall short of expectations.

But the survey may be flashing a cautionary light regarding personal data and privacy in data analytics. An overwhelming majority of respondents agree or strongly agree that data must be managed carefully without being intrusive. As the emerging companies that provide data analytics move from their campus genesis to the competitive market, mistakes may be made which could result in tighter regulation of data analytics in the financial services industry.

The degree of threat to a person's privacy is felt by most consumers to be proportionate to the amount of their personal data accessible by others. Big data could pose a bigger threat and the computational characteristics of data analytics magnify the issue. Using algorithmic logic and heuristics, data analytics can identify nuances of understanding about a person that less sophisticated techniques can miss.

Mobile Data

The combination of smart phones and payments creates a personal data store of stunning size and capability. It can know who you are, what you bought, where and when you bought it and how much and by what means you paid for it. It can know what other brands of the same product you "Yelped" and what other product types you browsed. It can record in which stores you shopped (on-line and physical) and who you phoned while shopping. Data analytics will figure out which of the people you called or texted or which social sites that you checked most influenced your decision. It can rank these people's ability to influence your purchases and send them thank you notes or coupons.

The message is clear. Even if people don't begin to fathom how deep the combination of the mobile phone, new payment instruments and data analytics can reach, they have an innate sense that mobile payment companies can know a lot about them based on their shopping and purchasing behaviours.

"Clearly from a banking point of view, Big Data enables you to store and process massive amounts of information and by definition that enables you to make considerably more informed decisions. But at the same time, it's really trying to address how those financial institutions manage consumers almost down to the individual level and manage that balance between what Big Data is, and what is the soft touch. That's always going to be a difficult challenge."

Steve Wright, Managing Director at Lusis Payments

Implementation Concerns

Respondents feel implementing data analytics will be difficult. Banks and other payments providers have found that in most cases the problem is not in collecting the data, nor in the analysis, but in cleaning the data so it can be analysed. As databases age and new data is stored in ways that the cleaning step can be minimised, this problem will clear itself. In the meantime, many companies are proceeding with analytics projects that use smaller data sets or that use recent data. Mobile phone payments data is relatively recent so the payments industry would be a prime place to use data analytics without encountering major data cleaning costs.

How To Monetize It

How to monetize data analytics ranks equally with privacy as a concern. Monetization strategies have centred around advertising based on information about customers. The difficulty lies in measuring the degree to which revenue from a customer can be proven to be the result of the advertising based on the data analytics.

Personal Data, Data Analytics and the Digital Wallet

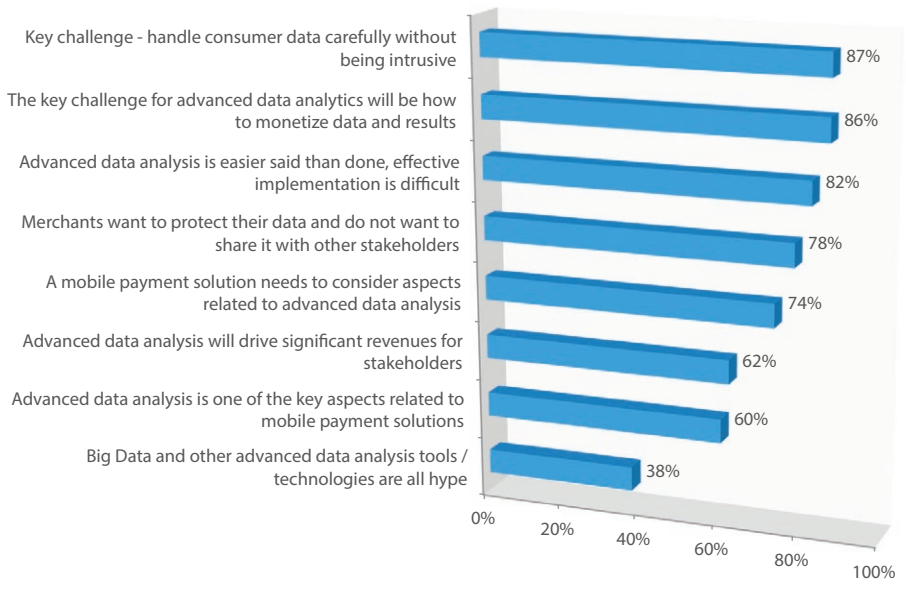
Data analytics and digital wallets will find more and more to do with each other, initially, in using data analytics to derive insights about consumers that are valuable to wallet providers. In a second wave, data analytics may move onto the mobile device itself by taking advantage of cloud computing.

When there is a data analytics app available, mobile payments and mobile wallet customers could conduct real time analyses of data in ways that exploit payments related, non-transactional activities. A person could enter a store (physical or virtual), load product specifications, prices, warranties and coupons into their mobile and have a cloud-based data analytics engine compare the product and price data with competing offerings and patterns of use for similar types of products and make a recommendation, all without having to share personal data.

The interaction between mobile payments, personal data and data analytics is just beginning.

Data Analytics

(% of respondents who agree or strongly agree)



14. Mobile payments in emerging economies

Mobile payments have been highly successful in developing countries. Mobile payment solutions in developing markets benefit consumers by bringing financial inclusion and reducing banking fees.

M-PESA, Kenya's mobile money system, is the leading example of how this can rapidly be achieved. The system's genesis was a microfinance loan-repayment tool, which quickly expanded into a comprehensive money-transfer scheme. Launched in 2007, when less than 20% of the population was banked, it took only six years for 18 million Kenyans (two-thirds of the adult population) to use the service and transact 25% of Kenya's GNP over the network owned by Safaricom.

Now, approximately 40% of Kenyans have a banking relationship account, while those with no bank account or mobile payment solution are at a record low of 15%.

As our survey results reflect, mobile payments are very important for emerging economies. Since the launch of M-PESA, 150 solutions have been rolled out in 72 countries. A third of these solutions are barely in their second year of operations and already 100 million customers are enrolled. Despite nearly 60% of transaction volume used for airtime top-ups, a staggering 80% of transaction value is represented by P2P transfers.

84% of survey respondents agree that mobile payments will grow faster in developing markets than in developed markets. Developing economies have several characteristics that create the potential to deliver widespread, affordable mobile solutions. 85% of our survey respondents attribute the faster growth opportunities to the lack of banking infrastructure in developing markets where nearly 65% of the population is not banked.

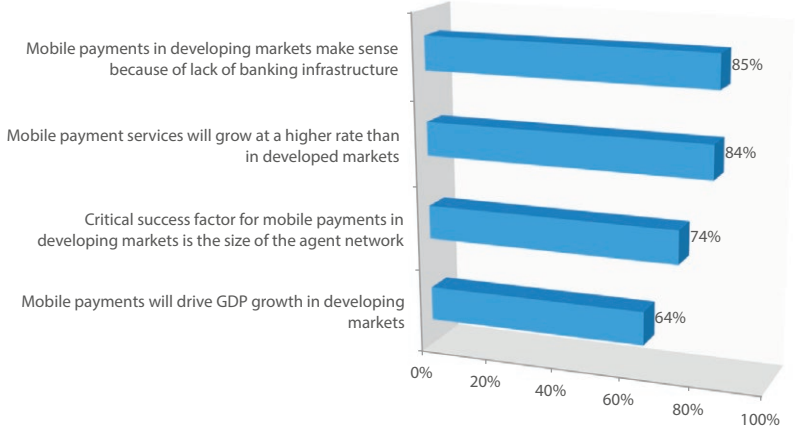
The limited footprint of traditional brick-and-mortar branches, the high cost of expanding existing infrastructure and a lack of disposable income available for basic utilities, such as banking services, are foremost among the many reasons for the lack of banking services. The emergence of branchless and mobile banking solutions over the last decade drastically alter the economics of banking the unbanked and provide opportunities within the developing markets.

Observation of successful mobile payment platforms in Russia, Eastern Europe and the Middle East shows that limited mobile phone penetration of the addressable market may not be an obstacle. M-PESA was built upon a base of mobile users that was less than 35% when it was launched. What may be more important is educating consumers early in their mobile adoption and the concentration of MNO market share.[1]

M-PESA was launched in the middle of a cycle of exponential mobile phone adoption which introduced consumers to mobile payments as they started using their first mobile phones. In nearby Uganda and Tanzania mobile penetration is 50% and 65% respectively – already considerably higher than M-PESA's 35% rate in 2008.[2] Although still respectable, the percent of households using mobile payments in these countries is only one third that of Kenya's. Despite higher mobile penetration rates, it may take more effort to convert existing users to new applications and solutions.

Mobile Payments in Emerging Economies

(% of respondents who agree or strongly agree)



1 Source of data: (Georgetown University and Tavneet Suri 2009). 2 Source of data: (WorldBank, EIU).

How the mobile market is divided among existing MNOs is also important. Markets with fewer operators will generally fair better. Safaricom had about 80% of the mobile market in Kenya, allowing it to create a closed-loop system that did not need to be interoperable. In contrast, Russia and Brazil both have mobile penetration rates above 100%, booming smart phone markets and rapidly expanding internet sales. These markets also have a mobile landscape that is more evenly split among a wider base of competitors, yet neither market has achieved the growth seen in Kenya. More players may make development and launching of mobile payment solutions more complex.

The more market share an MNO has, the easier it is to leverage its network of retail agents as educators and customer service points. Indeed, 74% of respondents consider the size of an agent network critical to success.

Agents are the first source of information, and their input is regarded as the most important in eliminating customer's fears regarding fraud and faulty technology that could compromise funds. Just as importantly, agents can accept money for storage on mobile payment products and explain the variety of options available to mobile wallet users.

Governments can also accelerate deployment of advanced payment solutions through financial inclusion policies and development of electronic government payment programmes. These are complementary agendas that have begun to converge with the expansion of mobile payments and the technologies that support them.

In Mexico and Brazil, advances are being made in transferring Government-to-Person (G2P) disbursements away from cash. Both countries have comprehensive social/welfare cash transfer programmes that reach millions of unbanked and under-banked households. The two governments are leveraging branchless banking through networks of nonbank agents and aggressive expansion of POS networks.

In many smaller developing markets, particularly in rural areas, where internet and mobile penetration is below 30%, government programmes can be key for laying the technical infrastructure that will allow financial institutions and MNOs to collectively develop mobile payment solutions.

For example, Kigali, the capital of Rwanda, became the first city in East Africa to launch free wireless internet in specific areas of the capital last year. Rwanda has 1 million internet users and is targeting 5 million by 2016. The government strongly believes that information and communications technology will enable the country to transition into comprehensive financial inclusion.

Recognizing the high cost of smart phones, the government also launched a programme called Vizio, which will collectively negotiate with cellular phone manufacturers on behalf of banks and MNOs in order to pass on cost savings to low income consumers.

85% of survey respondents agree or strongly agree that m-payments will grow faster in developing markets.

15. Wearable tech

For the first time in the survey, we included a new question regarding the potential of "connected commerce," defined as events or transactions initiated from a connected object such as a car, a TV or a wearable device.

Wearable devices are connected devices that can be worn as accessories and perform specific tasks like displaying alerts and messages or recording information (e.g. location, speed, distance). These can exist in a variety of formats, including smart glasses (e.g. Google Glass), watches (e.g. Pebble, Samsung Galaxy Gear), bracelets (e.g. FitBit) and shoes (e.g. Nike).

TV commerce has been around for some time, and survey respondents clearly see significant potential in its future growth. In contrast, more than half of those who answered the question do not think "wearable-tech" commerce or "wCommerce" – buying things and making payments using smart glasses or watches – will take off.

Nevertheless, results differ markedly. In the case of smart glasses, only 32% agree whereas the figure is 47% for other wearables, such as smart watches or bracelets. Interestingly, respondents in Latin America, Eastern Europe, Asia and Australia are more optimistic about the future of commerce through wearables than those located in North America or Western Europe.

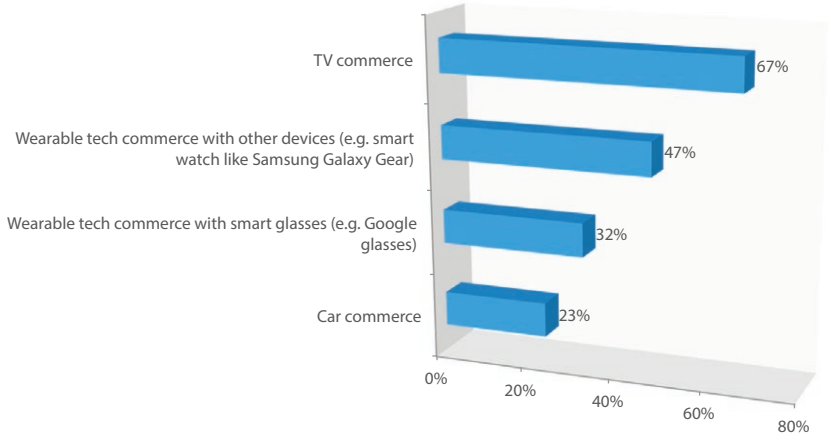
In recent years, these devices have gradually gained ground in the consumer market, especially in niche applications, like fitness and health. But now, we are witnessing the potential rise of more powerful wearables that can complement mobile phones and tablets.

In the case of smart watches and glasses, these are meant to provide timely and important information to the user and are capable of performing basic tasks, like checking messages or receiving navigation instructions. Currently there are hardly any payment services for wearable devices, although there are initiatives aiming to adapt these devices for commerce, by combining them with other technologies such as Bluetooth Low Energy.

We are in very early stages of the wearable technology era, but the payment industry must keep an eye on this trend as it represents the next step in connected commerce. After all, early indications are that users of wearable technologies seem to be very happy with them. A recent survey from the University of London (4,000 US and UK respondents) indicates that 60% of American respondents and 53% of UK respondents agree that wearable tech helps them feel more in control of their lives.

Types of connected commerce most likely to have strong future potential

(% of respondents who agree or strongly agree)



Facilitating the Future of Payments

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