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Contactless payments technology

Catching the new wave

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Contents

Introduction

Despite all the technological developments and new payment methods introduced over the last 30 years, cash is still the preferred payment instrument for everyday, low-value purchases. However, from society's point of view, it is also amongst the most expensive payment instruments to operate. A 2003 study authorised by the European Payments Council estimated the total cost of cash handling to society at €50bn per annum for the EU[i] . This is equivalent to approximately 0.5% of aggregate EU GDP[ii] , or €108 per annum for every citizen[iii] .

Various stakeholders including central and commercial banks, retailers and consumers have to bear this cost. The European Payments Council also estimated that almost 20% of this cost sticks with the commercial banking sector as banks are unable to pass on their full costs of cash handling to their cash using customers. Instead, the usage of cash is cross-subsidised by other payments instruments and bank services, distorting almost everyone's view of the true cost of this instrument. Indeed, it is, like so many other payment instruments, believed to be free.

In reality, a number of non-cash payment instruments, including e-purse, are more economical for society than cash. And one of the strategic goals of the European Payments Council now is to reduce the usage of cash across Europe.

The payments industry has responded to the challenge of finding a suitable replacement for cash by developing a technology that has the potential to help: contactless. Contactless technology can be embedded into existing payment instruments (such as traditional debit and credit cards), or be used to assist in the development of new payment devices (such as key fobs or mobile phones). It promises significant benefits to both consumers and merchants by allowing low-value payments (currently £10 and under, in the UK) to be made more quickly and easily than with cash. Users simply wave a contactless-enabled payment device over a secure reader; there is no need to enter a PIN, or sign a receipt (except as required to control fraud risk – see the 'Contactless Security' section in chapter 3). Further details of how Visa's version of the technology works is explained in the 'How it works' section. MasterCard, Visa's main competitor, has a similar solution.

Contactless payment cards and readers were launched by a number of banks in London in September 2007, with a view to then rolling them out nationwide as quickly as possible. To assist in understanding the overall market opportunity for this technology, and to raise awareness amongst all stakeholders, Visa commissioned Deloitte to undertake a study of the UK's low-value payments market during May and June 2007.

Our work comprised a combination of desk-based research and analysis and interviews with some 31 of the leading merchants across the main cash intensive categories, as well as interviews with all the main card issuing banks and merchant acquirers connected with Visa's London launch. This white paper provides our point of view regarding the market opportunity based on this study. It looks first at the dominance of cash for low-value transactions; goes on to consider the potential benefits of contactless payments to the different stakeholders (consumers, merchants and banks). Finally, it highlights some of the key challenges that will need to be overcome if the technology is to be rolled-out successfully on a national scale.

A follow-up to this paper is planned after the launch of contactless payments in London. It will seek to quantify the actual benefits realised by key stakeholders – particularly merchants – from the adoption of contactless in order to inform the industry's decision regarding the planned national industry roll-out.

We would like to take this opportunity to publicly thank all those who generously gave of their time and insights, and without whose input this study would not have been possible. We hope that in some small way this paper will help the industry in moving towards the successful roll-out of this promising payments technology, from which we believe we all ultimately stand to benefit.

Visa payWave: How It works

Visa's contactless cards are embedded with an antenna and a chip. For low-value payments the chip, via the antenna, is able to communicate with a participating merchant's contactless reader. Consumers briefly hold the card near the secure reader and don't need to enter their PIN. Visa payWave transactions occur in less than a second and are generally processed 'offline'. This means that there is no delay where the terminal attempts to obtain authorisation from the cardholder's bank via the payments network. The payment is then cleared and settled like any other standard EMV transaction. For transactions above the contactless limit, the card continues to behave like a normal chip and PIN card.

Visa payWave is an extension to existing Visa Credit and Debit platforms and contactless transactions appear on the same statement alongside all other transactions made with the same card. And because Visa payWave is built using the same EMV technology that underpins chip and PIN, this means that a relatively small incremental investment is needed for a merchant that already accepts cards to accept contactless payments.

1. Shop
Merchant enters the transaction amount and the contactless reader prompts the cardholder to present their Visa payWave card.

2. Pay
Consumer holds card in front of reader. Within a fraction of a second, terminal display indicated card has been read.

3. Go!
Purchase is complete.

Source: Visa

1. The size of the UK cash segment of the payments market

1.1. Cash is (still) king

Although cash usage has been steadily declining at some 4% per annum for a number of years, and despite the fact that the total value of transactions on cards overtook cash for the first time in 2004, cash is still the king in terms of the volume of transactions.

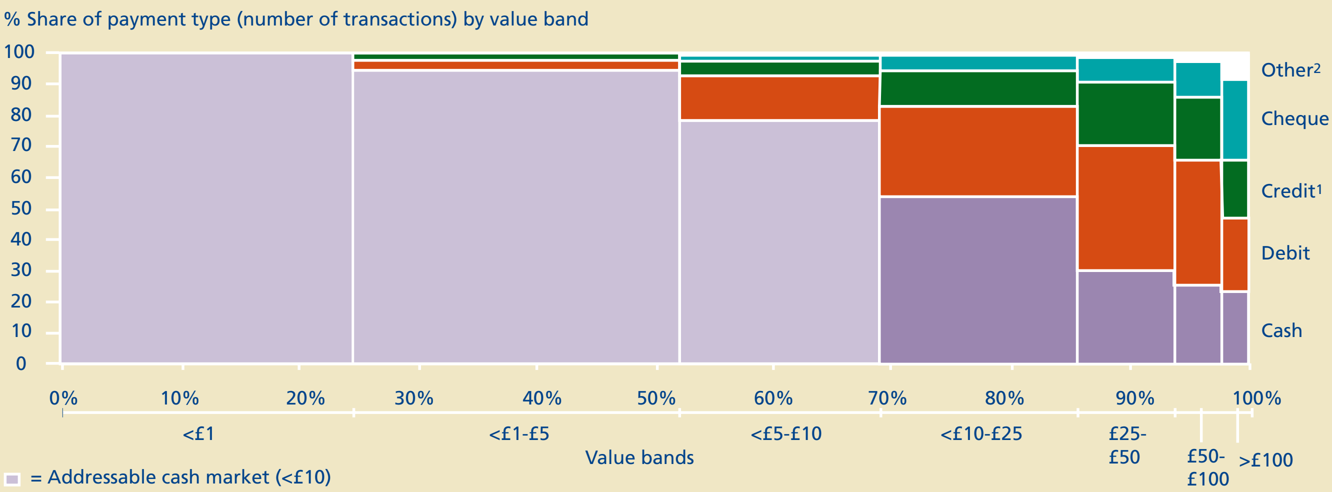
Figure 1: Toal UK cash payments

Source: APACS; Deloitte analysis

According to figures from APACS (the UK Payments Association), cash payments represented nearly 65% of all UK payment transactions in 2005, amounting to some 24 billion transactions. This is equivalent to 400 transactions being made every year by every adult in the UK. APACS estimates that in 2015 around18.5bn transactions, or about 49% of the total, will still be made using cash.

This dominance of cash is even more pronounced when looking at lower-value payments. Indeed, 83% of all cash transactions[iv] are for payments of less than £10. And cash today represents approximately 92% of all sub-£10 payments (see figure 2).

Figure 2: UK Payments Market 2005 by Payment Type: Addressable Cash Market

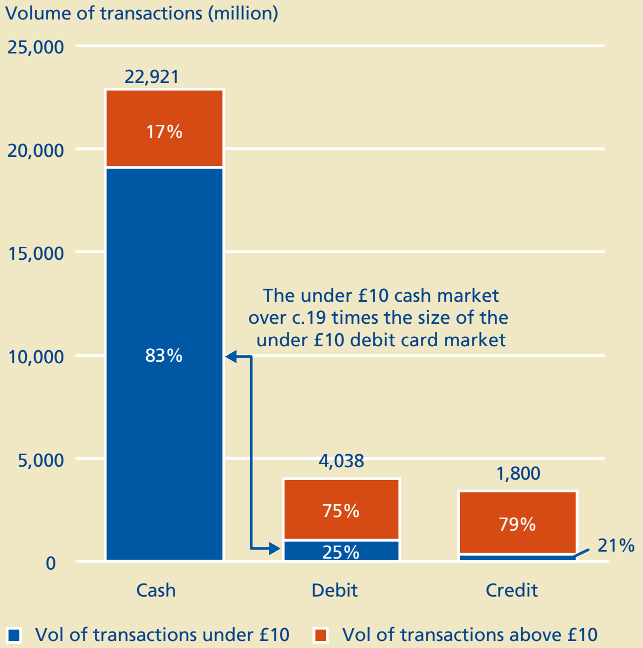


Note: 1 Credit cards include charge and store cards,
2 Denotes telephone/PC banking initiated payments (direct credit payments), postal orders, vouchers and other payment methods
Source: APACS, Deloitte analysis

To help put this in context, Figure 3 compares the volume of cash transactions under £10 to those made using either debit or credit cards. One of the first surprises is that, contrary to popular myth, many people do use bank cards for such low-value payments; but the dominance of cash is clear. Cash is used some 19 times more often than debit cards, and 50 times more often than credit cards.

This can be attributed to a number of factors. First and foremost, perhaps, is customer behaviour. People are quite simply used to paying for small items with coins or notes, and many still perceive that cards can only be used for higher value transactions. In addition, there is a sizeable proportion of the consuming population that doesn't have a card for a variety of reasons.

Figure 3: UK under £10 market size by payment type



Source: APACS, Deloitte Analysis

Just as important, however, are the real barriers of the relative speed of a cash transaction and the lack of card acceptance infrastructure at many of the merchant outlets where these low-value transactions are concentrated. As we will see later, this lack of infrastructure has much to do with the relative cost to the merchant of existing card-based alternatives. And for some, the desire for anonymity is also a factor.

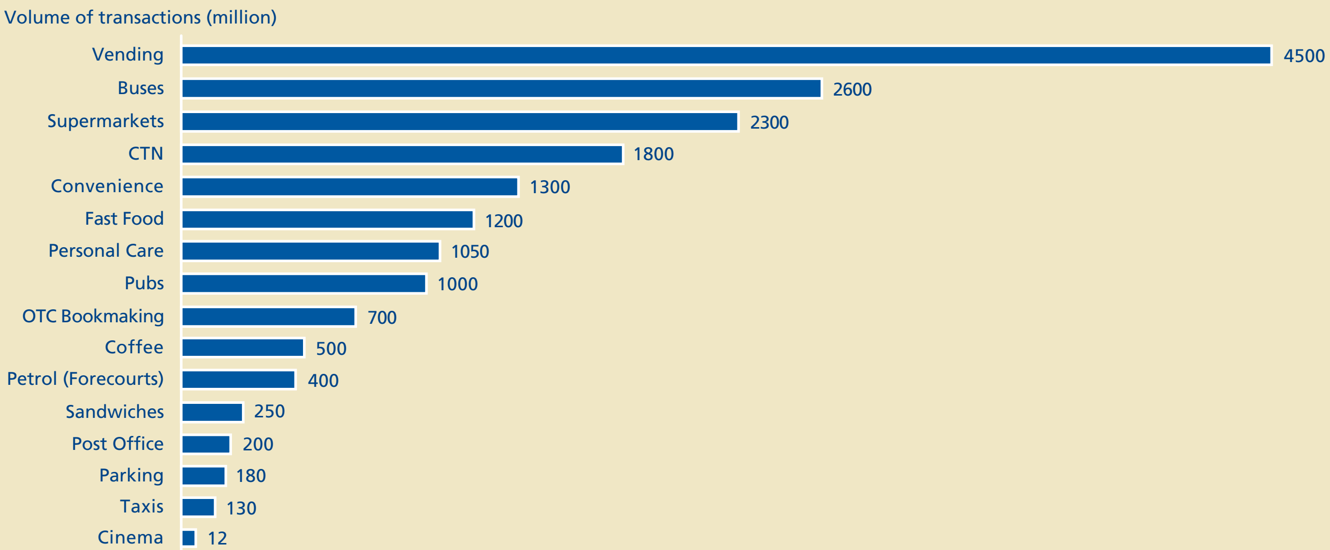
1.2. Vending machines and buses: the hidden giants of the cash market

Interestingly, cash transactions are concentrated within a relatively small number of merchant categories. Based on our analysis, 16 merchant categories[v] make up almost 90% of the under-£10 cash market in UK.

In terms of the number of transactions, Vending machines, Buses (outside London) and Supermarkets dominate the low-value cash segment of the payments market. Together they account for almost 50% of this segment. Vending alone contributes around 4.5bn low-value cash transactions in a year, representing approximately 23% of the total market. To put this in perspective, this converts to approximately 1.5 vending transactions per person per week. Coffee, Sandwich and Fast food chains, which many people intuitively expect to have a high volume of low-value cash transactions, are easily overshadowed by these significantly larger categories when looking at the UK market overall.

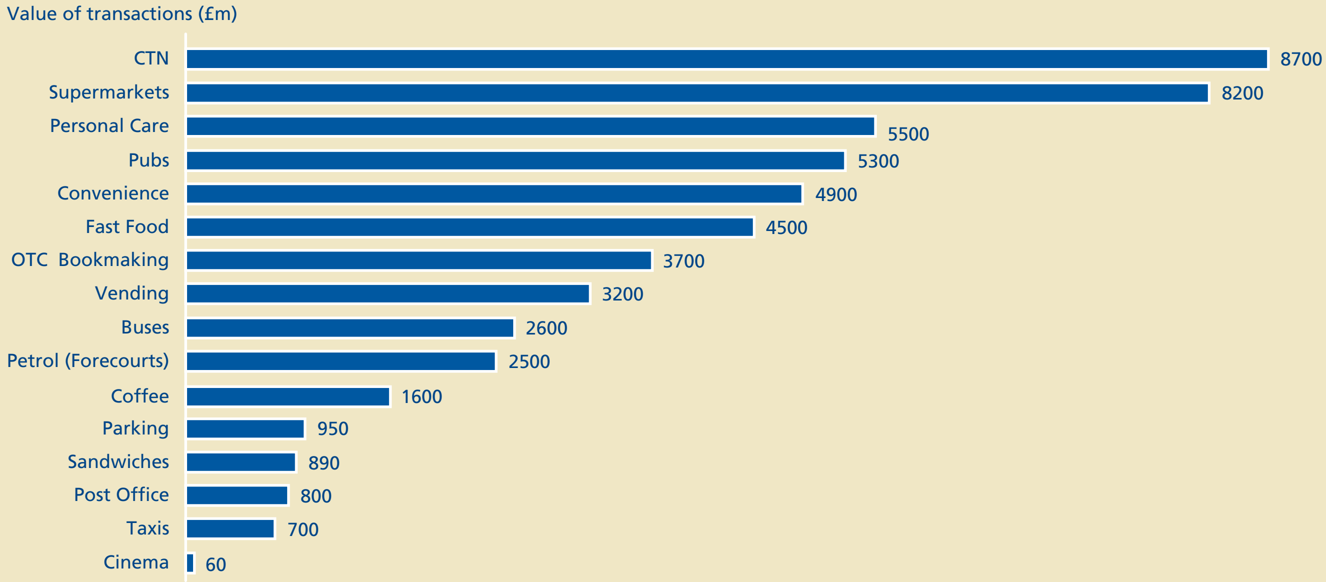
However, due to the relatively low average spend in both Vending and Buses, the picture looks quite different when looking at the total value of transactions being made. Viewed through this lens, Supermarkets and CTNs (confectionery, tobacco and newspapers) dominate the low-value cash segment, together representing some 31% of the segment. They are closely followed by Personal care, Pubs and Convenience stores, driven by an average value of sub-£10 transactions in these categories of between 1.5 and 2 times that of the average for Vending or Buses.

Figure 4: UK under £10 cash market by merchant category (2005)



Source: Keynote, Planet Retail, APACS, Department of Transport, Mintel, Post Office Ltd, Office of Fair Trading, Verdict, Public Carriage Office, IGD, MORI, ABB, Visa, Merchant interviews, Deloitte Analysis

Figure 5: UK under £10 cash merchants by merchant category (2005)



Source: Keynote, Planet Retail, APACS, Department of Transport, Mintel, Post Office Ltd, Office of Fair Trading, Verdict, Public Carriage Office, IGD, MORI, ABB, Visa, Merchant interviews, Deloitte Analysis

2. The benefits of contactless payments

Contactless technology has already been launched successfully in many countries around the world. In particular, Visa's payWave technology has been launched in Malaysia, South Korea, Taiwan and the US, with over 10 million Visa payWave cards already in circulation worldwide. Results from these, and other launches suggest that purchases made using contactless technology can be up to 25% faster than those made with cash. Participating merchants also benefit from the speed and convenience of consumers not always needing to sign or enter a PIN for their low value purchases (other than as required – see the Contactless Security section in chapter 3) for their purchases under the low-value limit imposed in these markets[vi] . And this increase in speed and convenience has been shown to translate directly into better commercial performance. For example, Watsons in Taiwan reported that customers paying with Visa payWave take just four to six seconds per transaction, compared with up to 35 seconds for those using a traditional magnetic stripe card. Watsons go on to claim that this has led to a reduction in average queuing time of 77%, resulting in higher turnover at the point of sale; and that their average transaction value has increased 2.3 times when compared to cash purchases[vii] . And similar claims are made in relation to MasterCard's technology.

However, our study has shown that there is scepticism amongst many UK stakeholders, particularly merchants who will need to see real economic benefit if they are to embrace this new technology. The post-launch follow-up paper mentioned in the introduction will seek to understand the relevance of these findings for the UK. It will quantify the actual impact on UK stakeholders' businesses of the adoption of contactless payments in London, providing the basis for a rational, fact-based decision on the adoption of this promising technology nationwide. In the meantime, it is worth summarising the key benefits that are expected to be delivered to different stakeholders by contactless payments and some initial perspectives on these benefits.

2.1. The benefits for consumers

To assess the appeal of contactless payments to consumers, and to determine the perceived benefits from and barriers to the technology's uptake, Visa commissioned a consumer survey, through GfK NOP , in October 2006. The sample group included 309 respondents, equally split between males and females, and evenly distributed across the key 18 to 64 age group. All respondents held either a debit or credit card (or both). Respondents selected were already card users and indicated that they were not averse to using the card for low-value purchases. Overall there was a very favourable response, with respondents focusing their attention on the potential speed, ease of use and convenience of the product. In total 71% of respondents said that they would be either "quite likely" or "very likely" to use a contactless card if it was introduced. Although there was little variation across the different segments, younger respondents viewed the new technology slightly more favourably. In terms of where people saw themselves using the new capability; top-up shopping, CTNs and transport were amongst the most-preferred categories. Whilst security surfaced as a concern for some, once respondents understood the £10 limit, this concern was significantly reduced.

In summary, the four main perceived benefits from using contactless are:

- Reduced queuing times. Contactless transactions are expected to be significantly faster than a Chip & PIN or cash transaction, thereby having the potential to reduce the queuing time for consumers.

- Convenience. Contactless was seen as being a more convenient way of making low-value payments. Instead of fumbling for cash at vending machines or parking kiosks, consumers can just wave the card and go.

- Easier than carrying cash. One of the main perceived benefits was the simple ability to not have to carry change around. This was seen as both reducing the risk of losing money and the inconvenience of not having sufficient cash to pay for whatever the consumer is wanting to purchase.

- Integration with existing cards. There is no requirement to carry a new card. The contactless technology will be integrated with the existing debit or credit card.

Additional qualitative research with RDSi, also commissioned by Visa, broadly confirmed the above findings and also revealed that consumers are strongly attracted to the innovative and "trendy" aspects of contactless. Unlike most financial service products, where security and reliability are often foremost in the consumer mindset, respondents noted that contactless provides both banks and merchants the opportunity to provide greater convenience and perhaps even inject an element of "excitement and fun" into everyday life. Clearly from a marketing perspective these attributes could be an important driver for differentiation and preference in the marketplace.

The London launch will help assess just how compelling, or otherwise, these potential benefits are in practice.

2.2. The benefits for merchants

Our research with leading merchants across all the main cash-intensive categories confirmed that there will be a different business case for each merchant. Although the merchants we talked to generally accepted that contactless payments technology has the potential to impact each of the major value drivers listed below, the scale of any impact was seen as being highly situational. Factors such as the percentage of business conducted during peak hours, the intensity of local competition, and the individual merchant's customer service model were highlighted as important variables, even within categories. To take the coffee chains as an example; the speed of payment is more relevant to throughput in a coffee chain where one person takes the order and processes the payment, and another (the "barista") actually makes the drink, compared to where the same individual carries out both activities.

Nevertheless, we can make some useful generalisations in relation to the following major benefits:

- Improved speed of throughput. Visa's 'Understanding Everyday' research[ix] revealed that some 70% of people will walk out of a shop if the queue is "too long". Where speed of payment processing is a significant proportion of the total time to 'serve' a customer, and where there are distinct peaks in demand with a high risk of customer loss, the increased speed of contactless is seen as being of significant potential value. For some Fast Food chains, Coffee and Sandwich stores, who may transact up to 70-95% of their total business during a relatively small number of peak hours, the potential to reduce lost sales due to excessive queue lengths was seen as potentially very valuable.

- Increase in average transaction value (ATV). One of many "halo" effects often associated with card-based payments, this is the benefit that our analysis has shown has the potential to create the most value for merchants. How does this happen? Basically, by removing the actual or psychological constraint imposed on a person's expenditure arising from the need to part with the physical cash they have in their pocket. The potential for this effect will vary significantly both across merchant categories and, potentially, within them. For example, a number of the CTN, Coffee, Fast food, and Sandwich stores that we spoke to said that they expect a significant increase in ATV when customers switch to paying by card. Although all found it difficult to put a hard number on what the effect might be – this is something that the data gathered through the London launch will seek to address. On the other hand, Parking, Taxis, Buses and, to a lesser extent Vending, expect to see no measurable increase in ATV.

  Interestingly, even for these latter categories there is still a possibility of increasing revenue. Parking and Vending are two industries which predominantly accept cash. But the fact that virtually all transactions are through automated 'kiosks' means that product pricing tends to be limited to a multiple of the most common denominations of coin, namely 5p, 10p, 20p, 50p and £1. Acceptance of contactless cards would create the flexibility to make smaller incremental price changes of as little as 1p, opening up the possibility of more frequent price increases and more sophisticated pricing. And for Vending, by removing the need for physical cash, contactless also has the potential to open up new higher-value goods to the industry.

  The counter argument advanced by the sceptics, however, is that the method of payment – and particularly one that is not explicitly linked to bringing "new money" into the system in the form of credit – will not increase aggregate demand. And they go on to argue that even if the cost to the consumer of making the transaction (in terms of time, etc.) may have been reduced, this alone will not be sufficient to increase overall consumption. Clearly these are valid points. But only time – and careful measurement of the actual impact of the London launch – will help all parties understand the relative balance of these arguments.

- Competitive differentiation. By improving the overall customer experience, a number of merchants stated that they would expect to see an increase in footfall and, thus, the volume of transactions. At least until their competitors catch up. Virtually all the merchants we spoke to recognised that if their main competitors embraced the new technology, and if consumers also adopted it in large numbers, they would have to follow suit.

- Reduction in cost. In the short term this is expected to come from a reduction in the variable costs associated with cash, namely bank charges, the costs of cash handling (transport, security, etc.) and leakage. Longer term, cost savings or improvements in productivity could be unlocked by merchants re-organising their activities to take advantage of the changed work-load associated with accepting contactless payments. However, our interviews strongly suggested that for most merchants cost reduction will not be the main driver of their decision to move to accepting contactless card-based payments, and indeed the very obvious direct cost of new card-based transactions could represent a significant barrier.

  The true costs of cash are often misunderstood, particularly by smaller merchants. This situation is not helped by banks' tendency to provide a bundled service that offers little or no transparency of their cash-related charges. Larger retailers, on the other hand, tend to have a much better understanding of both their variable and fully-loaded cash acceptance costs, and some have spent considerable time and effort to reduce these costs over the years. The end result is that most of the merchants we spoke to currently perceive that their cash-related costs are very low – one merchant quoted a cost of as little as 5p per £100. Certainly the perception is that cash costs are lower than the currently proposed rate of debit interchange.

  But it is not all doom and gloom on this front for supporters of contactless. Some merchants – such as those in the Parking and Vending industries, where fully-loaded costs can be as high as £7 per £100 – see significant potential value coming from contactless' ability to reduce their costs. Especially once consumer penetration gets to the point where they can dispense with the need to handle cash altogether.

- In addition to the tangible benefits highlighted above, our research also surfaced a number of potential strategic benefits for the merchants. To highlight two:

  - Better customer insight – the transaction-level data that will now be captured represents a potentially rich source of customer insights that merchants can use to improve many aspects of their business, including decisions concerning marketing, promotions and customer service.

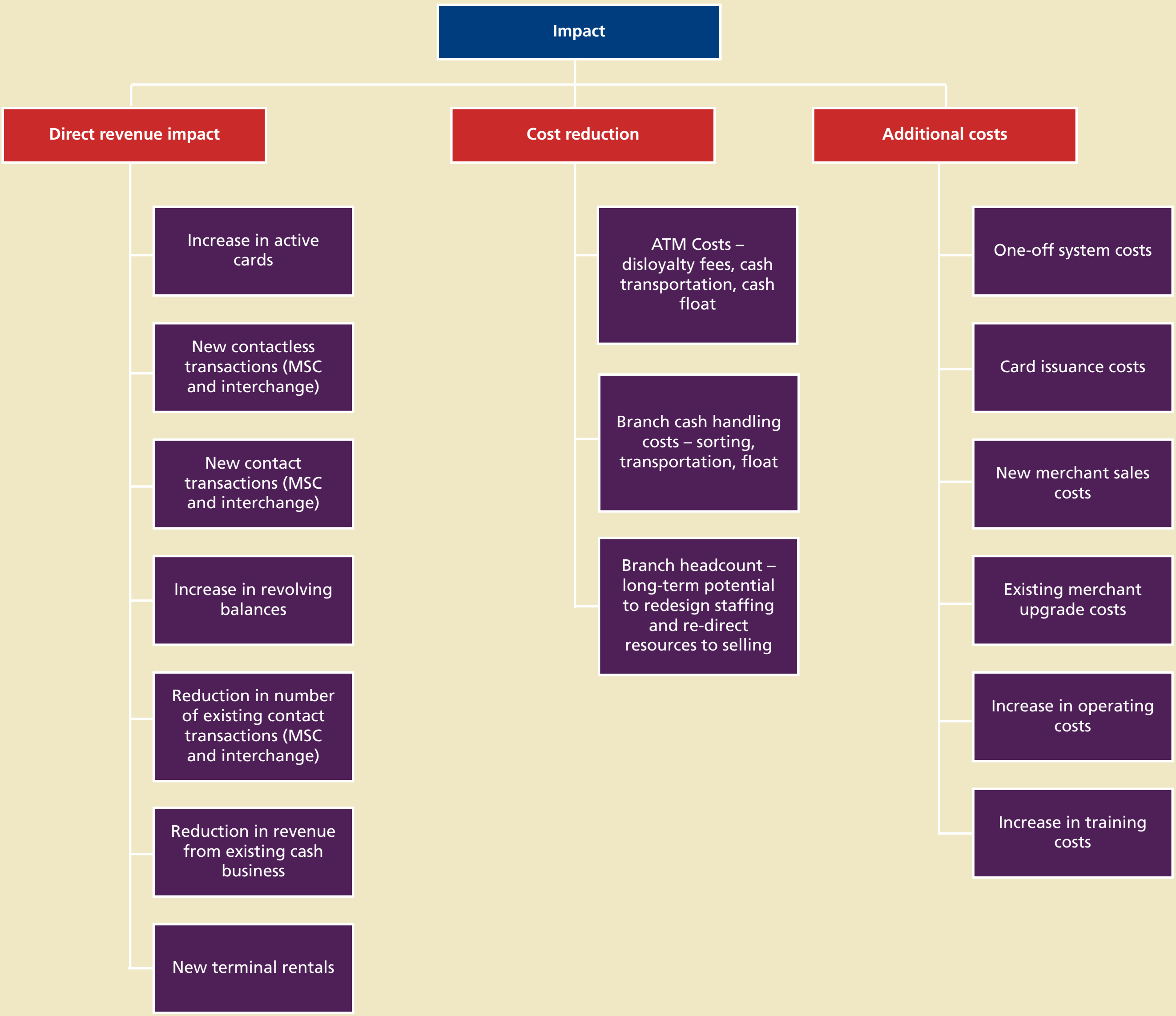
  - Improved service delivery – for example, for bus operators, meeting service level targets regarding on-time performance is an important metric both for current performance-related contracts, and in the bidding process for new contracts. As shown by the success of Oyster cards in London, the punctuality of bus services can be improved significantly. Contactless removes the need for the driver to issue tickets and handle change; speeding the process of boarding the bus.

2.3. The benefits for banks

Finally, based on discussions with all the main banks involved in the Visa payWave launch, our analysis suggests that there is a clear value proposition at the industry level for both issuers and acquirers. This is particularly the case in the longer term if contactless technology is to help to drive a significant reduction in the cash in the economy. However, the position of each individual bank will depend on their underlying business mix, and the short-term business case appears challenging for some parts of the business.

Developing a truly holistic view of the costs and benefits of the roll-out of this technology, covering all the value drivers highlighted in figure 6 below, is clearly a challenge. It will impact on so many aspects of a typical bank's operations – from call centres, through ATM estates and cash transportation, to branches; and across both the retail and business banking divisions. But it is a vital process if banks are to understand and maximise the true opportunity presented by contactless.

Figure 6: Contactless payments – the business case value drivers for banks



3. The challenges ahead: economics, acceptance, communication

A number of challenges exist that need to be tackled head-on if contactless is going to replace cash as the dominant form of low-value payments, namely: economics, acceptance and communications.

3.1. Economics: "Show me the business case"

As mentioned in the introduction, while it is generally recognised that cash is more costly to society than electronic payment mechanisms, cash still stubbornly refuses to go away. Why is that? One of the key factors for the persistence of cash is price. To compete for low-value payments contactless cards need to compete against the incumbent – cash. Cash is perceived as being free by consumers and merchants believe it is very inexpensive, at least in part due to a lack of transparency regarding the true costs involved (as discussed in more detail above).

The challenge for the industry is to find a model that enables the delivery of a card infrastructure into the low-value space at a competitive price. Contactless is certainly a lower cost solution than traditional contact cards as the transaction is authorised offline and therefore results in a lower processing burden. However, it seems likely that absent a truly compelling case around the revenue uplift associated with a shift to cards, the industry will need to re-examine the existing cards pricing model when applied to low-value payments. For example, a "one-price-fits-all" rate of interchange may not provide merchant acquirers with enough flexibility in setting the merchant service charge (MSC) in some merchant categories with very thin margins, particularly when it is a pure fixed charge, as it is for debit cards.

As can be seen from the example in Figure 7, unless merchant B can avoid significant cash payment acceptance costs, it is uneconomical for merchant B to accept debit cards for payments; and barely worthwhile accepting credit cards. However, if the cost is lowered too far it may prove to be uneconomical for the banks to provide the card infrastructure. For example, applying pure ad valorem pricing to both credit and debit transactions for a transaction with an ATV of £1 pound would only generate fees to the payments industry of 1.5p, assuming a tariff of 1.5% as above; a fee that does not get close to covering the actual costs of today's end-to-end payments infrastructure.

In our view, solving this particular conundrum, and driving rapid merchant acceptance, will require a more creative, tailored approach to pricing, even if substantial revenue upside can be proven.

3.2. Acceptance: "Where can I go?"

One of the classical problems associated with new card initiatives is the effect of 'network externalities'. For a card initiative to work it requires acceptance and issuance to go hand in hand. If this does not occur, the value of the contactless proposition will be significantly diluted and the initiative may ultimately fail.

For contactless to become established, there needs to be a concerted effort on the behalf of acquirers and issuers to ensure there are enough contactless acceptance points and contactless cards in the market at the same time to drive usage – a difficult challenge considering the ubiquity of cash acceptance. And to maximise industry value creation, the faster the roll-out, the better.

3.3. Communication: "What's it all about?"

Finally, we believe that a comprehensive industry-wide communication process needs to be put in place to ensure that the benefits of contactless are clear to all. Many of the merchants we spoke to, delivered this message to us loud and clear.

For consumers, an approach similar to that utilised in the Chip & PIN roll-out – a description of how to use the card, why to use the card and where to use the card – may be appropriate. Although careful consideration will need to be given to how to communicate the security features of contactless since the payment industry has just finished educating consumers how important it is to use a PIN for card transactions.

For merchants, nothing less than an approach based on the proven value delivered through the London launch is likely to suffice.

Figure 7: Illustrative example

		Merchant margin		
Merchant	**Average transaction value**	**Current net margin**	**If payment by debit card***	**If payment by credit card***
Merchant A (e.g. CTN)	£8.00	3%	14p	12p
Merchant B (e.g. Convenience store)	£3.00	2%	-4p	1.5p

*Assuming total MSC =10p per debit transaction and 1.5% for a credit transaction applied to assumed ATV
(Notes: these values are for illustrative purposes only and do not reflect actual MSC rates)

Contactless Security: leveraging EMV

Visa payWave builds on existing EMV standard technology, bringing a number of security benefits, as described below.

Because the card contains an embedded 'intelligent' chip, that is secured using advanced cryptographic technology, it permits Visa payWave transactions to operate 'offline' (i.e. without the need to communicate with the Issuing bank via the payments network to obtain authorisation for each transaction), payWave operates without the need for PIN entry, enabling payments to be processed in less than one second.

However, in order to control the risk exposure associated with lost or stolen cards, Visa payWave utilises advanced EMV features to track the amount that a cardholder has spent using the contactless interface. If the chip detects successive contactless payments that reach a value threshold defined by the issuing bank (e.g. £50), then the chip will instruct the terminal to 'fall forward' to a standard chip and PIN transaction. The card will no longer perform Visa payWave transactions until a successful chip and PIN transaction has been made. This enables the Issuing bank to validate the PIN and ensure that the cardholder is still in possession of their card.

If cardholders utilise their cards in a 'normal' spending pattern, with a mixture of contactless and chip and PIN transactions, each time they enter their PIN for a transaction above £10, the risk management threshold will be reset. This means that the 'fall-forward' check will only be triggered if numerous successive contactless transactions are made without any chip and PIN transactions in between. From a cardholder perspective, the experience is seamless and the requirement to enter a PIN is communicated to them by a simple message via the merchant.

Finally, if the chip detects unusual Visa payWave spending patterns it will temporarily disable the contactless feature and ask the cardholder to perform a normal chip and PIN transaction. This is a normal routine check for the cardholder's protection and once the required chip and PIN transaction has been completed, the card will re-enable the contactless feature.

Source: Visa

Summary

A new wave is upon us.

The ability to use cards for low-value payments has long been seen as the holy grail of the cards industry; attacking cash in its stronghold and thereby eliminating this costly payment device from society.

It is a significant stronghold. Cash payments accounted for approximately 65% of the total volume of UK payments in 2005, with the overwhelming majority of these cash transactions occurring for less than £10. It is a highly concentrated stronghold, with eight merchant categories making up more than 80% of the low-value cash market.

Based on our study we believe that contactless has the potential to deliver a number of key benefits to all stakeholders in the payments value chain:

Stakeholder	Key benefits
Consumers	• Reduced queuing times • Increased convenience making low-value payments • Easier than carrying cash • Integration with existing cards
Merchants	• Improved speed of throughput • Increased average transaction value • Competitive differentiation • Reduced costs • Better customer insight (through capture of transaction-level data) • Improved service delivery
Banks	• Increased revenue opportunity • Reduced costs

However, to capture this opportunity and realise the benefits for the stakeholders there are some challenges the industry must address:

- Economics – the pricing adopted by the industry will need to reflect the high volume / low margin structure of the low-value market place, even if compelling revenue upside can be proven via the London launch.
- Acceptance – issuers and acquirers must work in concert to drive the market and help contactless to become as ubiquitous as cash.
- Communication – as with the recent Chip and PIN PR campaign, the benefits must be clearly communicated to all stakeholders to drive usage and acceptance.

Contactless provides the industry with an innovative way to attack cash. But to grasp the opportunity the industry needs to recognise and overcome the challenges together, to deliver what look likely to be substantial benefits to all stakeholders from the successful adoption of this technology for low-value payments.

Disclaimer

This report has been written in general terms and therefore cannot be relied on to cover specific situations and does not form a substitute for considered specific advice tailored to your circumstances. Applications of the principles set out will depend on the particular circumstances involved and we recommend that you obtain professional advice before acting or refraining from acting on any of the contents of this report. No party is entitled to rely on our report for any purpose whatsoever and we accept no duty of care or liability to any party.

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The payments industry is experiencing a period of unprecedented change. Deloitte's payment practice has been at the heart of some of the largest and most innovative payments programmes in recent years. We work with all industry players, from local and central government, to corporates and merchants, as well as the banks, processors, associations and utilities that deliver the payments services upon which we all rely. Leveraging the full breadth and depth of our global multi-disciplinary firm, we deliver outstanding advice and practical solutions to help our clients to control costs, manage risks, enhance revenues and drive competitive advantage.

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In Europe, there are nearly 321 million Visa debit, credit and commercial cards. In the 12 months ending September 2006, those cards were used to make purchases and cash withdrawals to the value of over €1.2 trillion. For every €9 spent in Europe today, €1 is spent on a Visa card.

Visa Europe is a membership association – an organisation owned and operated by its 4,500 European member banks. As a dedicated European payment system it is able to respond quickly to the specific market needs of European banks and their customers.

Visa enjoys unsurpassed acceptance around the world.
Website: www.visaeurope.com

i European Payments Council – Single Euro Cash Area, March 2006.
ii Based on total EU GDP = €10trillion in 2004.
iii Based on total EU residents in 2004 = 460m.
iv Excluding P2P transactions.
v The 16 merchant categories that comprise 90% of the low-value cash market are: Buses (non-London), Cinema, Coffee, CTNs, Fast food, OTC Bookmaking, Convenience, Supermarkets, Parking, Personal Care, Petrol (forecourts), Post office, Pubs, Sandwiches, Taxis (black-cabs), and Vending.
vi The upper limit for using contactless cards in the US is $25.
vii See: http://www.jcbcorporate.com/english/news/20070226_1.html
viii GfK NOP – Contactless Payments: GB, October 2006.
ix Visa's 'Understanding Everyday' study, June 2005: The Understanding Everyday study is a six-month research project investigating different aspects of everyday life. The release of the study's initial findings coincided with the launch of Visa's new UK advertising campaign to encourage its cardholders to make life easier by using their card instead of cash or cheques.

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