Apple.

Taking a byte out of consumer payments

Have mainstream mobile payments finally arrived?
Changing consumer payments
Challenging tradition

INTRODUCTION

The consumer payments market is being irreversibly disrupted. There has been a fundamental change in the way we can pay for goods and services around the world.

The pace of this change has increased rapidly, and it is an increase that history shows us is set to continue. In 3000 BC, our primary payment method was grain. It took two thousand years for us to find a better way and start paying with crude metal coins. More recently, in the '20s when the charge card was introduced, it took another 30 years before the credit card was first used. The time between these change events is shrinking fast. It only took Apple three years to launch Apple Pay after Google gave us the first digital wallet – just one tenth of the time between the charge card and the credit card (Figure 2).

Increasing customer expectations and innovations in technology mean that we will see more frequent changes to the way we can pay. And as consumers, we know it. A recent survey found that 70% of the first tech-savvy generation believe that the way we make payments will be radically different in five years' time. Over the past four years the volume of mobile payments has already increased by over 60%, while non-banks have increased their share of financial transactions by 85%. The UK is a relatively mature payments market and we are already seeing the impacts of these changes on traditional payment methods (Figure I).

So, what does this mean for the big institutions? We all know that payments are an integral part of our everyday life, so any big change in the way we choose to pay will challenge their core business models. This applies to retailers, banks, card associations and regulators. They must effectively and quickly change in order to remain relevant to customers, and keep their business alive.

Over the following pages, we identify some of the innovations in payments that are already impacting traditional industry models and assess the implications. We take an in-depth look at Apple Pay and how it is on the cusp of setting the next big wave of disruption in motion.

Figure 1: Trends in the UK Payments market, 2010-2014
### Development of payments
**From barter to digital wallets**

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000 BC</td>
<td>Shekel (ancient unit of weight for grain used for currency)</td>
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<tr>
<td>1200 BC</td>
<td>Shell money</td>
</tr>
<tr>
<td>1000 - 600 BC</td>
<td>Crude metal coins</td>
</tr>
<tr>
<td>700 BC</td>
<td>Precious metal coins</td>
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<tr>
<td>1659</td>
<td>The earliest known handwritten cheque</td>
</tr>
<tr>
<td>1816</td>
<td>Gold is officially the standard of value in England</td>
</tr>
<tr>
<td>1913</td>
<td>The Federal Reserve System is created in the US, establishing a central bank as well as gold-backed federal reserve notes</td>
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<tr>
<td>1920s</td>
<td>Department stores, hotel chains and service stations start providing charge cards to customers</td>
</tr>
<tr>
<td>1950s</td>
<td>Diners Club releases its first credit card which could be used in more than 20 restaurants in New York</td>
</tr>
<tr>
<td>1966</td>
<td>Barclays issues its first UK credit card</td>
</tr>
<tr>
<td>1994</td>
<td>One of the first documented online purchases was a pepperoni pizza from Pizza Hut</td>
</tr>
<tr>
<td>1997</td>
<td>Mobile-commerce was established when Coca-Cola set up several vending machines which could accept payment via text message</td>
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<tr>
<td>1997</td>
<td>Nationwide introduces one of the first internet banking services</td>
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<tr>
<td>2003</td>
<td>Transport for London introduces Oyster cards to pay for transport in London</td>
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<tr>
<td>2003</td>
<td>Chip and PIN (also known as Europay, MasterCard, Visa (EMV)) is introduced</td>
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<tr>
<td>2009</td>
<td>Bitcoin is created, a form of digital cryptocurrency</td>
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<tr>
<td>2010</td>
<td>Square is launched, allowing smartphone users in the US to make credit card payments using a Chip and PIN reader connected to a handset via Bluetooth</td>
</tr>
<tr>
<td>2011</td>
<td>Starbucks accepts mobile payments through its app</td>
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<tr>
<td>2011</td>
<td>Google Wallet, a comprehensive mobile payment system, is launched</td>
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<tr>
<td>2012</td>
<td>Powa launches and aims to innovate the payment experience; SelfPay was founded with the aim of improving the shopper experience by allowing in-store customers full self-checkout on their smartphone.</td>
</tr>
<tr>
<td>2014</td>
<td>Barclays trials bPay, enabling NFC payment with a wrist band</td>
</tr>
<tr>
<td>2014</td>
<td>Apple Pay, Apple’s mobile payment and digital wallet service is launched</td>
</tr>
<tr>
<td>2014</td>
<td>Contactless card payment becomes widespread - ‘contactless’ makes Oxford Dictionary’s word of the year shortlist</td>
</tr>
</tbody>
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**Figure 2:** The development of payments
21st Century payments
From evolution to innovation

The early 2000s delivered a number of changes in the way that we make payments - from the growth of Chip and PIN (EMV) card payments, to real time payments processing and being able to ‘pay by app’ without any need for our wallets (Figure 3).

All these changes were an extension of existing payment mechanisms, driven by large organisations, but they certainly did not disrupt the payments market. Instead, they helped it to evolve from a paper and plastic market to one that enabled fast, easy and secure e-payments.

Real disruption and innovation is driven by start-ups who have the scale and structure to remain agile and capitalise on opportunities as they arise. Large companies are tied to traditional structures and hierarchies and find this difficult to emulate⁵. This is what we are seeing in the consumer payments market today – smaller, non-traditional players such as Powa and Poynt are disrupting the consumer payments markets with new offerings.

We have identified four key areas set to transform the consumer payments market as shown on the next page.

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**Figure 3: 21st Century Payments Innovation**

<table>
<thead>
<tr>
<th>EMV (Europay, MasterCard &amp; Visa)</th>
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<tbody>
<tr>
<td>Published in 1996 to reduce card fraud, EMV set the standard for Chip and PIN technology. It is widely used across Europe, however, has not been adopted in the US until recently. Between July 2013 – June 2014, the number of EMV card transactions was 29.7% globally and 96.3% across parts of Europe⁶.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Real Time Payments</th>
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<tbody>
<tr>
<td>Launched in the UK in 2008, the Faster Payments scheme offers immediate payment services. It remains the only near real time 24/7 payment service across Western Europe. The use of Faster Payments is growing at 20% annually⁷. In 2013 it accounted for 13% of all payments cleared in the UK⁸.</td>
</tr>
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<tr>
<th>Payment Loyalty Schemes</th>
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<tr>
<td>In 2011 Starbucks was the first to launch a loyalty app that enabled pre-funded balances and ‘pay by app’. Within 15 months of launch, 25% of all Starbucks purchases across North America were made in this way – 42 million payments⁹. This concept has now been adopted by other establishments like Harris &amp; Hoole in the UK. There are also companies such as SelfPay, who are building platforms that can become a one-stop shop for customers across multiple retailers.</td>
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</tbody>
</table>
21st Century payments
From evolution to innovation

1. ONLINE PAYMENTS

Established in 1998, PayPal was one of the first disruptive forces in consumer payments. Today, they process nearly 10 million payments per day and by enabling quick, easy and secure payments, they are shifting consumer attitudes to online payment.

More than that, PayPal has begun to irreversibly alter our reliance on traditional financial services providers and payments processors. With a quarter of people expecting that they are “likely” to bank with an alternative digital payment service instead of a large bank within the next two years, this is clearly set to continue.

2 DIGITAL CURRENCIES

More recently, digital currencies such as Bitcoin have begun to disrupt the consumer payments market. We believe that digital currencies will have an important role to play in payments, even if that role is not yet clearly defined.

Just five years ago, many of us had not even heard of digital currency. Yet, on ‘Black Friday’ (2014), Bitcoin was the ninth most popular payment method and we spent the equivalent of $152 million in Bitcoin. It is also now accepted at 75,000 merchants worldwide - no mean feat.

3. OMNI-CHANNEL PAYMENT SYSTEMS

Some of the most exciting and powerful disruptions have come from digital and omni-channel payment systems. Powa is a good example of a British start-up that is disrupting the market – it is now valued at £1.6 billion.

Major UK retailers like Argos have signed up to use their technology, which embeds a digitally encoded signal (a ‘tag’) in advertisements. This means as shoppers, we can bypass the need to search online for an item or enter our card and address details each time we make a purchase. Technologies such as Powa and Poynt aim to improve the customer experience and help increase sales as a result.

4. DIGITAL WALLETS

Google was one of the first to launch a digital wallet and over the last three years, we have seen the widespread emergence of others. Since the initial hype however, Google have retired some of their digital wallet offering as they failed to obtain support from banks and retailers. On top of that, customer fears around data security and information demands hindered any real consumer interest.

Despite this, rivals see the opportunity and are introducing their own services. These include MBNA (UK card issuer launching a digital wallet) and of course Apple, who have recently launched Apple Pay – a digital wallet that addresses many of the challenges experienced by Google. At the launch, they claimed that banks representing 90% of credit card volume had signed up to Apple Pay in the US. Apple is clearly poised to play a key role in the global payments market of the future...
Apple Pay
Set to win the wallets of consumers

So what is different about Apple? Why should they succeed in changing the way consumers can pay where others have failed?

Steve Jobs and Steve Wosniak founded Apple Computer in Cupertino, California in 1977. Their first product was the Apple I computer and even though they only sold 200 units, it established their reputation for great design and innovation. To reflect their wider focus on consumer electronics, including the now iconic iPod, iPhone and iPad, the company dropped the word ‘computer’ from its name in 2007.

Today, Apple is a multinational company with annual sales of over $180 billion, and was valued at more than $700 billion in November 2014 - more than the combined value of IBM, Google and Amazon. In January 2015 they reported a quarterly net profit of $18 billion - the biggest ever made by a public company. Apple is also sitting on a cash pile of $142 billion – more than twice what the entire US Treasury had available in early 2014. This is most definitely a company with the financial resources available to disrupt the consumer payments market.

It also has the reputation. Apple has a track record of disrupting markets - just ask anyone in the music business. Before Apple launched the iPod in 2001 and iTunes in 2003, CD music sales in the US were worth over US$13 billion per year. Thirteen years later this had shrunk by nearly 84% to around $2 billion. In contrast, iTunes sales (which include music revenue) have increased from under $400 million in 2004 to over $18 billion in 2013.

APPLE PAY = PAY APPLE

With a focus on getting the design right in terms of customer experience, security and the business model, Apple is now poised to change the way payments are made both in-store and online. Using the technology embedded in its latest devices, Apple has designed an easy to use approach that is secure (original credit card details are never sent to complete a transaction), anonymous, and does not immediately threaten the revenue of banks and card associations such as Visa and MasterCard. It also does not cost any more for retailers or consumers. In Apple’s own words: “Apple Pay lets you use iPhone and Apple Watch to pay in stores and apps in an easy, secure, and private way.”

One of the most impressive things about the Apple Pay business model is that it is not upsetting the traditional payment industry. Instead of taking the Google Wallet and PayPal approach and competing with the industry head on, they have negotiated deals that include the largest card associations (including Visa, MasterCard and American Express), some of the biggest card issuers in the US, and many significant retailers. Their business model, which has the support of traditional market participants, will enable them to achieve real market penetration and change the way consumer payments are made. By the end of 2014, Apple had already signed up banks and retailers that represented over 90% of US credit card volume.

“One of the most impressive things about the Apple Pay business model is that it is not upsetting the traditional payment industry.”
Apple Pay
Set to win the wallets of consumers

Whilst details of the negotiations and deals with banks and card associations remain under wraps, it is understood that Apple has agreed a business model where they can make up to 0.15% of the value of every transaction. To put that into context: in the UK, cards are used in three out of every four transactions and card spending now exceeds £0.5 trillion every year\(^1\). If Apple Pay were to underpin just 10% of those transactions, this could be worth £75m of new revenue in the UK geography alone. Expanded globally, it could be worth billions in additional revenue to Apple.

Where is the money coming from for this new revenue stream? Details of the deal that Apple has negotiated remain confidential, but it is apparent that consumers and retailers will not pay any more to use Apple Pay in comparison to other NFC payments. But it does mean that banks and card companies will be handing over a share of their revenue to Apple.

This makes sense because it is the banks and card companies that generate card payment revenues. They can afford to give up some of their revenue as they will enjoy a reduced cost of card fraud under the more secure Apple Pay system. This should be a win-win for all concerned.

But, how does Apple Pay ensure security? Two ways: a user must confirm their identity using the touch-ID fingerprint scanner; and credit card numbers are never shared or transmitted – each transaction uses a one-time transaction identity instead of the card details themselves.

The real question concerns Apple’s long-term strategy. Right now they are working in partnership with banks and card companies. Although the Apple Pay approach is innovative, one can definitely argue it is not disruptive.

But what will happen in the future? If Apple becomes established as a trusted brand for payments, the negotiation power will shift away from banks and card companies. Apple could demand a higher proportion of revenue, or even become a more independent payment provider.

Now that would be disruptive.

“If Apple Pay were to underpin just 10% of card transactions, this could be worth £75m of new revenue in the UK alone.”
## Challenging traditional models

### The implications

While the question remains open as to whether Apple will win the battle for the digital wallet, or whether digital currencies will become the norm, one thing is clear. Innovation and disruption within the consumer payments market will continue at pace, and traditional cash and plastic payment methods will become less and less relevant in our digital world. This will have profound implications not just on consumers, but on retailers, banks, card associations and regulators.

### Retailers

**Embrace change**

Many retailers have been tempted to reject payment innovation. However, it is a huge mistake to ignore consumers and limit the ways that they can pay. With the growth in mobile payments, retailers need to embrace payment innovations or risk their customers walking away from sales.

**Be prepared**

With the pace of change set to continue, if not speed up, retailers must define a viable e-payments strategy and prepare their organisations to adopt payment innovation at pace so they don’t get left behind their competition.

**Potential sales growth**

It has been widely proven that consumer spending increases when paying by credit card rather than cash\(^2\), and the more intangible and easier the payment method, the lower the purchase dropout, particularly online. New solutions like PowaTag have the potential to streamline the buying and payment process further, and benefit retailers by making it easier than ever for consumers to spend with them.

### Banks and Card Associations

**Erosion of barriers**

New technology has eroded the infrastructure monopoly in the consumer payments market and many new players have moved in. Competition is increasingly coming from outside the industry and traditional banks and card associations are struggling to connect with consumers the way many new start-ups have.

**Be prepared**

To date, banks and card associations have been slow to respond to the erosion of barriers to entry. These traditional players need to align their organisations around the customer and ensure that they have a clear consumer payments strategy which is supported by an agile and digitally skilled organisation that can respond at pace.

**Innovate**

In order to remain relevant with consumers, banks clearly need to innovate. But how? Encumbered by traditional structures, which often inhibit their ability to innovate, banks must consider forming strategic partnerships with FinTech start-ups. Some have already started to do so: Citi Ventures has partnered with Californian accelerator Plug and Play to launch a global innovation initiative. The aim is to get pitches from start-ups who, if chosen, will be offered mentorship, feedback on product ideas and roadmaps, and introductions to Citi’s global network\(^3\).

### Regulators

Regulators must widen the scope of their initiatives and focus not just on the dynamics of banks and card associations, but to look at the impact that start-ups will have on the market and competitive dynamics. They need to be mindful not to inhibit innovation through unintended consequences of new regulation. Finally they must be sure to protect consumers from new payment providers (who may not be traditional, regulated banks), since as payments become quicker, easier and more intangible, consumers may be more likely to make purchases they cannot afford.
Payments innovation is on the rise

Is your business ready?

The financial and retail markets have been irrevocably disrupted by payments innovation since the turn of the millennium. Over the past few years, the pace of this disruption has been increasing, driven by non-traditional payment providers.

We have witnessed significant investment in new innovation. For example London, a major global financial hub, has attracted $539 million in financial technology investment in 2014 - triple the investment of the previous year24.

This investment will increase levels of innovation and choice in the way consumers make payments.

While we can debate which innovations will emerge victorious over the next few years, what is clear is that there are real and credible disruptors such as Apple who have the financial means, proven track record and industry backing to be very real contenders.

Retailers, banks and card associations must continue to invest in and promote payment innovation to remain relevant to consumers and attract their business. We suggest four key actions that organisations must consider to remain competitive:

1. **Act quickly in response to the threat of disruption**
   - The rate of innovation has increased dramatically over the past few years, and some innovations may be disruptive
   - By not responding to this threat, banks and retailers risk being left behind by their customers and losing business
   - Act now and get on the front foot, by building flexibility into your business model
   - The customer must be at the centre of your business model. Payment solutions that focus on improving the customer experience and reducing security concerns will win.
   - New start-ups are making a big impact, in part due to placing the customer at the heart of what they do. Banks and retailers must learn from their success.

2. **Focus on your customers**
   - Banks and retailers must create an operating model that enables innovation to be identified and exploited. The model should include external partners who can bring a fresh perspective and new capabilities.
   - Most important is a culture that encourages and rewards innovation

3. **Create an operating model that encourages innovation**
   - Technology innovation is driving new payment business models and innovation in consumer payments
   - Due to their risk-averse nature, banks and retailers are often reluctant to adopt cutting edge technology. However, early adoption of the right innovations would be a competitive advantage.

4. **Capitalise on first mover advantage**

Consumer payments will be radically different in five years. Will your business be ready? Or will it get left behind?
References

11. Financial Times. (2014) PayPal poses bigger threat to UK lenders than ‘challenger’ banks. [http://www.ft.com/cms/s/d0bc10c8-7c96-11e4-9a86-00144feabdc0.Authorised=false.html?i_location=http%3A%2F%2Fwww.ft.com%2Fcms%2Fcs%2F0%2F0%2Fb0bc10c8-7c96-11e4-9a86-00144feabdc0.html%3Fsiteedition%3Duk%26siteedition=uk&i.referer=aaxzzziqAT5L](http://www.ft.com/cms/s/d0bc10c8-7c96-11e4-9a86-00144feabdc0.Authorised=false.html?i_location=http%3A%2F%2Fwww.ft.com%2Fcms%2Fcs%2F0%2F0%2Fb0bc10c8-7c96-11e4-9a86-00144feabdc0.html%3Fsiteedition%3Duk%26siteedition=uk&i.referer=aaxzzziqAT5L)
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