

Game of Phones: The Giants' Power Play in Mobile Payments

HCE Work Group
Mobey Forum 2015

DRAFT

FOR MOBEY'S MEMBER REVIEW

[front page to be re-designed, as well as all the matrices]

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1 Executive summary

Given the degree of 'cool' with which Apple endows nearly all it does, it's easy to forget that just a few years ago, NFC based mobile payments were viewed as a missed opportunity, strangled at birth by the inability of banks and MNOs to agree business terms. Now, thanks to HCE and to Apple Pay, they are at the centre of the fiercest power plays in the financial services industry. Other OEMs are rushing to join the party and new announcements about mobile payments are made daily.

This paper contends that banks can learn much from what Apple, Samsung, Google and potentially Microsoft are doing with mobile payments today, what their strengths are, and in particular from how the main OEM¹ players vary in their control of the mobile device, software and retail environment. Apple appears to have firm control over Apple Pay and its place in the payments ecosystem. Google is extending control over data use and bases its business model on data.

While this situation leaves banks with much to think about, Mobey Forum suggests that banks cannot afford to delay acting much longer. At stake is not just a place in the mobile payments ecosystem but the future of their customer relationships.

In addition, banks should consider other questions such as:

- The potential impact of current regulatory trends
- How the major payments schemes, together with their offerings, may evolve
- The future of HCE on Android
- Why value added services matter
- The fickleness of consumer opinion and
- The security of tokenisation

The answers can then help banks as they decide how to proceed. However, any decision must be based on a fundamental shift in bank attitudes to the profitability of mobile payments. Instead of expecting a significant return on investment, banks should view them as a loss leader, the price of keeping them in the game.

Mobey Forum has identified a range of strategic options for banks, working alone or in partnership, but in reality these options can be condensed to two – to retain the customer relationship by offering payments via their customers' smart devices or to choose a future as a back office utility.

2 Introduction

The goal of this paper is to examine the current state of play in mobile payments and to draw out the most significant factors for banks to consider in defining their strategy. As financial services as a whole continue to move from the physical branch to the mobile device, NFC, which only a few years ago was on the verge of being written off as 'not for consumers', is now upfront and central in the strategy, not just of banks but of major OEMs such as Apple and Samsung too.

For banks, it's a confusing time. There are multiple options to consider and at the same time they face the prospect of losing end-to-end control over consumer payments, while retaining responsibility for consumer protection, privacy and liability. For some, it all appears enough to induce paralysis.

¹ OEM: Original Equipment Manufacturer, used in this context to describe Apple, Google, Samsung, Microsoft, LG etc.

2.1 Payments via connected devices. Are banks becoming payment 'pipes'?

In the two years since Google incorporated Host Card Emulation (HCE) support into its Android operating system, much has changed in the mobile payments ecosystem. Interest in mobile payments appears to have taken off, new players have entered the market and older players appear to have been side-lined. Strategic possibilities that once appeared viable like 'single bank only' payment wallets without value added services have now ceased to be a realistic option.

Where previously mobile network operators (MNOs) controlled the SIM and acted as gatekeepers to NFC mobile payments, now they appear disintermediated, facing the prospect of becoming just 'pipes'². Instead, boosted by the launch of Apple Pay, OEMs appear in charge. How should banks respond in order to avoid the same fate that MNOs suffered just some months earlier?

In fact, over this two-year period many banks have chosen, either deliberately or by default, not to respond. Some were waiting to see what Apple would do. Now other OEMs are responding and many banks continue to hesitate.

Others have moved into mobile payments as pioneers and are now in a position to review whether their strategic direction to date is still the correct choice for the future.

Previous papers from Mobey Forum have examined HCE³, the technology behind this paradigm shift, and have provided a high level analysis of stakeholders active and the options available in the ecosystem⁴. There is, however, still room for a more current examination of how the direction of the different 'OEM' pays create potential scenarios that banks need to seriously consider if they are not to be left out.

2.2 A brief introduction to the major 'Pays'

This chapter focuses on the existing and probable mobile payment offerings from four major OEMs – Apple, Samsung, Microsoft and Google.

2.2.1 Apple Pay

Apple Pay was launched in the US in October 2014, in the UK in July 2015 and in Canada and Australia in November 2015. It can be used with the iPhone 6 onwards and the iPhone 5 in combination with the Apple Watch. Apple Pay uses tokenisation and an embedded Secure Element within the handset for security. Authentication is supported by the TouchID fingerprint scanner. While not the first to launch a payments app, Apple's offering has been the highest profile to date.

2.2.2 Samsung Pay

Samsung Pay combines NFC and Magnetic Secure Transmission (MST), which allows phones to emulate magnetic stripe transactions, meaning that they are not restricted to using NFC enabled terminals. It is only available in US and South Korea. It seems likely that Samsung will extend Samsung Pay to more of its range of handsets in the future, including Tizen powered ones⁵. In Europe Samsung Pay is powered by embedded secure element (SE).

² With one clear exception, Telenor with their Telenor Bank <http://www.telenor.com/media/press-releases/2014/telenor-opens-serbias-most-available-bank/>

³ <http://www.mobeyforum.org/the-host-card-emulation-in-payments-options-for-financial-institutions-3/>

⁴ <http://www.mobeyforum.org/nfc-mobile-payments-an-industry-snapshot/>

⁵ <http://www.pymnts.com/news/2015/samsung-pay-expands-its-smartphone-touch/>

2.2.3 Windows Pay

Given that Microsoft announced in early 2015 that it will support HCE in the recently launched Windows 10 for Mobile (as well as SE based NFC) it seems reasonable to expect that a HCE payments app may be forthcoming. Windows Phone 8 incorporated NFC payments⁶. Microsoft's position in the corporate market may see any eventual Windows Pay gain market share.

2.2.4 Google and Android Pay

Android Pay succeeds Google Wallet but has not replaced it for Play Store purchases. With Android Pay, Google has put itself in the position of competing with one of its long term partners – Samsung. It was launched in 2015 and is currently available in the US (although Android Pay on US phones appears to work in the UK). It's worth remembering that while Android has a much larger market share than Apple, not all those Android phones are NFC enabled, and of those, not all support HCE.

2.3 Comparing the Pays

While both Samsung Pay and Android Pay (and no doubt in due course Windows Pay) have been described as copies of Apple Pay, there are differences. Android Pay is HCE only while Apple Pay and Samsung Pay both use the on device embedded secure elements (SE).

Without the involvement of the SE, Android Pay is immediately more accessible to banks who want to integrate it into their existing HCE or token based solutions.

However all three systems are NFC based and all three support all the major payment schemes with EMV based payments. That means they all work on the same infrastructure i.e. NFC enabled terminals (although Samsung Pay has the ability to work on magnetic stripe terminals too).

From control point of view, all but Apple allow a white label mobile wallet deployment. This freedom of designing a wallet of one's own grants a significant level of control for the issuer of the wallet.

2.4 The bank Pay option

Of course, OEM Pays are not the only option. One of the first major player to launch a HCE based payments service was a bank, Bankinter in Spain. At the time of launch⁷ Carlos Alberto Pérez Lafuente, director of innovation for e-strategy and management at Bankinter described HCE as a means "to 100% independently define its business model", in contrast to previous SE based models where banks were dependent on agreements with MNOs to move forward with mobile payments. That remains an argument that banks might consider applying to partnering with OEMs.

3 The current state of play with OEM mobile payments

In understanding the control factors relating to the various OEM Pays, it is also important to understand that there is no 'right answer'. Each financial institution will have differing needs and differing customer bases and their decisions will take those points into account.

That said, it is obvious that if a bank or financial institution wishes to please its Apple using customers, it will release an Apple Pay solution and similarly for the other OEMs, although there is a greater degree of flexibility associated with Android.

⁶ <http://www.nfcworld.com/2015/03/25/334722/windows-10-for-mobile-gets-hce/>

⁷ <http://www.nfcworld.com/2013/02/27/322783/bankinter-develops-nfc-payments-service-that-eliminates-need-for-secure-elements/>

In addition, there are several different dimensions to mobile payments, which are reflected in the matrices below. There is the payment transaction and there is data. While mobile payments is ostensibly about the first point, the data those payments generate may prove to be just as important.

This section will examine two major areas of power in the ecosystem, which are specifically relevant to OEM Pays. Understanding these factors will help banks understand what they need to consider in developing a solution, what they stand to gain and lose from each potential partnership, how their own approaches may compare and hence how they can make strategic decisions about how to proceed with mobile payments.

3.1 Control points – who controls the device?

The first area is that of power or control factors relating to the device – who controls the hardware, who owns the wallet, who controls the biometric authentication method and who controls the operating system.

	Hardware control	Wallet/UI	Biometrics	OS control
Apple	iPhones, iPads, Apple Watch, Apple TV	Apple Pay	TouchID	iOS
Samsung	Galaxy phones + tablets, Galaxy Gear Watch, Wearables, SmartTV, (Smart Fridge)	Samsung Pay	Fingerprint scanner	Very little control (except with Tizen OS)
Microsoft	Lumia, Surface, Xbox, MS Band, (HoloLens)	(Microsoft Wallet)	MS Band Microsoft Hello	Windows Mobile Windows
Google	(Glass), Android1 chip, Nexus phones and tablets	Android Pay Google Wallet	Fingerprint scanner in Android M	Android OS (Chrome OS)

Figure 1 Device control factors. Colour key: Green= Control/reach, Yellow = Partial control/reach, Red=No control/reach, ()=control status yet to be confirmed

As one might expect, handset manufacturers in general retain firm control over the hardware aspects of the device and are busy extending that control to wearables and other devices. The exception is Google whose branded handsets have not taken significant market share. Android Pay

will therefore likely be most used on non-Google controlled handsets. There are also rumours that Samsung has considered making Samsung Pay available for use on non-Samsung handsets⁸.

All the handset manufacturers seem to allow a third party white label mobile wallet deployment and usage of its payment capabilities except Apple. If you want to deploy mobile payment in iPhone, it is only Apple Pay. Apple allows banks to enroll cards from their payment app and also to have the transaction history and notifications.⁹

The use of biometrics for authenticating mobile payments is deployed by all the other OEMs but leaves the situation again unclear for Microsoft (MS) until it launches a payments product. However MS has announced its own biometric authentication system – Microsoft Hello – which supports fingerprint, facial and iris recognition (with the latter two expected to be most used for mobile). There is also the possibility of using Microsoft Band, a health monitoring system with 11 various biometric features, communicating with any handset.

Both Apple and Microsoft have firm control of their operating systems, for Samsung the situation is more complex. It primarily uses Android and therefore does not have control. However it also uses an open Linux based operating system called Tizen in other devices including smart watches (such as the Gear S2) and in smartphones available in India (most recently the Z3) but it is not coupled with Samsung Pay, although this may change. While Tizen is still an open OS, the fact that Samsung was closely involved in developing it means that it would have more control over it than it does over Android. Samsung has openly spoken¹⁰ in the past about wishing to use Tizen more widely but at the same time it has also committed to implementing Android on its watches. Tizen recently overtook Blackberry as the 4th largest OS platform¹¹.

Google also has less control over Android than it might like. Its inability to control non-Google implementations using Android has led to security weaknesses that affect the whole platform. At present Google does not appear ready to combine Android with Chrome OS¹².

3.2 Commercial reach control factors

The second area is that of power or control factors relating to the business model – who controls the e-commerce and physical retail reach and who is in charge of the transaction data and customer data.

Commercial control factors include the very important issue of control of data. While banks still struggle to leverage data, companies such as Google make it one of their major foci of attention.

⁸ http://www.phonearena.com/news/Samsung-Pay-might-arrive-on-non-Samsung-devices-later-on-high-ranking-executive-reveals_id75481

⁹ For example Discover has implemented notifications <https://www.discover.com/credit-cards/help-center/faqs/apple-pay.html>

¹⁰ <http://www.cnet.com/news/samsung-co-ceo-we-want-tizen-to-be-on-everything/> (from 2013)

¹¹ <https://www.strategyanalytics.com/strategy-analytics/blogs/devices/smartphones/smart-phones/2015/11/04/tizen-surpassed-blackberry-being-the-fourth-largest-smartphone-os-in-q3-2015#.VkDODLfhAgv>

¹² <http://www.androidcentral.com/google-confirms-commitment-chrome-os-says-its-here-stay>

	E-commerce reach	Physical retail reach	Transaction Data control	Customer data control
Apple	In-app purchases for digital/virtual goods and also with Apple Pay purchases 'in an app'	No control (iBeacons - remains to be seen)	Payment data through banks	(iBeacons - remains to be seen)
Samsung	In-app purchases but not as part of Samsung Pay	No control	Probably very little	Very little control
Microsoft	Back-end software (in-app?)	(ECR software)	No Control	Very little control
Google	In-app with Android Pay in an app	Ingenico partnership	Probably very little	Very strong control

Figure 2 Business control factors. Colour key: Green= Control/reach, Yellow = Partial control/reach, Red=No control/reach, ()=control status yet to be confirmed

All of the companies have full control over the use of their 'pays' for e-commerce payment, except Samsung Pay¹³, which is intended for physical POS use¹⁴ rather than in-app or online. Samsung does however offer separate in-app payments. Indeed banks should bear in mind that pays are not necessarily the same as in-app payments. While Apple Pay can be used within an app to pay for physical goods such as groceries or services such as ticketing, it doesn't replace In-App Purchase (which uses either cards on file with iTunes or gift cards) for virtual goods such as downloads. They

¹³ <http://www.nfcworld.com/2015/03/01/334390/mastercard-discusses-how-samsung-pay-works/>

¹⁴ <http://readwrite.com/2015/09/10/android-pay-launches>

are different services and they have different per-transaction costs for banks (Apple charges 30% for In-App Purchases). Google has not yet enabled in-app payments in Android Pay¹⁵, although it describes the feature as 'coming soon'.¹⁶

The physical retail environment is very different. Apple does not control POS software although greater use of the iBeacon protocol for enabling mobile payments might bring more control. Predictions¹⁷ that Bluetooth Low Energy, which provides the communications for iBeacon, would replace NFC for payments have not yet come to pass and seem unlikely to.

MST means that Samsung Pay works with a far wider range of POS terminals than Apple Pay, but Samsung has no control over those terminals. There is also a potential risk that MST could facilitate card cloning.

Microsoft does offer Windows compatible cash register and point of sale software, Microsoft Dynamics but there is no suggestion at the moment that this will link to any payments method from Microsoft. Ostensibly Google does not have any more control over the physical POS than Samsung does; while it does have a partnership with Ingenico this concerns cross border sales analytics and is not connected at present to Android Pay. That might however change in the future. Google has also launched a competing beacon specification called Eddystone, which is platform agnostic, unlike iBeacon. However there is no suggestion at present that it will be payment enabled.

While Apple does not retain transaction data from Apple Pay purchases, it can store anonymous information about the date/time and location of activity.¹⁸ At present it isn't clear what if any data Samsung will control. What is clear is that Google's core interest in payments (in the same way that Apple's is handset sales) is likely to be the aggregated data and all the business possibilities thereto. Android Pay contains a loyalty rewards feature that also allows merchants to integrate their loyalty programmes into Android's.

It's difficult at this stage to know how each company plans to scale its pay offering. While signing up one bank at a time, something that Apple has done, may seem to make sense in countries with a small number large banks, like the UK, it makes much less sense in other countries. Germany for example has a very large number of small banks.

From the opposite perspective, that of banks, individual agreements with each Pay may also offer challenges, primarily technical. It is likely that there will be a role for third party intermediaries in this space, such as aggregators like FirstData or TSYS or even national or regional processors.

However one thing is clear – to scale, they will need banks, as infrastructure if not as partners. In the US at least¹⁹ there is evidence that banks may well carry the cost of that scaling, even if it is ultimately to their disadvantage.

¹⁵ <http://readwrite.com/2015/09/10/android-pay-launches>

¹⁶ <https://www.android.com/pay/>

¹⁷ <http://www.ibtimes.co.uk/apples-ibeacon-mobile-payment-system-death-knell-nfc-1434694>

¹⁸ <http://www.bbc.co.uk/news/technology-33489066>

¹⁹ <http://www.pymnts.com/news/2015/issuers-to-apple-pay-just-say-no-2/>

3.4 How should banks interpret this data?

The activities of the OEMs can provide banks with a number of interesting insights that help them to plan their own strategy.

One is the interest of all of the OEM Pays in wearables. That's evidence of how closely woven payments are into people's daily lives, to the point of almost becoming invisible. Whether banks who don't make money from selling wearables will feel the same is debateable but they should not ignore consumer interest in wearables.²⁰ However Barclays already offers a wearable as part of its bPay mobile payment range but this is a dedicated wristband rather than an app that can be used on a general purpose wearable.

Another is how banks shape up compared to the OEM Pays in some of these areas. Seeing how those control points affect how each OEM Pay fares should provide banks with food for thought about their own position. Banks should also take note of how each aspect of the ecosystem is developing as these developments will affect their competitive positioning.

Banks can also take some comfort in the fact that none of these players are yet fully embedded in the financial services sector, although it is clear that Apple already has an edge over the others. There is plenty of room for banks to maintain competitive advantage, whether they compete or collaborate, because up to this point they have not truly needed to use their competitive assets. That situation has just changed but there is still time for banks to build some momentum and truly compete.

However there are certain factors that we will see later in this paper that could make that change of momentum much harder. Banks would be well advised not to be complacent or wait and see for much longer before acting.

4 Understanding bank attitudes to changing payments

Underpinning current bank attitudes to mobile payments are several different factors. They may be struggling to see the financial value of mobile payments to them and they may be concerned about the technical requirements of implementing them.

This can all combine to leave banks unwilling to commit funding and even unable to see the real value of new technology and what it can do. Yet at the same time they do realise that their biggest asset is their customer relationships. What Mobey Forum believes is that banks must recognise the link between mobile payments and customer relationships.

4.1 The silo factor

There is one factor that, for all but the most recent challenger banks, consistently gets mentioned when banks talk about technological innovation of any sort – silos. With much core bank technology still dating back to the 1970s, bank activities are still separated into silos. Cards do not talk to retail, and sometimes even different card brands within the same bank run on different systems. On top of that, systems from one vendor may not talk to systems from other vendors. Moreover, some of the banks' trusted partners, vendors and analysts are also structured in a way which does not fully meet the requirements of the digital era, with its merging boundaries and collaborations. In this way,

²⁰ <http://www.cbronline.com/news/internet-of-things/wearables/wearable-banking-to-hit-2bn-users-by-2020-4734386>

many of the third parties serving banks may be seen to be just as siloed as the banks themselves, a situation that can inhibit banks from seeing 'the big picture'. This all combines to slow down bank reactions to other changes in the ecosystem, making them unlikely to respond first to potential opportunities, and potentially leaving those opportunities to more agile companies and challengers.

4.2 Business case – there is no ROI

Banks who are hesitating with their offerings on mobile payments via connected personal devices are likely to be doing so because they can identify no financial return on investment. They see little evidence of added revenues, new customers or transaction value.

When applying traditional ROI measures, this is true. It is difficult to prove that by enabling payments functionality through other form factors will increase revenues. If a bank launches its own solution, it is expensive and often slow. With integration to OEM Pays, there are associated costs, with a percentage of transaction revenue going to Apple or other OEMs. Some new players in the field of payments even claim that the entire OEM Pay system is built with the intention of disintermediating banks.

Mobey Forum believes that banks that are looking for financial returns on this service are missing the point. There is no ROI. This conclusion can be debatable for a traditionally managed company to understand: why do something new and costly if it does not provide revenue in the foreseeable future? Why 'fix' something if it isn't broken?

The industry is in the middle of a big change. The younger generation is going completely digital, and will base their decisions on choosing a trusted partner for financial services based on their degree of digitization. Indirectly, there can be long-term ROI by lower operating expenses in payments: less plastic cards and cash, more end-to-end digital services.

Separate research from KPMG²¹ and from Zapp²² suggests that mobile apps are a key factor in people's decisions to switch banks. The Zapp research, carried out in 2014, revealed that 21 million Britons (approximately one third of the entire UK population) would be willing to switch banks to access mobile payments, with 7 million planning to do it in 2015.

It's questionable how genuine these intentions are – data from the UK Competition and Markets Authority²³ revealed that only 3% of UK current account holders switched bank over a one year period between 2014 and 2015, equalling approximately just 2 million account holders.

However much of that data period would have occurred before Apple Pay launched in the UK and from comment on social media it does appear that mobile payments are likely to be an inducement amongst others to either switch provider or stay loyal.

None of the OEM Pays are explicitly good for the banks' bottom lines but they are beneficial and potentially attractive for consumers. Some of the OEM Pays may lock banks into an uncertain commercial future. It may be a case of a least bad alternative. Or it may be a case of making the

²¹ <https://www.kpmg.com/UK/en/IssuesAndInsights/ArticlesPublications/Documents/PDF/mobile-banking-report-2015.pdf>

²² <http://www.computerweekly.com/news/2240237118/Millions-of-Brits-ready-to-switch-banks-for-better-mobile-payments-services>

²³ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/470032/Banking_summary_of_PFs.pdf

binary decision of whether to retain control of the customer relationship or to adjust to a future of acting as 'pipes'.

Banks often underestimate the importance of payments, because they do not bring in much revenue, although that is not to say that they will generate no revenue at all. But in common with the current account, they act as a banking gateway drug for consumers. They also represent the bank brand to the consumer. Up till now the branding on payments cards has done that. In future the branding on the payments app will serve the same function.

For while mobile payments may not generate a financial return for banks and may indeed prove a net cost, they will play a valuable role as a loss leader, reinforcing the bank brand and the bank's control of the customer relationship and opening up the door to selling other more valuable services.

Banks can no longer choose whether they share their customers or not. The presence of the OEM Pays, combined with the expected increase in the rise of other third party payments services, boosted by PSD2 and its access to accounts provision, mean that banks have less control over their customers than ever. Therefore the business case is that they don't lose the customer relationship. They can choose whether to accept the disintermediation or work with it, turning it to their benefit.

However there is another positive factor. Banks can and should be thinking creatively about how they can use their customer data to generate revenues. If they fail to do this, the OEMs will instead take the initiative. Possible uses could lie in creation of value added services for the payments app or in sharing the aggregated, non-anonymised data.

5 What do consumers want?

Sentiments expressed on social media suggest that banks which are late to offer mobile payments may face criticism from their customers. Yet at the same time, figures from the US, where Apple Pay has been available longest, appear to suggest that after an initial spurt of enthusiasm, take-up has been slow.²⁴ What do consumers want from mobile payments?

5.1 The cool factor

HSBC's delay in Apple Pay's availability to its customers in the UK caused considerable complaints²⁵ over social media and in the press. The same thing has happened to Barclays, which has committed to the service, but is yet to provide a launch date, opting instead to concentrate on its own branded product bPay. Early mobile payments offerings, for example Danske Bank's Mobile Pay, on the other hand have gathered much media coverage and praise, some of them even with limited functionality.

While OEM brands like Apple may appear 'cooler' and clearly have devoted fans that are very active on social media, bank brands remain more trusted. Research from Forrester reported earlier this year²⁶ suggests that while 27% of UK iPhone owners active online would trust Apple to supply a

²⁴ <http://www.mediapost.com/publications/article/253605/13-of-smartphone-owners-have-a-digital-wallet-76.html>

²⁵ <http://www.ibtimes.co.uk/apple-pay-uk-no-mobile-payments-hsbc-customers-until-late-july-barclays-board-1510750>

²⁶ <http://www.thedrum.com/news/2015/07/23/apple-pay-mobile-payments-and-our-cashless-future-how-brands-can-capitalise>

mobile wallet, 41% would trust their bank (and 43% would trust PayPal). However this may be overly simplistic. After all, Apple Pay is only useful in conjunction with a bank card and it is not clear whether consumers differentiate fully between the wrapper – the wallet – and the payment means – the card – and who is responsible for what part of the service. But it does seem clear that Apple Pay in particular adds a level of ‘cool’ that bank branded wallets may lack.

5.2 The importance of VAS

With the November 2015 announcement that Tesco Bank and TSB now offer Apple Pay, it is now available from all major UK banks except Barclays. This is likely to be the pattern for other OEM Pays as they launch and implies that Apple wants all the banks to join at the same time and compete against each other without ‘first mover’ benefits.

For banks that committed early, any resulting competitive advantage has gone. That suggests that, extending Herzberg’s hygiene and motivation theory into marketing, OEM Pays may become hygiene factors to retail bank customers who want to use mobile payments (not everyone does), something that if lacking will cause dissatisfaction, rather than actual motivators. To differentiate themselves to consumers and to motivate them, banks will have to add extra value in the form of value added services (VAS), or other tools that provide consumers with help in managing their money or achieving other financial targets.

In addition, it may be the VAS that attracts the customer to the mobile platform in the first place and, as a result, they start to use mobile payments as a second thought. Indeed unless mobile payments are tightly bound into the fabric of daily life, mass take-up is unlikely. With this in mind, the introduction of highly targeted VAS that are designed to appeal to specific customer segments, is likely to entice that pool of customers to adopt the mobile payments facility. This approach may result in segment-by-segment adoption, according to the rollout of VAS. Put another way, it is the unique value that the customer derives from the service that will drive their adoption, not the novelty of the facility itself. Mobile payments adoption in Singapore provides a useful example, here.²⁷ Prevailing opinion has been that the first wave of mobile payments users will be affluent technology early adopters. Yet in Singapore, the majority of mobile payments users are those under financial pressure, who use the facility to keep better control over their spending. Here, the ‘value’ appears to be more in the additional financial control, as opposed to the facility’s ‘easy way to pay’.

For more information on the potential of VAS and the mobile channel to transform the consumer’s shopping experience, together with the new role that banks and financial institutions can play, readers should consult Mobey Forum’s ‘Mobile Wallet: Strategic Options for Banks’ white paper.²⁸

6 Strategic options open to banks

Mobey Forum’s paper ‘NFC Mobile Payments: An Industry Snapshot’ concluded that the NFC marketplace is “rich with options and different routes to success”. Since its publication in May 2015, some of those options have started to crystallise. This section will lay out the major strategic options now available and will review additional factors that banks may take into consideration in choosing their strategy.

²⁷ Presentation at Cartes 2015 by Pascal Di-Girolamo, Gemalto

²⁸ <http://www.mobeyforum.org/mobile-wallet-part-5-strategic-options-for-banks/>

6.1 Factors impacting strategic options

There are a number of clearly defined factors that banks will need to take into account in choosing their path. One is cost, another is compliance. Finally banks will need to evaluate and carefully segment their customers and respective needs.

6.1.1 Cost to banks

One big issue for banks is the uncertain nature of costs associated with various types of pays, but particularly OEM Pays. While the cost of collaboration with OEMs may appear lower than going it alone at the outset for set up and implementation, that may not necessarily remain the case once the system is operating. The indirect costs include dependency on the decisions of the payment platform (OEM) as well as decreased brand value. Customer promise is also in the hands of the OEM instead of the bank.

Apple in particular is problematic because once a bank agrees to offer Apple Pay, it is powerless in the face of Apple changing its per transaction pricing, as it did with iTunes. This take it or leave it strategy means banks will either have to accept this or remove their mobile payments offering to Apple using customers.

The problem is less acute in the Android universe where alternatives are available. In addition Google does not at this stage charge a per transaction fee for Android Pay.²⁹

However, it does seem fair to say that it will be less easy for banks to control their costs going forward in partnership with an OEM Pay than if they choose to implement their own system.

The type of technical approach they choose may also impact cost. Tokenisation for example can be dealt with in-house by purchasing a system, by using a third party provider or by opting for scheme systems. This last option could potentially see a bank offering three different Pays across three different schemes and hence having to deal with nine different tokenisation agreements.

6.1.2 Card scheme compliance

EMVCo has released specifications³⁰ and guidelines on tokenisation and security that must be complied with. Complying with scheme regulations, either directly or via a partner, can place a significant burden on banks, especially since making any changes to their mobile wallet often requires banks to go through scheme-based certification again.

Opting for what is in effect a pre-packaged approach from the OEMs somewhat eases this burden as does using payment networks' or larger payment service providers' own tokenisation platforms.

6.1.3 Bank customer base

At present, mobile payments capabilities are only available on higher end, more recent handsets. For example figures from September 2015 (before the iPhone 6s launch) showed that between them the iPhone 6 and 6 Plus accounted for 39.2% of iPhones in use³¹. That's over 60% of iPhone users who can't use Apple Pay.

²⁹ <http://www.mobilecommercedaily.com/why-apple-pays-second-year-will-be-harder-than-its-first-forrester>

³⁰ <https://www.emvco.com/specifications.aspx?id=263> and workshop at MobeyDay in October 2015 in Barcelona.

³¹ <http://info.localytics.com/blog/research-shows-the-iphone-6-is-the-most-adopted-iphone-model-with-the-highest-user-engagement>

In October 2015 54.5% of Android users were using KitKat (version 4.4) or above.³² That's nearly 50% of Android users who can't use HCE (and if that sounds low in comparison to Apple figures, bear in mind that Android accounts for approximately 81.5% of the smart phone market against Apple's 14.8%³³).

In 2015³⁴ 28% of new phones sold worldwide are expected to be feature phones or 'dumb' phones. These users won't be making EMV mobile payments either and that doesn't account for the number of existing non-smart phones still in use.

It's reasonable, therefore, to assume that some banks may have a higher percentage of customers, based on income, age and attitudes (not everyone wants to use mobile or contactless³⁵), who are not 'natural' customers for mobile payments. Others will have a customer base that is more open to the idea. Of course the larger the bank the more varied its customer base will be. That said, this is by no means the defining factor here. Each market varies in terms of mobile OS rollouts and the OEMs distribution priorities. This means that when forming its strategy a bank will need not only to understand the appetites of its customers, it will also need to factor in the current maturity and likely upgrade path of the region in terms of handsets and OS rollouts.

Handset obsolescence and the inexorable march of technology will naturally change over time but today, based on this, some banks will see introducing mobile payments as a more urgent requirement than others.

6.1.4 What about the data?

Banks may also be swayed by what happens to data generated by mobile payments and given away via the agreements struck with OEM Pays. We've already seen that the level of control over data exercised by the different OEM Pays varies but there has certainly already been concern voiced in the UK about Apple's access to data. As privacy concerns multiply, this may become a bigger issue.

From a competitive perspective, Mobey Forum suggests that this to be one of the most critical issues for banks must consider. By participating in OEM Pays, banks are giving away their most valuable source of future-profits: their customer's transaction data and all its future potential.

6.2 Hypothetical factors impacting strategic options

The strategic options being presented in this paper are being drawn up in late 2015, in the external environment of that time. However it would be unwise to assume that everything in the mobile payments ecosystem will remain as it currently is. This section will therefore look at a few 'what ifs' that might well impact bank thinking about mobile payments.

6.2.1 What if Google closes the HCE interface?

At present, HCE on Android, in common with other aspects of Android, is openly available making HCE an attractive prospect for developers. Yet one of the side effects of Android being an open platform is that Google has limited control over how developers use Android. In some cases, these

³² <http://info.localytics.com/blog/research-shows-the-iphone-6-is-the-most-adopted-iphone-model-with-the-highest-user-engagement>

³³ <http://www.idc.com/getdoc.jsp?containerId=prUS25450615>

³⁴ <http://www.cheatsheet.com/technology/why-do-people-buy-dumb-phones-instead-of-smartphones.html/?a=viewall>

³⁵ <http://forums.moneysavingexpert.com/showthread.php?t=5362366#topofpage>

developments introduce security vulnerabilities, causing perception problems for Google. What would happen to HCE if Google decided to close it and take full control on Android Pay?

According to reports from 2012³⁶, Google had to agree to keep Android open for another 5 years in order to get Chinese regulators to agree to its purchase of Motorola Mobility, but that only guarantees openness until 2018 at the latest. In addition, Google seems to have been progressively effectively moving functions out of Android³⁷ by stopping updating them and offering enhanced versions as closed apps, as well as adding proprietary APIs. In addition, Open Handset Alliance members³⁸ are prohibited from building non-Google approved devices.

These moves to effectively close aspects of Android mean that it isn't out of the question that they might close HCE too. This would mean greater OS control for Google and banks will then find themselves with reduced options, in the same way that they do with Apple.

However this could have the side effect of making Android forks more likely and deterring people from upgrading to the latest approved version of Android, and as such is considered unlikely by some.

6.2.2 What if there is a security breach on tokenisation?

All of the OEM Pays depend on tokenisation to some degree. Android Pay in particular would be impacted if there was a significant security breach because its security is entirely software based, and located in the cloud.

Fraud control during the online authorization requests is part of the risk management. In case there is a compromise in the mobile device part of the fraudulent usage can be controlled on the backend side.

6.2.3 What if people lose interest in mobile payments?

With Apple Pay launching in the US 9 months before it did in the UK, there are inevitably more pieces of research about consumer attitudes to Apple Pay from the US. And they appear somewhat disturbing, with numbers of people saying they would definitely use Apple Pay appearing to decline.³⁹

A number of factors could be at play here:

- People may find cards more convenient
- Card usage may be more ingrained than initially thought
- Consumers may be concerned about security⁴⁰
- There may not be enough mobile enabled acceptance points

There is some evidence that mobile payments are not the simple experience they are touted as. The need to unlock the phone before use has already proved problematic on London Underground,

³⁶ <http://www.theverge.com/2012/5/19/3031130/google-android-free-open-five-years-china-regulation>

³⁷ <http://www.infoq.com/news/2014/01/android-closed-source-model>

³⁸ http://www.openhandsetalliance.com/oha_members.html

³⁹ <http://mondato.com/blog/apple-pay-poll-2015/>

⁴⁰ <http://www.mediapost.com/publications/article/253605/13-of-smartphone-owners-have-a-digital-wallet-76.html>

slowing down users⁴¹, and other problems have also presented themselves including double charging, battery depletion and receiving phone calls at inopportune moments⁴². It will be interesting to see how MasterCard's limited offer of free Tube travel for Apple Pay users affects uptake.⁴³

On the other hand, figures from September 2015 suggest that in the two months after launch in the UK, 40% of Apple users used Apple Pay.⁴⁴

What does appear to be the case is that people appear to find Apple Watch a better payment experience than Apple phone. There is also an option in iOS9 to bypass Touch ID so that Apple Pay opens right away.⁴⁵

It is also undoubtedly important to have merchants on board. In the US therefore, Samsung Pay, with MST, may well be in a substantially better position than Apple as it does not need NFC enabled terminals. In the UK on the other hand, deployment of NFC terminals is already widespread thanks to the launch of contactless payments cards in 2008, although not all are capable of accepting Apple Pay.

6.2.4 What might the other players or payment schemes do?

While Amazon quietly retired its wallet product at the beginning of 2015 there are plenty of other players who might decide to launch a mobile payments product or who have already done so. Alipay for example already has at least 350 million registered users in China⁴⁶.

Any social media platform may introduce a new type of payment system via their media platform, some of them already done so⁴⁷. The Open Handset Alliance has a number of members⁴⁸ with sufficient consumer brand recognition to compete with Apple and Samsung, not least LG who has just launched a service called G Pay.

At present, the payment schemes offer their own tokenisation services. MasterCard has recently extended the capabilities of its tokenisation service to enable payments to be made using "virtually any device", including NFC-enabled clothing, jewellery and vehicle keyfobs.

At present these platforms form the rails over which OEM Pays operate. What if they were to attempt to grab a more prominent role in mobile payments and enter direct consumer payments?

⁴¹ <http://www.digitalspy.com/tech/apple/feature/a658457/9-things-we-learned-from-24-hours-with-apple-pay-from-loose-limits-to-preload-pointers/>

⁴² <http://www.theguardian.com/technology/2015/jul/16/tfl-cautions-pitfalls-apple-pay>

⁴³ <http://www.independent.co.uk/life-style/gadgets-and-tech/news/apple-and-mastercard-to-give-free-tube-travel-to-apple-pay-users-a6744071.html>

⁴⁴ <http://www.paymenteye.com/2015/09/24/how-many-uk-consumers-actually-use-apple-pay/>

⁴⁵ <http://www.theverge.com/2015/9/18/9352327/new-ios-9-features-iphone-tips-tricks-guide>

⁴⁶ <http://www.thestreet.com/story/13170673/1/alibabas-alipay-is-winning-the-mobile-payments-game-in-china.html>

⁴⁷ Messenger payments in Facebook for example <https://www.facebook.com/help/863171203733904/>

⁴⁸ http://www.openhandsetalliance.com/oha_members.html

6.2.5 How will regulation impact mobile payments?

There are a number of regulatory activities and issues going on at present that banks will need to keep abreast of when making a decision.

Google is under investigation by the European Commission on charges of unfair app bundling with Android⁴⁹. Might that affect whether Android Pay is bundled with new Android phones?

PSD2 will open banks up to third party access to accounts and payments initiation. Could that increase the number of new non-bank players offering mobile payments products? Might it give Apple traction with its proposed P2P product?

New Data Protection legislation set to come into force in Europe in 2017 may affect European banks that choose to issue wallets with a cloud component, if that involves moving customer data outside of Europe. This is of particular relevance to offerings that are supported by non-European data centres. The striking down of Safe Harbor may expedite that issue and will certainly increase the level of compliance administration required.

Finally, European Central Bank recommendations on mobile payments security, issued in draft consultation form in 2013 but not yet finalised, might reappear. Should this occur, careful review and consideration of these recommendations will be necessary in order that their implications and requirements are taken into account by banks issuing mobile payment solutions.

6.2.6 What if the OEM Pays cease to co-operate and start to compete directly with the banks?

One major concern is that Apple may be readying itself to compete head on with banks by entering the financial services industry itself as a bank. Both Apple and Google are already registered as financial institutions. Apple Pay, combined with personal finance management tools on the handset may give it the way in. The same could apply to other OEMs, potentially relegating banks to acting as pipes, especially in Europe, if they choose to leverage data access rights under PSD2 (although this would mean becoming subject to financial services regulation⁵⁰). Apple's prior record of changing the value chain in industries it enters, for example the music industry, emphasises the risk. And indeed there is already speculation that Apple is planning a money transfer product that would cut the card schemes out of the loop.⁵¹

It's also worth noting that Samsung already owns the largest credit card company in South Korea.⁵² This gives it a rich 'test market', that is independent of the current global payment schemes, in which it can trial new types of payment methods.

⁴⁹ <http://www.theverge.com/2015/4/15/8419605/google-europe-android-antitrust-investigation>

⁵⁰ <http://www.out-law.com/en/articles/2015/january/apple-pay-data-collection-presents-threat-to-banks-customer-relationship-management-says-expert/>

⁵¹ <http://recode.net/2015/11/16/will-apples-new-money-transfer-idea-leave-visa-and-mastercard-in-the-dust/>

⁵² https://en.wikipedia.org/wiki/Samsung_Card

6.3 The strategic options

Mobey Forum has identified five potential strategic options for banks resulting from their decisions about mobile payments.

The OEM to access the customer is ApplePay (via domestic or global schemes/large PSP or directly in the case of large FIs). SamsungPay is the same now but will be open in the near future.

STRATEGY		OUTCOME
The bank launches its own solution		<ul style="list-style-type: none"> • Highest level of freedom, flexibility and control • Higher set up costs • Operational and long term costs easier to control
The bank partners with one or more OEM pays		<ul style="list-style-type: none"> • Positive reaction from some customers and cool image • Possible per transaction costs • Hard to predict and control costs in the future • Bank brand may be eclipsed
The bank partners with another type of company or organisation		<ul style="list-style-type: none"> • Benefits depend on type of partner • Partnering with local payment aggregators will reduce cost and complexity for smaller banks • Lack of independence and control
The bank decides not to offer mobile payments		<ul style="list-style-type: none"> • Loss of customer relationship • Future as backend pipes
The bank delays making a decision about offering mobile payments		<ul style="list-style-type: none"> • Misses the chance to develop new types of services via connected personal devices • Loss of customer relationship • Future as backend pipes

Figure 3 Bank decisions and their outcomes

6.3.1 The bank launches its own branded solution

In this scenario, the bank either goes it alone, developing its own solution, or collaborating with other banks, with the help of scheme branded services such as the MasterCard Digital Enablement Service (MDES) and Visa Token Service (VTS) platforms. Examples include Capital One who recently added HCE based mobile payments to its Wallet app for customers using Android phones, CaixaPay or Royal Bank of Canada.

An example of collaboration is Swipp in Denmark, issued by Nordea, Nykredit Bank, Sydbank, Jyske Bank, Arbejdernes Landsbank, Spar Nord Bank and Local Money Institutes.

Of all the options this one potentially gives the highest degree of freedom but also may incur the highest level of cost. It may also lack the marketability that seems to go with partnering with an OEM Pay.

However using NFC, HCE or otherwise immediately gives users access to any retailer that already takes contactless payments.

It also may be the de facto position for banks that were early to the market and are now having to adjust their strategy.

6.3.2 The bank partners with one or several OEM Pays.

It is far simpler for the bank to partner with an OEM Pay. Experience from the UK suggests that banks who hesitate to offer or delay in offering Apple Pay in particular⁵³ face a consumer reaction on social media that forces them to rapidly reconsider. Offering their own solution does not appear to appease OEM Pay fans.⁵⁴

However in some countries, banks are more hesitant. Reports suggest that China, Australia and Canada may prove harder markets for Apple in particular to crack⁵⁵ While Apple Pay has recently launched in Canada and Australia it is only available for cards issued directly by American Express.

Banks may also worry that the OEM brand will be so prominent that it eclipses that of the bank.

6.3.3 The bank partners with another type of company or organisation

Handset manufacturers and Google are not the only possible partner for a bank. In this scenario, the bank chooses to partner with other players.

In the US for example, Chase⁵⁶ has just launched a mobile payments service in partnership with MCX (Merchant Customer Exchange), the retailer owned mobile commerce network backed by big merchant players such as Sears, Walmart and Shell. It offers merchant friendly pricing and liability policies and integration of merchant loyalty programmes into its product. The benefit to Chase is likely to be merchant scale, giving a ready to use retailer acceptance network for the cross platform QR code product. Chase's 94 million customers have been auto-enrolled into the programme.

Other potential partners may be MNOs and brands from sectors not yet active in mobile payments such as automotive or fuel companies. Starbucks, whose own mobile order ahead product is gaining customers rapidly in the US⁵⁷ could theoretically partner with a bank as could competitors of Starbucks.

Facebook might be another theoretical possibility as might gaming companies or indeed non-consumer facing players in the value chain such as component manufacturers, taking a backseat role.

Third party solution providers and integrators such as processors, IT companies or payment solutions vendors may also prove viable partners, especially if banks are already turning to them for tokenisation services. Similarly local aggregators can take a role here⁵⁸.

⁵³ <http://www.theinquirer.net/inquirer/news/2417397/apple-pay-barclays-to-offer-imminent-support-for-iphone-payments-service>

⁵⁴ <http://www.techradar.com/news/phone-and-communications/mobile-phones/barclaycard-is-rolling-out-its-own-flavour-of-android-pay-but-still-no-love-for-apple-1304300>

⁵⁵ <http://www.mobilecommercedaily.com/why-apple-pays-second-year-will-be-harder-than-its-first-forrester>

⁵⁶ <http://www.pymnts.com/news/2015/chase-pay-mobile-wallet-launches-with-mcx-as-a-partner/>

⁵⁷ <http://www.pymnts.com/news/2015/through-the-mobile-payments-looking-glass/>

⁵⁸ In Spain for example Redsys offers HCE capabilities to its processing customers.

6.3.4 The bank actively decides not to offer mobile payments

This is a hypothetical possibility, with the bank opting to position itself as the backend pipes to consumer facing third party payment providers, as envisaged by PSD 2. Given the points we raised in section 4.2 about the important role payments play in maintaining the bank's brand and relationship with the customer, we consider this scenario very unlikely. It requires the customer to spread its primary banking relationship over a wider range of providers than it does at present, adding complexity and as a result reducing the amount of consumer mindshare that the bank currently has. It seems a priori far easier and therefore more likely for the consumer to choose a bank that offers the mobile payment service the consumer wants. And that means that in choosing this strategy, the bank would be deliberately choosing to lose customers.

However in developing markets where mass market mobile payments are seen as the territory of the MNOs this could be a possibility, but it seems more likely that even here banks would choose to compete.

6.3.5 The bank delays choosing a strategy too long

Far more likely than the previous scenario is one in which the bank delays making a decision about how to offer mobile payments and as a result finds itself with the same outcome as scenario one, losing customers to its rivals.

In fact, there is never going to be a perfect time to launch mobile payments and it will be very hard to recover if the bank gets too far behind in the value chain. The most important thing at this stage is to take an informed decision to do something, based on information available now, and to remember that payments are just the starting point for the mobile channel. Without mobile, banks will find it very difficult to leverage customer trust and brand value.

6.3.6 Combining strategic options

There is nothing to stop banks from betting on more than one horse in the race. Applying the 'know your enemy'⁵⁹ adage may even be the wisest options for banks to take. Keeping a close eye on what the big players are doing while simultaneously further developing banks' own services gives a very good view on development. Chase for example offers Apple Pay as well as its own mobile payments product.

7 Conclusions

This paper has reviewed how the different OEM Pays are responding to market needs for mobile payments. It has looked at other factors that will impact bank decisions. Most importantly it has laid out the choices banks need to make. In reality though, the most important and the first choice is purely binary.

7.1 There are only two options

In reality, because banks can no longer choose whether they share their customers or not, their strategic options can be reduced to two: stay in the game and retain an everyday client interface or withdraw and lose that interface. In PSD2 terminology that equates to remaining a front end player or deciding to become a pipe at the backend. The danger for banks who do not act now is that they may make the latter decision by default as they lose market share to more forward looking banks and other providers.

⁵⁹ Sun Tzu: "Art of War"

7.2 What banks decide now impact their long term future

It's important to realise that this isn't just a decision about offering a specific payment product. Not only are banks deciding about whether they want to remain as consumer facing organisations but because payments is a volume business, decisions taken now about mobile payments may in years to come also have an impact on bank mergers and acquisitions, with smaller players disappearing.

7.3 The OEM Pays bring lessons as well as options

Observing how non-bank organisations deal with the decisions associated with mobile payments can help banks with their choices, whether the banks choose to partner with them or compete. That was true of MNOs for SE based NFC and it will be true of OEM Pays. Banks can learn valuable lessons about who consumers trust, what consumers expect or demand and how heavily marketing focused organisations respond to those expectations.

Furthermore, by partnering with OEM Pays now, banks may learn lessons that as they gain confidence with mobile payments, may allow them to follow a different strategy in the future.

7.4 VAS are the keys to success

In common with most payment types, mobile payments will not provide a major return on investment. Instead, the return is retaining the customer relationship. In addition, with every bank potentially offering Apple Pay, it may prove hard to differentiate. In that case banks will need to turn to value added services both to maintain a competitive edge and to provide a possible return.

In Singapore, the most frequent users of mobile payments are those that are under financial pressure.⁶⁰ This observation contests the idea that mobile payments are used predominantly by affluent early adopters of the latest technologies. With this in mind, bank-driven VAS that link personal finance management with payments are likely to be welcomed, and may represent a significant opportunity for banks to play to their strengths and establish differentiation from the OEM Pays at the same time.⁶¹

7.5 It's not too late to act and it's OK to bet on more than one horse

To stay in the game, banks must offer mobile payments. They can choose one option or several. And their choices now have long term implications for their overall future. Decisions may require a change in mind-set and even a change in bank culture but there is still time to act.

However, that may not be the case for much longer. To guarantee the future of their customer relationships banks must act now on mobile payments.

⁶⁰ Presentation at Cartes 2015 by Pascal Di-Girolamo, Gemalto

⁶¹ See Mobey Forum's 'Mobile Wallet: Strategic Options for Banks': <http://www.mobeyforum.org/mobile-wallet-part-5-strategic-options-for-banks>