Digital Wallet Dynamics
Opportunities, Challenges And Recommendations

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SUMMARY

Introduction

Digital wallets have the potential to create new revenue opportunities and help with service enhancement and differentiation, for a wide range of players from very different ecosystems spanning mobile, retail and financial services. It is not surprising then that there has been an explosion in digital wallet service launches and announcements in the past 18 months that shows no signs of slowing down as online players, network operators, device vendors, banks, application developers, merchants and more battle for position.

Digital Wallets Overview

Digital wallets act as a container and point of convergence for remote and proximity payments, mobile advertising and host of value-added services that can leverage location, social features and identity management, among other things. One of the most compelling aspects of digital wallets is that they have the potential to generate unprecedented amounts of customer and financial data, which must of course be subject to watertight security and treated in a way that respects user privacy. This data is appealing and useful to a wide range of digital wallet stakeholders but particularly merchants and advertisers due to the opportunities for targeted offers and promotions.

The opportunities this presents is creating a lot of excitement and a land grab scenario as players rush to enter the market and stake their claim. But the excitement is also generating a lot of hype and clouding the fact that digital wallets are challenging propositions that are difficult to get right.

Digital wallets bring together a wide range of complex functions, services, and support elements. There are a lot of moving parts for a service provider to manage, many of which will be outside of its core competencies. This is one of the reasons why partnerships are so important for success in the digital wallet space. At the same time, while consumers may be warming to mobile payments and related mobile commerce applications in general, active usage of such services are still low in most markets. This impacts digital wallets because m-payments and m-commerce are intrinsic parts of the offering. Usage of m-payments is particularly challenging because of ongoing consumer concerns over security, data privacy and the perception that mobile payments do not provide more convenience and value beyond consumers’ existing, trusted payment mechanisms. Until these core issues are addressed digital wallets will not fly.
The ability to support electronic payment processing linked to stored value accounts (credit and debit cards, prepaid cards, gift vouchers) is the foundation of a digital wallet service. However, a digital wallet is more than a standalone mobile payments application and the two are not synonymous. A digital wallet provides a consumer facing user interface for a package of additional, applications and value added services beyond mobile payments. We will explore this in more detail later in the white paper.

A digital wallet can support both mobile proximity and remote payments, and draw on a range of enabling technologies including mobile web, SMS, NFC, Quick Response (QR) codes, Bluetooth and even biometrics. Digital wallets today are typically associated with smartphones and to a lesser degree feature phones, but in our view the aim should be to offer access from multiple connected devices.

Digital wallets can be implemented in a number of different ways. Cloud-based digital wallets, as the name suggests, carry out transaction processing and store user account information on web based servers. Implementations of this kind play well to the multiple device scenario described above. PayPal, Google, MasterCard and Visa all support cloud-based implementations, as does coffee chain

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**Figure 1: Summary of key functions in a digital wallet service**

The digital wallet service has many moving parts to manage. Digital wallets are complex propositions, with a range of interconnected functions as shown in Figure 1. It is precisely because there are so many different functions involved that partnerships are a necessity for digital wallets; it will be extremely challenging for any single service provider to manage and execute a digital wallet effectively across all the functions involved.
Starbucks for its digital wallet. Visa has adopted this approach with the V.me digital wallet. Other digital wallet service providers have opted for device-based implementations where there are two main approaches that depend on the location of the secure service element: on NFC SIM cards or embedded on the device chipset. Mobile operators typically prefer NFC SIM implementations because it gives them optimum control over the service. However, more are starting to embrace cloud-based solutions, such as South Korean operator SK Telecom.

**The importance of non-payment applications in the digital wallet mix**

Offering complementary applications beyond mobile payments can help enhance the appeal of digital wallets to consumers and merchants, and potentially generate additional value opportunities for service providers. An example of the range applications that could be included in a digital wallet is shown in Figure 2.

![Figure 1: Summary of key functions in a digital wallet service](image)

**Thinking beyond generic applications**

The reality is that most digital wallet service providers only offer limited applications based on mobile advertising and to even lesser degree, transport and ticketing. The applications on offer are horizontal and largely generic - for example, broad-based offers and promotions.

This is to be expected in the early phase of digital wallet services, which is where most stand today outside of a few exceptional markets like Japan. However, in the longer term this 'one size fits all' approach will not be enough to differentiate services and keep customers engaged in what is becoming an increasingly competitive digital wallet market.
Digital wallet applications need to be carefully packaged and integrated to ensure ease of use and a pleasing user experience. Applications that can leverage contextual elements such as location have the potential to create further value for both merchants and consumers. Combination of proximity payments and location can effectively bridge the gap between marketing campaigns outside and within a merchant’s geo-fence.

**The Digital Wallet Ecosystem**

In reality digital wallets are not built on a single ecosystem but instead require the capabilities and expertise that span multiple ecosystems, namely mobile retail and finance, as shown in Figure 3. Digital wallets lie at the intersection of these ecosystems, which is another reason why digital wallets are so complex and why partnerships and collaboration are so important. Very few players have all the capabilities that enable them to go it alone in the digital wallet market.

**Close up on selected players**

**Banks**

Digital wallets are both a challenge and opportunity for banks. Third-party digital wallets can encroach upon a bank’s territory by inserting a layer of services and relationship management between a bank and its customers. The fear for banks and also issuers is that they become background players. In this context banks must be proactive and develop a digital wallet engagement strategy, and the good news is that they have a number of strategic options available to them. These options include:

- Collaborative ventures with other banks (examples include PC Financial and TD banks in Canada, that are rolling out an NFC based digital wallet called Ugo and National Bank of Egypt (NBE) and the Egyptian Banks Company (EBC) which have launched a basic wallet type service for banked and unbanked users. It is not a common strategy but...
nonetheless one that is an option for banks
• Partnerships with third-party digital wallet providers such as operators.
• An own-brand closed-loop digital wallet offered directly by a bank to enhance their own services to their own customers.

Whatever their chosen strategy, banks that participate in the digital wallet ecosystem will need to offer a full set of digital wallet services - and these will be beyond their existing mobile banking offerings. This is of course part of the attraction, as mobile banking applications are becoming mainstream, and so enhanced digital wallet services can provide a chance for banks to achieve further differentiation and value add. But the transition will also be challenging, as it is taking banks well beyond their area of expertise.

However, banks do have certain advantages that mean they are well positioned in the digital wallets space. The majority of digital wallet services and particularly those in mature markets are linked to a customer’s bank account (most banks act as card scheme issuers). Another factor working in favor of banks is the position of trust they hold with consumers. Ovum’s Consumer Insights survey revealed that banks (43%) are seen as the most trusted m-payment service providers - other players trailed a long way behind.

Merchants
• Digital wallets present merchants with some potentially compelling benefits that extend far beyond the ability to make a purchase from a mobile device, although this is of course fundamental to the core value proposition for merchants. The merchant benefits of digital wallets include:
  • Helping to expand a multi-channel sales strategy.
  • Support for loyalty programs.
  • Support for targeted offers, promotions and discounts.
  • Increasing transaction speeds at POS terminals and reducing queues.
  • Opportunities to gather customer insight such as purchase behavior, transaction data and history and other metrics. This can be used to offer products and promotions better aligned to a user’s needs and preferences.
  • Enhanced store location and in store product discovery

Most merchants are participating in the digital wallet ecosystem by becoming part of a third-party wallet offering. However, a handful of merchants have taken the bold step of launching their own, own-brand closed-loop mobile wallet services, Starbucks being the best known and most successful on this front. A more recent, nascent development is the prospect of merchants launching collaborative, open mobile wallet platforms. An example is the Merchant Customer Exchange (MCX) initiative in the US that is driven by upwards of 25 US retailers with the aim of developing a cross merchant, nationwide m-commerce platform.

We expect to see merchants continue to adopt mixed strategies and in many cases the choices will not be mutually exclusive. Some merchants will inevitably want to provide a
unique, customized digital wallet experience that is only available to their own customers and where their brand is dominant. But many of these same merchants might also want to be part of a more universal digital wallet service where greater standardization and an open platform are required.

**Mobile operators**

Mobile operators have been able to play a key role in the mobile payments value chain thanks to the role of premium SMS and operator billing in supporting direct and third-party payments for digital services and content. But mobile operators are now seeking wider m-commerce opportunities and digital wallets are seen as a key vehicle to achieve this. The list of operators that have launched, or plan to launch, digital wallet services is literally growing every month in both mature and also emerging markets with the current line up including China Mobile, the ISIS collective in the US, SK Telecom, KT, Telenor, Econet Wireless, Telefonica, Safaricom, Orange and Rogers Wireless to name but a few. The majority of operators provide open digital wallet platforms that enable payments for a wide range of third-party players and that aggregate a wide range of third-party applications.

Mobile operators do of course face stiff competition from a host of other digital wallet service providers but still have some powerful capabilities to draw on. These include:

- Access to and a direct relationship with a large installed base. This brings advantages in terms of reach, scale, and ability to leverage customer data for associated value-added services, along with target advertising and promotions.
- Substantial control of physical distribution channels that can sell, provision, and support handsets.
- Established customer support/care infrastructures.
- An existing technical infrastructure for the provisioning and support of SIM-based NFC solutions.

Operators in the UK, US, France, South Korea, Indonesia and Japan are collaborating on mobile commerce related services in their own markets. However, there are certain key elements of a digital wallet proposition that are outside of an operator’s core expertise, for example merchant acquisition, transaction processing and the full set of Trusted Service Manager functions. For these and other capabilities operators should look for partnerships and/or source white label platforms.

**Digital Wallet Challenges**

**Consumer usage**

Consumer usage of mobile wallets is still low compared to the host of other mobile services they interact with. Ovum’s Customer Insights survey of 15,000 consumers across 15 markets showed that digital wallets were one of the least frequently used type of mobile application among respondents. The challenges facing digital wallets adoption and usage are largely related to wider consumer concerns over mobile payments. In Ovum’s Customer Insights survey, the biggest concern for consumers is the security of mobile payments (49%) while an almost equal 47% were worried that
their personal data might be misused in the m-payments context. Another major issue is that many consumers do not think mobile payments provide any additional benefits beyond their existing ways of paying for goods and services (38% in Ovum’s survey). Twenty per cent of the consumers in the Ovum survey thought mobile payments were difficult to use while 17% cited lack of trust in service providers as an issue. These are all fundamental challenges for digital wallets because, as noted at the beginning of this paper, payments are the foundation of a digital wallet service.

Customer support in the digital wallet context is complex

Discussions around digital wallets typically focus on the front end: the payments element, applications and the user interface. This is no doubt important but what is often overlooked in such discussions is the critical role of back-end customer support processes. In the digital wallet context where several parties are involved, consumers need to know exactly who they are transacting with and where responsibilities lay if they experience problems or are dissatisfied. For example, is it with an individual application or service provider in the digital wallet, or is it with the digital wallet service provider brand? It could be either, but it needs to be made very clear to consumers so that they know who and what is the point of contact if things do not go as planned.

Customer data: both gold mine and minefield

Digital wallets have the potential to generate an unprecedented flow of detailed customer data, and service providers that are able to control this data will be in a powerful position. They can become brokers of aggregated data for advertising purposes, and also use such data to better position and personalize their mobile wallet services. However, service providers must be extremely careful in how they leverage customer data, managing the conflict between consumers' willingness to share certain levels of personal data and their growing concerns about how their data is used and shared, along with its vulnerability to privacy and security breaches.

The business model challenge

The business model for digital wallets is still evolving and is challenging because of the need to create a win-win model that satisfies what can often be a wide range of participants. This is further complicated by the fact that participants often come from different industry sectors with their own entrenched business model preferences and practices. There is no simple 'one size fits all' business model for digital wallets and the best advice is to consider flexible models combining multiple revenue streams. This could include rental fees, revenue share on transactions, mobile advertising; fees from additional value-added services such as application provisioning, integration and customization services.
NFC is making progress - but it is proving slow
NFC is making progress in terms of device shipments, trials and service launches, which is all positive for building the NFC ecosystem. Most major device manufacturers now include NFC capability in some, if not all, smartphone models. Ovum’s smartphone capability analyzer shows that in Q42012 72% of smartphones shipped where NFC enabled. However, the caveat is that although shipments are improving the installed base of NFC devices in most markets has not yet reached critical mass. At the same time, merchants must upgrade Point of Sale (POS) and back-office systems to support NFC, and they are reluctant to do this until the installed base of NFC handsets is larger and consumer usage of NFC better. The problem is that consumer usage of NFC for mobile proximity payments cannot flourish until there is widespread support from merchants supporting NFC at the point of sale (POS), creating a ‘chicken and egg scenario’. Host Card Emulation (HCE) is one interesting development, and it will be interesting to track this closely to see if it enables faster deployment of NFC. There are also a range of lower cost alternative enabling technologies such as QR codes and Bluetooth Low Energy (BLE). These enabling technologies have better immediate prospects for adoption and therefore scale than NFC. BLE has been embraced by various players but notably PayPal (PayPal Beacon) and also Apple (iBeacon). PayPal Beacon is a small device based on BLE that a merchant plugs into a compatible power source to create what is in effect an in-store GPS system. A Beacon-enabled merchant can ‘check in’ customers that enter the store - so long as they have downloaded the PayPal Beacon application and opted into the process.

Check List For Service Providers
Put consumers center stage - address their concerns head on

- Focus on ease of use. Digital wallets contain a range of complementary applications that must be presented to consumers in a unified, integrated environment where moving between them is intuitive and easy. For example, it is no good providing a discount if the process of redeeming it and paying the balance takes multiple steps and clicks. Ease of use is closely tied to convenience, and will be a central factor in the consumer’s decision on whether or not to adopt a digital wallet service.

- Show consumers your digital wallet service is safe. Security is an ongoing issue for mobile payments and inspiring consumer trust in digital wallet services could be even more of a challenge than it is with more simple, standalone payment applications. Service providers should make their security credentials very visible to consumers and in a language they understand - simply blinding them with technology and security acronyms will not be persuasive.

- Demonstrate real value. Consumers need to be convinced that digital wallets offer lower cost and/or greater convenience above and beyond existing payment mechanisms.
Value added service - take a holistic, contextual approach

The focus should be on a mix of applications that enhance the overall digital wallet experience rather than just the payment element, which is the end goal of a purchase journey not the starting point.

Service providers should offer applications that support a more personalized, contextual mobile shopping and purchase experience, for example by leveraging mobile location capabilities. Service providers will also need to ensure they have platforms that attract best in class application and service partners, for example by offering third parties easy integration and access to platform APIs. Service providers must keep in mind that the choice of application that a mobile wallet contains will be shaped by the nature of the market and its users. It is important to understand the different needs and requirements of mobile wallet users in mature and emerging markets, and also what it is technically possible and appropriate to deliver in each.

Support multiple payment scenarios, enabling technologies and devices

Digital wallets are evolving quickly and service providers must have the flexibility to move with market developments. Towards this, service providers should support both mobile proximity and remote payments and leverage a range of enabling technologies - NFC, Bluetooth, QR codes, mobile web payments and SMS. The exact choice of enabling technology(ies) will depend on the use case in question, for example in markets where the NFC device installed base is small and NFC-enabled Point of Sale (POS) limited then QR codes will be a better positioned to support mobile proximity payments and should be offered alongside NFC.

At the same time consumers, particularly in mature markets, are using an increasing range of connected devices to interact with digital services and digital wallets should ideally reflect this trend, meaning that they are accessible via smartphones, feature phones, tablets and laptops. In this scenario service providers will need to be mindful that customers will want a uniform, optimized digital wallet experience across each type of different device type and form factors.

Digital wallet platforms specifications – do not compromise

A digital wallet is a complex proposition and when selecting an enabling platform service providers should have the following attributes on their specification check-list:

- Look to platforms that are flexible and easy to scale
- Support for relevant industry specifications, standards and best practice
- Support for both mobile proximity and mobile remote payments
- Multi-device and multi Operating System (OS) support
- Support for easy integration with third-party applications and services
- Support for location / contextually aware services
- Strong reporting, settlement and reconciliation features
- Data analytics
- Strong focus on risk management and payment security, with appropriate standards compliance in this area
- Support for multiple enabling technologies.
Appendix

This white paper was researched, authored and produced by Ovum in association with Mahindra Comviva, as part of a series of papers assessing the current state and future market direction of value-added services for mobile operators.

About Mahindra Comviva

Mahindra Comviva is the global leader in providing mobility solutions. It is a subsidiary of Tech Mahindra and a part of the USD 16.7 billion Mahindra Group. With an extensive portfolio spanning mobile finance, content, infotainment, messaging and mobile data solutions, Mahindra Comviva enables service providers to enhance customer experience, rationalize costs and accelerate revenue growth. Its mobility solutions are deployed by 130 mobile service providers and financial institutions in 90 plus countries, transforming the lives of over a billion people across the world. For more information, please visit: www.mahindracomviva.com

Ovum Consulting

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