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Mobile Payments – the battle for customer insight

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Industries are reshaped by mobile technology, and this is true in particular for retail and payments. As with all industry landscape shifts, new winners and losers are bound to emerge.

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Mobile devices are rapidly becoming the primary tool for day to day activities like scheduling the day, shopping, and getting around. Industries are reshaped by mobile technology, and this is true in particular for retail and payments. According to an Accenture survey, 42% of North American consumers used their mobile phone as a payment device in 2014, compared to 17% just two years ago. As with all industry landscape shifts, new winners and losers are bound to emerge.

In this posting, we take a look at the overall landscape of mobile payments, focusing on how this affects retail. While the shift to mobile in online shopping (from PCs to mobile devices) is settling down, changes continue as Online-to-Offline (O2O) application models of mobile payment are building a presence.

Digital services transforming every step of how we shop

To understand how the landscape is changing, the first step is to see how retail actually works. The customer journey of a retail transaction is commonly understood as a “purchasing funnel,” with steps such as discovery, interest/consideration, payment, receipt of product/service and loyalty (see figure 1). It is a funnel because there is some fallout for each step; not all people who viewed the ads will show interest in a product, and not all people who showed interest will actually buy, for example.

Figure 1. Digital disruption is having an effect across the purchasing funnel

The digital disruption is affecting every step of the purchasing funnel, enabling customers to discover and purchase products in a more convenient manner. In the discovery step, targeted ads help customers get useful information, relevant to their interests and needs. In the interest/consideration step digital technology makes it possible to browse through and compare a wide variety of options, as well as automatically select the best option based on pre-set criteria. For example, purchasing an airline ticket has been transformed by services such as Skyscanner or Google Flights that make it possible to compare a broad range of fare and date options on a single platform. As for the payment step, innovations seek to overcome the downside of carrying multiple credit cards or just to make making payments easier and faster. Receiving products or service is also being transformed – you can now receive virtually anything to your doorstep with a click (Amazon Prime), or order service to your location wherever you are (Uber).

This digital transformation also helps merchants. In the discovery step, instead of unfocused messages to the general public or a large number of illusive target customers, targeted ads provide marketers a new level of accuracy and effectiveness. In the interest/consideration, payment, and receipt of product/ service steps digital innovations provide the customer better service but also valuable quantitative feedback to the merchant. This data is critical for product and service development. Lastly, customer loyalty systems and data provide critical insight to the target market, helping to increase sales per customer. Merchants are benefitting from the digital transformation, but also play a key role in service adaptation. Their choice of terminal equipment directly affects which payment system can be used in their stores. No surprise then that payment solutions seek to provide benefits to the merchants.

An abundance of new mobile payment technologies

Mobile payment technologies are tied to the core of retail. Early solutions for mobile payments such as micro payments provided by mobile network operators demonstrated the potential of mobile payments as a simpler way to buy. Since then, there has been considerable further development. Below we list some of the technologies that today are building blocks for a simple and secure mobile payment platform.

- **Near Field Communication (NFC)**: Commonly used for many of the prominent mobile payment options (such as Apple Pay or Samsung Pay), NFC payment involves two electronic devices establishing a radio connection through close contact to complete a transaction. It is perceived as an alternative to credit cards because NFC requires the physical presence of a mobile device (instead of a credit card) to complete transaction (transmission only occurs over short distance, on the order of centimeters rather than meters)
- **Quick Response (QR) codes and barcodes**: First introduced as an alternative to NFC, QR codes are printed codes that can be scanned and interpreted by a mobile device. Some services have been successful to use this as a standalone mobile payment solution (for example, the Starbucks app) but one of the more interesting

cases providing significant added value to customers was Sainsbury's, a UK-based grocery store[1]. They allowed customers scan QR codes and barcodes when placing items into their shopping cart, and then utilize NFC for payment at the checkout register without having to scan all the items again. By combining these technologies, Sainsbury's addressed their own and customers' needs; scanning and tracking items while shopping gives better visibility regarding price and total cost, and NFC mobile payment at checkout made transactions quick

- **Magnetic Secure Transmission (MST) technology**: MST turns "swipe" payment terminals into contactless readers. A coil inside the customer's mobile device emulates the magnetic field produced by a traditional credit or debit card magnetic strip, making it possible to "swipe" a mobile device on existing payment terminals. Because no additional hardware investment is required for merchants, MST technology is easier to deploy than other mobile payment technologies. The technology was patented by LoopPay, which was acquired by Samsung[2]. Although it is too early to determine the success of Samsung Pay, expectations are high due to MST's unique advantage (swipe cards are particularly popular in Korea)
- **Beacon technology**: This enables sensing of mobile devices in the local area. While currently used for marketing purposes (indoor navigation and location-based push-marketing), it has the potential to substitute NFC as a more flexible mobile payment solution. While NFC requires physical proximity to complete a transaction, beacon technology can send information to a device even 50 meters away. This can eliminate the need to stand in line at checkout, or wait for the waiter to come by your table to swipe your card or tap your mobile device
- **Tokenization**: While convenience is a major driver for mobile payments, security is critical when implementing new solutions. Tokenization is a technology that has been developed to overcome the shortcomings of credit cards or other code-based security measures. It is a specific algorithm that generates a code so that the credit card issuer can identify that a payment has been made without giving credit card or identifying information to the merchant or payment processor. This technology is used both for Apple Pay and Samsung Pay
- **Biometrics**: Utilizing other mobile device hardware features to strengthen security is also possible. Currently Apple Pay utilizes fingerprints to authenticate payments. Alipay, China's retail giant Alibaba's mobile payment service, is planning to use selfies (face recognition) as verification[3].

The battle for customer insight

The integration of novel mobile technologies has opened up the gates for mobile technology players to join and compete in this once walled-off territory of payment within the retail value chain. Notably, players in the mobile device and communications industry – mobile network operators (MNOs), operating equipment manufacturers (OEMs), operating system (OS) providers, and app developers – are all actively introducing new services. It is still early to say how this ends, but among the strong entrants currently are Apple Pay, Samsung Pay and Google Wallet, all of them either hardware manufacturers, OS providers or both. On the other hand, traditional players in this field – the financial entities and retailers – are doing their best to defend their turf. Figure 2 illustrates this, with examples categorized by step in the purchasing funnel and industry of origin.

Figure 2. Players from multiple industries have entered the mobile payments arena

The key to winning is ultimately to gain control over customer data. This data is only useful when the connection can be made to what kind of journey the customer undergoes before, during and after payment, and how this relates to the customer's past behaviour. This is the basis for targeted online marketing and creating a customized shopping experience.

App developers are uniquely positioned to provide real time customer tracking and interventions across the purchasing funnel. For example, Kakao is able to track individuals from the discovery of a product (through their own shopping channels) to the payment (through KakaoPay, which is based on LG CNS fintech solution, and MPay). This is used to optimize the shopping experience and offerings to the customers' specific needs. Another example is Dash, which enables restaurant or bar-goers to pay the tab via mobile payment, instead of having to wait for the waiter to come by and collect the tab (allowing also easy splitting of the tab between friends). Dash can then analyse the data collected (individuals' profiles, frequency of visit, items purchased and amount of money spent) and advise the restaurants which types of promotions and benefits they should provide ensure customers return in the future. Starbucks, while being categorized as an offline retailer, developed its own app to control payment through prepaid credits. However, while apps like these offer benefits, customers are not implementing them as widely as anticipated. Most apps generally lack the scalability of traditional financial processing networks, which offer nation-wide implementation. Also, unlike individual app developing companies, companies such as Apple, Samsung and Google can drive more widespread implementation given that their devices (or OS) are used by so many people.

This battle over customer data is also affecting merchants due to tokenization technology. Tokenization enables a secure transaction, but also means that the merchant no longer has visibility of individual customers. For example, a grocery chain would not be able identify a customer using Apple Pay (which uses tokenization) unless the customer uses the grocer's loyalty card. Essentially this takes away power from the retailer's hands and gives it to the mobile payment operator.

If you cannot beat them, join them

It will still take a few years for the dust to settle and the true winners to emerge in mobile payments. Apple, Samsung and Google are entering with force, and other players such as LG are taking countermeasures to keep their foot in the game. By the way, LG Pay is expected to launch soon. Banks and financial data processing networks (such as Visa or Master card) are most certainly a force to reckon. Merchants can also have their say by deciding which terminal equipment(s) they adopt. Within the mobile industry, operating equipment (device) manufacturers influence the technology. App developers will undoubtedly continue to develop payment apps that are designed to solve specific payment pain points that customers face daily. Meanwhile, all solutions must address security concerns. Choosing the right technology and partnering up with the strong entities that influence the ecosystem will be a key to success, and will hopefully drive mobile payments into a win-win solution for all parties involved in the purchasing process.

Further reading and references:

This blog is based on a broad range of articles and reports. Some of the more interesting ones are listed here:

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