

31.6: Reading- Mobile Commerce and Mobile Payment Systems

Mobile Commerce

The phrase **mobile commerce** was originally coined in 1997 by Kevin Duffey at the launch of the Global Mobile Commerce Forum, to mean “the delivery of electronic commerce capabilities directly into the consumer’s hand, anywhere, via wireless technology.” Many choose to think of Mobile Commerce as meaning “a retail outlet in your customer’s pocket.”

Mobile commerce is worth US\$230 billion, with Asia representing almost half of the market, and has been forecast to reach US\$700 billion in 2017. According to BI Intelligence in January 2013, 29% of mobile users have now made a purchase with their phones. Walmart estimated that 40% of all visits to their internet shopping site in December 2012 was from a mobile device. Bank of America predicts \$67.1 billion in purchases will be made from mobile devices by European and U.S. shoppers in 2015. Mobile retailers in UK alone are expected to increase revenues up to 31% in FY 2013–14.

Mobile Payment

Mobile payment, also referred to as mobile money, mobile money transfer, and mobile wallet generally refer to payment services operated under financial regulation and performed from or via a mobile device. Instead of paying with cash, cheque, or credit cards, a consumer can use a mobile phone to pay for a wide range of services and digital or hard goods. Although the concept of using non-coin-based currency systems has a long history, it is only recently that the technology to support such systems has become widely available.

Mobile payment is being adopted all over the world in different ways. In 2008, the combined market for all types of mobile payments was projected to reach more than \$600B globally by 2013, which would be double the figure as of February, 2011. The mobile payment market for goods and services, excluding contactless Near Field Communication or NFC transactions and money transfers, is expected to exceed \$300B globally by 2013.

In developing countries mobile payment solutions have been deployed as a means of extending financial services to the community known as the “unbanked” or “underbanked,” which is estimated to be as much as 50% of the world’s adult population, according to Financial Access’s 2009 Report “Half the World is Unbanked.”

Near Field Communications (NFC)

Have you ever wondered what makes tap-and-go services like Apple Pay, Google Wallet and Amiibo work? As much as it seems like pure magic, it isn’t. So what is it exactly? Simply put, it’s a method of wireless data transfer that detects and then enables technology in close proximity to communicate without the need for an Internet connection. It’s easy, fast, and works automagically.

No pairing code is necessary to link up and because it uses chips that run on very low amounts of power (or passively, using even less), it’s much more power-efficient than other wireless communication types. At its core, NFC works to identify us by our enabled cards and devices (and by extension, our bank accounts and other personal info.)

NFC chips stocked inside credit cards for contactless payments is nothing new. But a more recent and admittedly more enticing use case for NFC is with your smartphone, which can digitize your entire wallet. Virtually every mobile OS maker has their own apps that offer unique NFC functionality. Android users have the widest variety to choose from. First off, US users can nab Google Wallet, which accesses your funds for contactless payments. Samsung Pay, which operates similarly, is on the way for Samsung phone users in the United States and Korea this Summer.

However, a feature that all Android owners have been able to enjoy is called Android Beam. It was implemented in Ice Cream Sandwich 4.0 as a nifty, simple process that allows for the transfer of photos, contacts and directions that works by holding two phones together.

Apple’s iPhone 6 and iPhone 6 Plus received NFC functionality, albeit with limited use so far, only for Apple Pay. It’s a lot like Google Wallet, in that it’s an app which gives users the ability to pay for goods and services at participating retailers. Lastly, those who prefer Microsoft’s Windows Phone will be able to use Microsoft Payments when it launches likely around the launch of Windows 10.

Whichever device you have, it’s likely that a local supermarket, train station, taxi or coffee shop supports contactless payments via your phone’s NFC chip. Go try it out! Simply hold it close to a contactless payment terminal and instantly, like swiping a credit card, the payment will complete.

Looking toward the future, it's possible that NFC chips could be used to replace every card in your wallet. That means the unique info on your frequent shopper loyalty cards, library card, business cards and the like could be contained and transmitted simply via NFC.

Forms of Mobile Payment

Apple Pay is a mobile payment service that lets certain Apple mobile devices make payments at retail and online checkout. It digitizes and replaces the credit or debit magnetic stripe card transaction at credit card terminals. The service lets Apple devices wirelessly communicate with point of sale systems using a near field communication (NFC) antenna, a “dedicated chip that stores encrypted payment information” (known as the Secure Element), and Apple’s Touch ID and Passbook. The service is compatible with the iPhone 6, iPhone 6 Plus, and the Apple Watch. Users with iPhone 5, 5C, 5S, 6, or 6 Plus can use the service through an Apple Watch, though the watch lacks the added Touch ID security. By default, Apple Pay is disabled, and the owner must enter a code to enable Apple Pay after putting on the watch. The watch’s sensors will then ensure that it is still being worn by its owner. If the watch is removed at any point, then Apple Pay is disabled again.

The service keeps customer payment information private from the retailer, and creates a “dynamic security code [. . .] generated for each transaction.” Apple added that they would not track usage, which would stay between the customers, the vendors, and the banks. Users can also remotely halt the service on a lost phone via the Find My iPhone service.

To check out at brick and mortar stores, users hold their authenticated Apple device to the point of sale system. iPhone users authenticate by holding their fingerprint to the phone’s Touch ID sensor, and Apple Watch users authenticate by double clicking a button on the device. There will be 220,000 participating vendors at the time of launch, including department stores Macy’s and Bloomingdales, drugstores Walgreens and Duane Reade, restaurants Subway and McDonald’s, and other retailers including Target and Whole Foods. To check out online in supported mobile apps, users choose “Apple Pay” as their payment method and authenticate with Touch ID. Groupon, Panera Bread, and Uber apps will be compatible with Apple Pay at the service’s launch. Users can add credit cards to the service in any of three ways: through their iTunes accounts, by taking a photo of the card, or by entering the card information manually. The service will only work in the United States, though Apple plans to expand to other countries.



Google Wallet is a mobile payment system developed by Google that allows its users to store debit cards, credit cards, loyalty cards, and gift cards among other things, as well as redeeming sales promotions on their mobile phone. Google Wallet can use near field communication (NFC) to “make secure payments fast and convenient by simply tapping the phone on any PayPass-enabled terminal at checkout.”

Google demonstrated the app at a press conference on May 26, 2011. The app was released in the United States only on September 19, 2011. The service works with the 300,000 plus MasterCard PayPass merchant locations, with Visa licensing their Visa payWave system to Google for use in Wallet as of September 20, 2011. On May 15, 2013, Google announced the integration of Google Wallet and Gmail, allowing users to send money through Gmail attachments. Like the main service, Google Wallet’s Gmail integration is also currently only available in the United States, to those 18 or older. On February 23, 2015, Google announced that it would acquire the intellectual property of the carrier-backed competitor Softcard and integrate it into Google Wallet, and that AT&T Mobility, T-Mobile U.S., and Verizon Wireless would bundle the Google Wallet app on their compatible devices later in the

year. The effective merger aims to build a stronger competitor to the recently introduced Apple Pay mobile payment service. The new service will be known as Android Pay.

Where this new technology will lead the world economy and its impact on the existing monetary system remains to be seen, but we are certain it will continue to evolve rapidly!

Check Your Understanding

Answer the question(s) below to see how well you understand the topics covered in this section. This short quiz does **not** count toward your grade in the class, and you can retake it an unlimited number of times.

Use this quiz to check your understanding and decide whether to (1) study the previous section further or (2) move on to the next section.

<https://assessments.lumenlearning.com/assessments/171>

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