

# Has Mobile Payment Finally Live Up to Its Expectation in Replacing Cash and Credit?

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## Abstract

The purpose of this paper is to study whether mobile payment is a better payment method compared to cash and credit. Mobile payment is an innovative way of paying our bill using our mobile devices. However, it has failed to live up to its expectation when it first introduced to the market decades ago with various of impeding factors like cost, complexity, lack of trust from the consumers as well as limited network externalities. Today, with the advance of technology, consumers' demand for a faster and convenient payment method as well as the implementation of many merchants or companies, mobile payment is starting to replace conventional payment method. As a whole, this research paper concludes that mobile payment is going to replace cash and credit and to be successful globally in the near future.

**Keywords:** Mobile payment, cash and credit, e-commerce, Apple Pay.

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Cite this article: Shen, O. W., & Yazdanifard, R. (2015). Has Mobile Payment Finally Live Up to Its Expectation in Replacing Cash and Credit? *International Journal of Management, Accounting and Economics*, 2(5), 489-498.

## Introduction

Paypal, MasterCard, LevelUp and Square and Stripe are among the leading and trusted mobile payment service provider companies in our marketplace (Rogers, 2014). Recently, with the introduction of Apple Pay, Apple manages to get into this competitive, yet promising market of mobile payment. By the end of November 2014,

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Apple Pay had accounted for 1.7% of mobile payment mostly in Food and Beverages like McDonald in the market since its introduction at October 15<sup>th</sup> (Colt, 2014). Now with Apple Watch released, there will surely be significant rise in Apple Pay market share in mobile payment. Not only Apple's clever move in getting into this marketing game of mobile payment, many other companies are also interested to share this lucrative fruit that will surely yield in the coming future. In the year of 2014, many other companies such as Starbucks, Xiaomi and MasterCard have gone from their conventional business modal towards mobile payment marketing strategy (Rogers, 2014). The reason for this migration of marketing strategy is clear, is that those companies see big future in digital mobile payment. In the last decades, we have experienced the transition of cash to credit in payment method. Even though mobile payment has existed in the market for some years, people are not ready for it for some circumstances which will be discussed in the next section of this paper. Now, with the advance of technology and many big names company changing their conventional business modal, people are more acceptable towards mobile payment. Hence, this research paper is to study whether mobile payment has finally live up to its expectation in replacing mobile payment? Regarding of this much controversial and confusing discussion, some say yes while the others may say no.

### **What is Mobile Payment?**

The past 40 years has seen the development of commerce by leaps and bounds and this development has provided us many innovative ways to pay for our bill (Smart Card Alliance, 2011). From barter to currency to check to credit; and in the last decades, the world is introduced to a new way of payment, paying through our mobile device which is known as mobile payment (Smart Card Alliance, 2011). Mobile payment refers to a payment method using mobile devices like our smartphones, or personal digital assistant (Dahlberg, Mallat, Ondrus&Zmijewska, 2014). It is a payment system like credit card or any form of electronic payment; except that it relies on the usage of mobile devices rather than the conventional bank note or check or credit card (Kreyer, Pousttchi&Turowski, 2007).

Smart Card Alliance (2011) underlines 2 types of available mobile payment: remote mobile payment and proximity mobile payment. Remote mobile payment as define by its name is transaction that done remotely where there is no direct interaction between consumers and the merchant's POS system (Smart Card Alliance, 2011). Proximity payment on the other hand still maintain some interaction between consumers and merchant's POS system to some extent namely through contactless payment (Smart Card Alliance, 2011). Gobry, (2012) from the business insider has listed out four types of mobile payments: carrier billing, Near Field Communication (NFC), apps and card readers each with their benefits and weaknesses.

#### *Carrier Billing*

Carrier billing is transaction with the bill directly implies on users' phone bill. It is the earliest from of mobile payment and is regarded as the most convenient and user-friendly mobile payment method as there is no any complicated registration or bureaucratic transaction processes (Heggestuen, 2014). Carrier billing is most

frequently used in purchasing digital content like buying an app from apple store or songs from iTunes (Heggestuen, 2014). It is useful in penetrating market segmentation such as children and some developing countries where credit and debit card is unavailable (Heggestuen, 2014). As the business in carrier billing has started to lose hope in the previous years, it has succeeded to rekindle its business with the uproar of smartphone devices that rely heavily on carrier billing to make transaction. Heggestuen (2014), highlights that carrier billing has manage to power a revenue of 3billion US Dollars in mobile transaction in 2014.

### *Near Field Communication*

Near Field Communication (NFC) is a type of proximity payment which also known as the mobile POS (Point of Sale) or mobile contactless payment (Smart Card Alliance, 2011). NFC can be a massive save of time as consumers just have to tap their NFC-enabled phone close to merchant's contactless payment terminal to get the transaction done. NFC payment is available now with android version 4.4 and above as well as ios 8 can really make transaction much easier and interesting. Starbucks has also comes out with their own way of selling their products using this concept of NFC with a slight different. In Starbucks, consumers scan the 2D barcode of their bill and the transaction is done immediately through deduction of credit in their Starbucks Card account (Smart Card Alliance, 2011).

### *Mobile Application*

App is the most common type of mobile payment we see nowadays and have the largest group of users (Gobry, 2012). It is the use of our mobile application to transfer money to another party like mobile banking for example. A lot of banks and merchants like Groupon has offer mobile banking though our mobile application.

### *Card Reader*

Card reader is a relative new way of mobile payment that has its support from giant mobile payment companies like Square, Paypal, Intuit and Verifone as well as MasterCard (Gobry, 2012). It is actually a portable credit card reader that installed on our mobile devices. With this card reader technology, it can actually ease out our need to look for merchant that support card payment method and can save up our embarrassment in the circumstance that we do not have sufficient cash and the merchant does not receive card. One of the leading companies that provide this service is PayAnywhere where their company provides a lot of interesting features for their customers and has collaborated with quite a number of big name card issuers like Visa, MasterCard, American Express, Discover and PayPal with a minimum service fee (PayAnywhere, 2015).

## **The Uproar of Mobile Payment?**

Regardless of how magnificent and splendid of all the knowledge we learned about mobile payment; the fact is mobile payment fails to live up to its expectation over the years. The reasons are mainly due to consumers' acceptance and technology advances.

However, with 520 million smartphone users in China, 160 million users in the States (PYMNTS, 2015) and with the total to exceed 2 billion users worldwide by 2016 (eMarketer, 2014); we can certainly imagine the uproar of mobile payment in the coming years.

With PayPal spinning-off from eBay and the introduction of Apple Pay, mobile payment is soon to be the future of payment method (Archer, 2014). Apple Pay is considered new to this business viewing the initiator like PayPal, Google, Bling Nation as well as Softcard have been in this business for almost a decade. However, Apple could be the one who fires mobile payment to its success that others have failed to do for the past 10 years (Hernandez, 2015). With all those big name companies joining the business of mobile payment, lack of merchant acceptance is no longer an issue for consumers. Once again, our attention gets back to Apple Pay; which tops the Google search engines soon after it's released in last October. With an intention of expanding their business worldwide, Apple is believed to be in negotiation with China's national card operator UnionPay as well as People's Bank of China (PBOC) to bring Apple Pay into one of the largest market in the world (Li, 2015). Apple's decision of invading China's market is not without reason. It is their marketing strategy to start their voyage of establishing themselves in Asia Pacific; the largest market for e-commerce. Asia has found out to have the highest confidence level to accept this innovative payment method, at 65%, compared to US's 41% (Soat, 2014). Hence, it is relative easier to be successful in e-commerce business in Asia.

### **What is hindering the development of mobile payment in the past?**

When this concept of mobile payment was first introduced by Coca Cola company in 1997 in the form of contactless payment using radio frequency-identification (RFID) (NFC, 2012), it initiated a surge of innovation; hinting the end of conventional payment method. However, mobile payment could not really live up to its expectation and deliver its promises and has limited use until recently.

Mallat (2007) lists out 4 major problems: cost, network externalities, complexity and security that are impeding the success of mobile payment for the past decades.

#### *Cost*

Cost refers to the money a consumer needed to perform this method is an important indicator of people's acceptance. Generally, the cost for mobile payment is relatively higher than our conventional payment system as a user will first need to own a mobile device that is equipped with data coverage (Kreyer, Pousttchi, & Turowski, 2007). Limited network externalities or the lack of merchant acceptance is another major issue that halting the widespread of mobile payment (Mallat, 2007). However, with all of the big name companies like MasterCard, Google, Apple to name but a few joining the field of mobile payment, this issue of network externalities is no longer a major problem.

#### *Complexity*

Complexity refers to the complication or the bureaucratic procedures such as complication registration steps and commands consumers will have to go through whenever they are performing mobile payment (Mallat, 2007). This complexity has found to be the factors for consumers to choose to use cash or card over mobile payment. Nonetheless, with the fast pace advancement of technology, mobile payment can now be performed within seconds through the likes of Apple Pay and Google Wallet.

### *Security*

Last but not least, with the rise of electronic revolution, these problems that are haunting the development of mobile payments for many years before are no longer an issue; yet the only existing problem to consumers' acceptance over mobile payment is consumers' perceived risks about mobile payment. Issues like authorization, authentication, and confidentiality are among the security concerns for consumers (Kreyer, Pousttchi & Turowski, 2007). Moreover, problems with transaction records are also an issue of mobile payment (Mallat, 2007). Unlike the transaction using cash and credit, transaction through mobile payment does not issue any hardcopy of receipt or document which is quite troubling for some consumers.

Facts from Stokes (2014), suggests that using an mobile wallet app like PayPal, Apple Pay or Google Wallet can actually means more safe and secure for our transaction compare to the old-fashioned way of using credit card. This statement is due to the fact that mobile wallet app does not require much sensitive information such as our credit card number nor it requires our debit card pin number during transaction (Stokes, 2014).

Those mobile wallet app companies have also done their part to ensure the security of mobile payment. Apple Pay relies on the one-use transaction ID, Token to store the information needed for the transaction to complete, rather than storing all the users' card information waiting to be hacked by professional hacker (Stokes, 2014). Its rival, Google Wallet has of course come out with something to make their consumers feel safe using their services by storing and encrypting all the information in their servers and any access to the app is fully monitored by Google (Stoke, 2014). Google can even track down verified unauthorized transaction in the case where consumer's phone is lost or hacked by hacker (Stokes, 2014).

### *Limited Network Externalities*

Limited Network Externalities refer to the limited implementation of mobile payments by merchants (Mallat, 2007). This limitation has proved to be a vital obstacles to the development of mobile payment in the past it is very inconvenient for consumers to adopt this innovative payment method as there are only a few mobile payment service provider in that time. Now with many companies MasterCard, PayPal, Apple Pay, Google Wallet et al, getting into this game of mobile payment, this issue of limited network externalities has becomes less of a concern.

## **What is promoting the development of mobile payment in present and the future?**

### *Consumer's perspectives*

Study from American Express has shown that Y-generations consumers are highly acceptable for this innovative payment method as 52% of those ages between 18-24 years old reveal that they willing to try and use mobile payment as soon as it is available (Richards, 2013). This study has significantly showed that people nowadays are more acceptable to this innovative trend. In this fast pace era where time is gold; mobile payment is meant to save the time and effort of consumers making purchases. The need to be at the Point of Sale (POS) is no longer needed with the use of mobile payment as this innovation is meant to be location and time independence (Mallat, 2007). By that mean, it refers to the availability and possibilities of making remote transaction simply with your mobile devices (Mallat, 2007). This main sell of mobile payment is definitely making our life more wonderful and convenient.

Have you ever get frustrated because you are stuck in the middle of the war-of-queue; waiting impatiently to reach your turn when u can get your burger in McDonald or get your ticket in cinema. These frustrating issues can easily be avoided using mobile payment where we can get our transaction done remotely. Hence, transaction through our mobile device is a big big save for our precious, never-get-enough time (Mallat, 2007).

Another stronghold of mobile payment is its feature to get the transaction done anywhere, anytime and with any amount (Mallat, 2007). People always find it troublesome when they are out of cash and the ATM is nowhere to be seen; or they do not have smaller note or coin when it comes to getting your drinks from a vending machine or in a public transport (Mallat, 2007). All these head aching problems are gone for good with the introduction of mobile payment.

Lastly, high acceptability of mobile payment among the consumers lies heavily on its compatibility as well; which is the degree of mobile payment's integration in consumers' daily life (Mallat, 2007; Talls& Van, 2012). Studies suggest that mobile payments are highly compatible with purchases that involve small value transactions like paying for the bus fares or buying drinks from a vending machine (Mallat, 2007). It will be very inconvenient and troublesome when you do not have enough small changes to pay for your bus or train fares. The solution to this annoyance encounter is through the use of mobile payment. Consumers will be very pleased to have their mobile devices equipped with this mobile payment function just to spare them from embarrassment and inconvenient of not having enough small changes.

### *Merchants' perspectives*

Not only benefiting consumers, mobile payment has also benefiting merchants in terms of boosting sales and cutting their operating cost (Hernandez, 2015). By implementing mobile payment, it simply mean that less labor force is needed to finish job while revenues can get a huge boost by having the transaction done more efficiently

and faster (Hernandez, 2015; Mobile Payment Acceptance, 2014). The acceptance of mobile payment method by merchant especially small and mid-sized business (SMBs) has risen tremendously like a sprouting mushroom after a rainy day in these few years. 21% of SMBs has found out to have implemented mobile payment by July 2014; a significant rise of 11% as compared to 10% of acceptance in July 2012 (Varma, 2014).

In a survey done by Hayashi and Bradford in 2014, they found that mobile payment can greatly enhance the consumers' shopping experience, as the result, it vastly increase consumers' engagement as well as loyalty. This is due to the fact that by the implementation of mobile payment; it enables merchants to form a stronger customer-brand bond and provide greater convenience to their customers (Hayashi & Bradford, 2014). Moreover, by implementing mobile payment, it enables merchants to have a better customer data control. Personal information like phone number, address and their brand preference that consumers provide when they sign up the company's loyalty program and e-commerce user can be used by the company to tailor a better market targeting and segmentation as well as fulfilling consumers' needs (Hayashi & Bradford, 2014). However, the fragmentation of mobile payment marketing has been a major issue that stops merchants from implementing this mobile payment system that has clear benefits in the past (Hayashi & Bradford, 2014). This fragmentation refers to varieties of parties, technologies and applications that provide this mobile payment function, yet, are too fragmented and have insufficient influence (Hayashi & Bradford, 2014).

## **Discussion**

Soat (2014) concludes 2 major issues that have been halting the adoption of mobile payment in the past: lack of faith among the consumers and limited network externalities. Now with the implementation of mobile payment system in many companies and merchants as well as issuers, this issue with network externalities is barely a problem anymore. Many companies that offer e-commerce services like Apple Pay, PayPal, MasterCard, and et al. have done a lot to increase the confidence level of the consumers by developing special features like the unauthorized transaction tracking system invented by Google and the one-use-transaction token by Apple that will tremendously enhance their security level. The only existing problem now for mobile payment to be adopted globally is how well they can persuade consumers to switch from the conventional payment method that have been practiced for decades. Well, at least mobile payment service provider companies like PayPal, AliPay, Apple Pay and others have done their part fantastically and this result in 480 million mobile payment users worldwide in 2012 and the numbers is predicted to exceed 1 billion by the end of 2015 (PortioResearch, 2015).

The coming years will be the excellent accelerator for the development of mobile payment as consumers nowadays demand more convenience, compatibility as well as faster way to make any transaction. Now, with the introduction of Apple Pay and many others companies joining the business of mobile payment service provider; the issue of fragmentation of mobile payment provider is no longer a problem. Merchants and retailers can now rest assured that they will get the most secure, reliable and advance mobile payment system for their company and most importantly, for their customers. Once this convenience, efficient payment method is implemented in all SMBs, there is

no a single reason that consumer will not accept it. After all, who does not fancy this cool and smart little gadget that will get you out of all the troubles of waiting for a long queue?

Camhi, (2014) suggested that mobile payment still has a lot to do before it can be fully adopted by the market and there will not be any mass adoption of it in 2015. However, with Apple Pay comes into the scene, this revolution becomes more and more optimistic. Besides that, security concerns which have haunted the development of mobile payment are slowly moving out of the scene as people started to show trust towards mobile payment (Camhi, 2014). Issues with limited network externalities has become less and less as an obstacle as there will be tremendous increase of NFC terminal in most SMBs credited mostly to Apple Pay. This research paper foreseen that mobile payment will continue to develop globally in year 2015 and the coming years until it successfully replace the conventional, old payment method.

## Conclusion

As a whole, by considering all the limitations and advantages of mobile payment as well as the factors impeding the development of mobile payment in the past, this research paper concludes that mobile payment will definitely be the better replacement choice for the conventional cash and credit in a the near future. With more and more consumers are accepting it, mobile payment has already get a nod to get going and replace our conventional payment method. To sum up, the benefits of implementing mobile payment method have outweighed its disadvantage concerns among the consumers and marketers. Concerns such as cost, complexity, limited network externalities as well as security mentioned above can easily be eliminated with the current technology advancement. Moreover, Mobile Payment has the capacity in changing and improving our current business and marketing module as it added the mobility to our current immobile payment method. This revolution of mobile payment is the same as when our ancestors were coming up with the idea of currency to replace the old, ineffective barter systems centuries ago; people did not believe it at first. Today, the cycle continues, but with mobile payment replacing cash and credit. Still, there are still minorities that do not see that happening as they are unaware of the pace of technology; much to their disappointment, the revolution goes on until mobile payment has fully replaced cash and credit in payment method. The prospect of creating a mobile payment community is just around the corner and with the current e-business trend; this research paper has foreseen mobile payment to play a prominent role in taking e-business to the next unprecedented level.

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