# M-COMMERCE: SECURITY CHALLENGES ISSUES AND RECOMMENDED SECURE PAYMENT METHOD

**Niranjanamurthy M***

**Dr. Dharmendra Chahar ***

**Abstract**

As mobile technologies and services are in stable development, many wonder on whether or not mobile payments will be a destroyer function for mobile commerce. To have an improved considerate of the market, presently there is a require to inspect not only the technology but also the different players that are implicated. This paper investigates the use of mobile payment systems, technologies and security issues, challenges. We are discussing the methodologies, number of network providers and payment technologies provided by the Mobile networks. And also focuses on the mobile security topics and solutions relating to mobile accesses. It discusses mobile security concepts, problems, challenges and needs, and reviews the state-of-the-art mobile security emerging technologies and solutions. The focuses are on two emerging areas of mobile security: key-based security solutions for mobile devices and best payment method. Even though mobile electronic commerce has many advantages over traditional commerce, there are also drawbacks or disadvantages that need to be addressed as well. One of the drawbacks is the mobile device itself. Even though there are still concerns about using mobile electronic commerce, there are several industries that have gone ahead with their plans and have started using this form of commerce. Paypal is one of the best payment method.

**KEYWORDS:** Mobile commerce, payment systems, Technologies, security, challenges, Secure payment method.

* Research Scholar, Dept. of Computer Science & Engineering, JJTU, Rajasthan.

** HOD. Dept. of CS & IT, Seth G.B. Podar College, Nawalgarh (Jhunjhunu), Rajasthan.

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## 1 INTRODUCTION

Five million peoples are expected to own mobile phone in 2012. There are currently 250 million mobile phones in India and 100 million are added every year. In a little existence more than 500 million people are expected to have mobile phones in India. Mobile commerce (M-commerce) is a type of e-commerce conducted through mobile devices such as mobile phones, personal digital assistants (PDAs) and other devices with a wireless connection. It is quite different from traditional of E-commerce. M-commerce is the buying and selling of goods and services through wireless handheld devices. M-Commerce is the process of paying for services using a mobile phone or personal organizer. M-Commerce is the use of mobile devices to communicate, inform transact and entertain using text and data via a connection to public and private networks. M-commerce benefit: Your Internet offerings are easier and more convenient to access. You get considerable flexibility while conducting business. Transaction and personnel costs are reduced due to widespread automation of back-office operations. Field staff is more effective as they have flexible access to back-office data. For a small business could benefit from m-commerce like selling a product or service, improving productivity. Some of the advantages of M-commerce: Offers many payment options, Push advertising, direct marketing. More efficient and extensive service offered, The Internet is going mobile. The core of m-commerce is the use of a terminal (telephone, PDA, PC device) and public mobile network to access information and conduct transactions that result in the transfer of value in exchange for information, services or goods. Mobile Commerce refers to any transaction with monetary value that is conducted via a mobile telecommunications network.

Mobile business is a natural descendant to electronic business. The ability to pay automatically attached with a website is the engine behind electronic business. Electronic business has been make easy by automatic teller machines (ATM) and shared banking systems, debit and credit card systems, electronic money and stored value submissions. Mobile payments are normal evolution e-payment methods that will make possible mobile business. A mobile payment may be distinct, for our functions, as any payment where a mobile machine is used to start, permit and corroborate an exchange of financial value in return for goods and services. Mobile strategy may include mobile phones, wireless tablets and any other machine that join to mobile telecommunication system and make it likely for expenditure to be made. Mobile payments can turn out to be a

harmonize to cash, cheques, credit cards and debit cards. It can also be used for payment of bills admission to account based payment tools such as electronic money transfer, Internet banking expenses, direct debit and electronic bill presentment.

The M-commerce using these technologies changed the business scenario. The business suddenly moved from regional to global land because of access and reach of E-commerce and M-commerce. The customers have become knowledgeable through web access and are in the position to configure their requirements. The M-commerce using these technologies changed the business scenario. The business suddenly moved from regional to global land because of access and reach of E-commerce and M-commerce. The customers have become knowledgeable through web access and are in the position to configure their requirements.

Generally a mobile transaction occurs when a client accesses the web-enabled services of a merchant and after necessary negotiations and communications, decides to place an order and make payment. The order and payment information is transmitted from the mobile device to a base wireless station and from there, through the mobile communication infrastructure of the service operator, to the wireless application gateway of the merchant. In a typical mobile computing environment, one or more of the transacting parties are based on some wireless handheld devices. However, security over the mobile platform is more critical due to the open nature of wireless networks. Furthermore, security is more difficult to implement on the mobile platform because of the resource limitation of mobile handheld devices. Therefore, security mechanisms for protecting traditional computer communications need to be revisited so as to ensure that electronic transactions involving mobile devices can be secured and implemented in an effective manner. And we are recommending the best payment method is Paypal. Paypal is more safety and secure in all kinds of payments. PayPal is an e-commerce business allowing payments and money transfers to be made through the Internet. PayPal serves as an electronic alternative to traditional paper methods such as checks and money orders.

## 2. PAYMENT SYSTEM

### 2.1 Features of Payment System

Acceptable payment conditions:

*i. Usable method***:** The mobile payment function must be user friendly with the customer. The customer must also be able to modify the function to his or her convenience.

*ii. Present in all places***:** Mobile payments services must provided for transactions between one customer to another customer, from a business to a customer, between businesses. The exposure should include domestic, regional and worldwide environments. Payments can be possible in terms of low value micro-payments and high value macro-payments.

*iii. Safety, Seclusion and Faith***:** A customer must be able to conviction a mobile payment function provider that his or her credit or debit card information may not be distorted. Next, when these dealings become recorded customer seclusion should not be lost in the sense that the recognition history and payments model of the customer should not be plainly available for public study. Mobile payments have to be as nameless as cash transactions. Then the system should be fail-safe, defiant to assaults from hackers and terrorists. This will provide using civic input communications safety, biometrics and passwords incorporated into the mobile payment solution architectures.

*iv. Charge***:** The mobile payments should not be costlier than offered payment device to the amount probable. A mobile payment explanation should struggle with other modes of payment in terms of charge and expediency.

*vi. Speed:* The speed at which mobile payments are performed must be satisfactory to consumers and businesses.

*vii. Global Payments***:** To become extensively acknowledged the mobile payment request must be available word-wide.

As per our analysis and case study there are so many payment methods are available in both E-commerce and M-commerce like Billme later, Google Checkout, Paypal and Pay by Credit and Pay by Debit card in that methods we are analyze the methods and recommending Paypal is the best safe and secure payment method in both E-commerce and M-commerce.

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## 3. TOOLS FOR MOBILE PAYMENTS

The mobile technology setting offers various potential to execute mobile payments. Basically, a mobile phone may send or receive information through 3 possible channels:

SMS, USSD and WAP/GPRS. The choices of the channel authority the method of mobile payment plans are put into operation. Next the mobile payment client submission might exist in on the phone or also it might exist in the subscriber identity module.

***3.1. SMS (Short Message Services)*** This SMS service that can be transmitting from a mobile phone. Short messages are accumulated and sent by SMS centers. SMS messages have a conduit to phone different from the voice channel. SMS can be used to provide information about the position of one's account used to transmit payment commands from the phone.

***3.2. USSD Unstructured Supplementary Service Data (USSD)*** is a technology exclusive to GSM. It is a potential to build into the GSM standard for support of broadcasting information over the signal of the GSM network. USSD provides assembly based statement, allowing a multiplicity of submissions. USSD is meeting leaning business oriented technology while SMS is a store-and-forward technology.

***3.3. WAP/GPRS General Packet Radio Service (GPRS)*** is a mobile information service available to GSM users. GPRS provides packet-switched data for GSM networks. GPRS allows services such as Wireless Application Protocol (WAP) right to use, Multimedia Messaging Service (MMS), and for Internet contact services such as email and WWW to use in mobile phones.

***3.4. SIM Application - The subscriber identity module (SIM)*** used in GSM mobile phones is a smart license, it is a small chip with processing authority and storage. The information in the SIM can be protected using deterministic algorithms and keys. In this SIM applications moderately more secure than customer functions that exist in the mobile phone. When the customer obtains a new mobile phone only the SIM needs to be moved.

***3.5. Mobile Folder -*** Mobile payment request software that exist in on the mobile phone with particulars of the customer that allows the customer to make expenses using the mobile phone is called as a mobile folder. Customers can use with numerous of debit or credit payment appliances

in a single folder. Numerous executions of folders that are company explicit are in use internationally.

## 4 MOBILE SECURITY, THREATS, AND NEEDS

### 4.1 Mobile security threats in mobile access

Whenever discussing mobile security, we must understand mobile security threats to mobile phones and mobile accesses. Mobile phones have certain specific features (such as mobility) which make these devices more vulnerable to security attacks. Collin Richard Mulliner in [Mulliner 2006] listed the following features:

• Mobility: This is the most important characteristic of the mobile phones. Since mobile users can take them to anywhere, the chances of getting stolen, lost, or physically tempered increases as compared to stationary devices.

• Strong Personalization: As a personal device, mobile devices usually are not shared among multiple users.

• Strong Connectivity: Mobile phones are commonly used to connect to other devices over the wireless networks (or wireless Internet) for data exchanges.

• Technology Convergence: Today numerous functional features are integrated in the mobile phones, for example gaming, video and data sharing, and internet browsing.

• Limited Resources and Reduced Capabilities: Comparing with stationary devices, mobile devices have four major limitations: a) limited battery life, b) limited computing power, c) very small display screen size, and d) very small sized keys for inputs. These limits bring the challenges in building mobile security technology.

These features render mobile devices vulnerable to certain types of attacks. Table 5.1 summarizes these attacks, relating causes, and potential affects.

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## 4.2 Mobile Security Requirements and Needs

| TABLE 5.1: Categorization of Attacks Causes (Features) | Type of Attack | Mobile Security Affects |
|---|---|---|
| Mobility | Lost or theft device | Authentication, Confidentiality |
| Limited resources | DoS (Denial of Service) | Data Integrity, Confidentiality, Availability |
| Strong Connectivity Requirement | Viruses or worms (malware) | Data Integrity, Confidentiality, and Charging |
| O.S. Weaknesses, Code Exploitation | Break-In Attacks | Prepare ground for other attacks |

Although the fundamental concepts of security remain the same while considering mobile security relating mobile accesses, some new needs and requirements must be considered to cope with the above threats in mobile accesses. They are summarized as followings.

• Mobile access confidentiality: This makes sure that only the authorized persons are allowed to access to mobile data though mobile devices.

• Mobile data integrity: This makes sure that mobile data are consistent, correct and accessible.

• Mobile service availability: This requires the mobile resources on mobile devices only be accessed and used by the legitimate owners.

• Disputed mobile service charging: This refers to the case in which a mobile subscriber may be charged for mobile services and connection times because someone else caused the mobile device to access such mobile services without the user's knowledge.

These mobile security threats bring new requirements and needs for more effective mobile security solutions and technologies to ensure mobile access security on mobile devices so that the end-to-end protection between mobile devices can be assured.

## 4.3 Implementation Challenges in Mobile Security

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Because of the limits of mobile devices, implementing mobile security solutions must address the following needs and challenges in building mobile security.

• *Energy saving security solutions:* The limited battery life and operation time requires mobile security solutions to be implemented in an energy saving approach.

• *Limited applications of existing security solutions* – The limited computing capability and processing power of mobile devices restrict the applications of many existing complex security solutions, which require heavy processors.

• *Restricted size of screen and keyboard:* It restricts the input and output capabilities of mobile phones, which in turn cause some security related applications, for example, password protection may not be easy for mobile users.

• *Higher portability and inter-operation issues* – Since mobile devices may be equipped with different mobile platforms and operation environments, mobile security technologies and solutions must be implemented with a higher portability to address interoperation issues.

### 4.4 Security challenges

M-commerce is not possible without a secure environment, especially for those transactions involving monetary value. Depending on the point of views of the different participants in an m-commerce scenario, there are different security challenges. These security challenges related to:

The mobile device – confidential user data on the mobile device as well as the device itself should be protected from unauthorized use. The security mechanisms employed here include user authentication (e.g. PIN or password authentication), secure storage of confidential data (e.g. SIM card in mobile phones) and security of the operating system.

The radio interface – access to a telecommunication network requires the protection of transmitted data in terms of confidentiality, integrity, and authenticity. In particular, the user's personal data should be protected from eavesdropping.

The network operator infrastructure – security mechanisms for the end user often terminate in the access network. This raises questions regarding the security of the user's data within and beyond the access network. Moreover, the user receives certain services for which he/she has to pay. This

often involves the network operator and he/she will want to be assured about correct charging and billing.

The kind of m-commerce application – m-commerce applications, especially those involving payment, need to be secured to assure customers, merchants, and network operators.

For example, in a payment scenario both sides will want to authenticate each other before committing to a payment. Also, the customer will want assurance about the delivery of goods or services. In addition to the authenticity, confidentiality and integrity of sent payment information, non-repudiation is important.

## 5  MOBILE PAYMENT ENVIRONMENT ANALYSIS – contingency factors

The four outer dimensions of our research framework describe factors that are external to the mobile payment business environment, and thus outside management control. They include changing social/cultural, commercial, technical, and legal/regulatory environment. The four factors are likely to have a significant impact on the business, and therefore the ability to understand, explain, and predict these factors is important for both researchers and managers (Jayawardhena & Foley, 2000).

### 5.1 Changing social and cultural environment

Changes in people's social and cultural environment easily affect their consumption habits, buying behavior, and thus their need for new payment systems. Examples of these changes include changing payment cultures and lifestyles, greater mobility of people, and increased appreciation for leisure time. Our literature review did not reveal any academic papers that would have investigated the effects of social and cultural changes on mobile payment demand and development. Relevant research reports and studies on related fields are discussed below to provide suggestions for future mobile payment research on this dimension.

One study that analyses the influence of culture on development of payment systems was performed the authors pointed out that mobile phones are used to a much smaller extent in the US than in Europe. They also identified clearly distinguishable payment cultures within Europe, for

example the debit orientation in Germany, or the determining smart card tradition of French banks. Other cultural factors that can influence what payment services are offered and how they are adopted include industry strengths, home-banking affinity of consumers, or strong mobile phone inclination. Common trends can be also based on neighborhood and shared cultural patterns among countries. The preference of payment instruments chosen at the real Point-of-Sale (POS) clearly influences the preferred payment method at the virtual POS.

Another comparison between mobile payment in Europe and the U.S. was performed. Qualitative study indicates that differences are well grounded by the adoption of mobile technologies, the different payment habits of customers, and the stronger involvement of the banking industry in Europe.

Many other cultural factors could be studied in relation to mobile payments as well. The effects of country characteristics, cultural similarity and adoption timing on the diffusion of wireless communications. Another study examined the influence of culture on online shopping behavior. Factors that were discussed included demographics and lifestyle characteristics, or cultural variables in developed and developing countries.

### 5.2 Changing commercial environment

Changes in the commercial environment include the development of Internet and mobile networks into commercial channels, and the increasing automation and self-service orientation of payment services. Such changes in commercial transactions create needs for new or enhanced payment services and drive their development. Mobile payment research in this dimension looks at how business practices have changed, and how these changes facilitate/necessitate the introduction of mobile payments

### 5.3 Changing technological environment

Development of wireless and other technologies facilitate the introduction of new or enhanced payment services, and drive the development of mobile payments. Research on this dimension analyses various technologies that can be used in new payment systems, and issues and challenges that they bring about.

The study explored the potential suitability of various networking technologies for providing the required features in mobile payments. The discussed technologies include 2nd and 3rd

generation mobile networks, NFC, Infrared and Bluetooth. The author also analyzed latest enabling technologies, comparing their technical features.

A new architecture for mobile payment system to improve business processes and increase customer loyalty was proposed .To have a better understanding of the technologies in mobile payments, they proposed a three dimensional m-payment framework. 'Network' gathers the technologies used in a wireless network infrastructure, 'device' represents the user wireless infrastructure, while 'mobile application' describes the technologies used mostly by mobile application developers, mobile application service providers and content providers.

Some other studies have focused on one particular technology and its use in mobile payments, for example on Bluetooth, J2ME or SET and KSL protocols.And some other studies that have focused on changing technological environment include sound-based mobile payment system modeling of policy-based mobile payment. Mobile-to-mobile payment system accountability logic for mobile payment protocols as well as a general layered framework and a new process for mobile payment. In addition to academic literature, there is a vast body of commercial and market research literature on various aspects of mobile payment (enabling) technologies.

### 5.4 Changing legal, regulatory, and standardization environment

Changes in the legal, regulatory and standardization environment describe changes in jurisdiction, regulations and in other norms with requirements to comply that create needs for new or enhanced payment services and drive the development of mobile payments. This category has not been researched extensively in the mobile payments field.

## 6. MOBILE PAYMENT MARKET ANALYSIS – COMPETITIVE FACTORS

The five inner dimensions of our framework describe the main competitive factors in the mobile payment market. The factors include consumer power, merchant power, traditional payment services (barriers to entry), new e-payment services (substitutes), and mobile payment service providers. These different players are in the center of mobile payment market development and their behavior and relative powers determine how the market is shaped.

### 6.1 The consumer power

Consumers create a specific demand for a mobile payments solution and drive its success by adopting and using it. In other words, the success of a mobile payments solution depends on the number of participants and the volume of transaction. The potential threat of customer churn could enable some pressure on mobile payments service providers to design a solution that fulfills consumers' needs and satisfies them. However, consumers do not necessarily have a direct influence on the providers at an early stage of development. This is evident from previous payment instruments that were introduced to the market without an expressed demand from the consumers. For instance, debit cards were brought to the market to limit the number of customers going to bank tellers to withdraw cash. This was mainly done to improve the business processes and reduce the costs of banks. With limited consumer influence in the early development stages, the risks of solution's failure increase.

### 6.2 Merchant power

Merchants[1] have an important role in the development of payment services. They create the market for financial institutions and other payment service providers. Some payment solution failures were explained by the lack of merchant involvement in development and deployment. Their active participation in promoting a payment solution is crucial to consolidate a large number of points of acceptance. The merchant power should not be underestimated as they could decide to altogether reject a payment scheme that would not suit them (e.g. high commission fees). A consortium of merchants could have a significant bargaining power against mobile payment service providers.

Another important aspect to take into account is that merchants could become mobile payment service providers themselves. In fact, some merchants already operate their own payment solutions in industries such as public transportation (e.g. Octopus in Hong Kong), and retail (e.g. IKEA card), among others.

### 6.3 The traditional payment services

Traditionally speaking, the more popular modes of payments for purchases are cash, checks, debit and credit cards. In Europe, there is still a strong preference of using cash over cards with the exception of Scandinavian countries. Conversely, in North America, cards are accepted for any type of purchase (i.e. micro and macro payments). The

trend of payment process digitalization started partly with the demand for a payment instrument to support electronic commerce.

A similar trend to more electronic payments modes is visible also in payments for bills/invoices lead by Internet banking/payments, e-invoices, and e-direct debit/credit assignments.

A current issue that remains to be solved is how traditional payment services could be adapted for this new demand. Some trends indicate that mobile phones are just a new channel for current card- and account-based systems. However, there is still a risk that the creation of a mobile payment market threatens the current payment schemes as newcomers could enter this market (e.g. the mobile network operators).

*6.4 New electronic payment* However, due to security and privacy issues, some intermediaries such as PayPal, Peppercoin, Paystone and others seem to have succeeded in fulfilling the needs of the online merchants and consumers, as the current credit cards schemes were not well adapted for micropayments. Therefore, a new generation of payment providers emerged to complement, rather than compete with, existing schemes.

No papers found in our review discussed the position of or competition between mobile payments and new e-payments. Some research has been done to survey, describe and classify alternative payment schemes conducted a comparative study of the consumer and merchant adoption towards electronic payment schemes.

As per our recommendation customer should see all the M-commerce and E-commerce shopping website pages must contain approved secure and trusted company logos like Buy Safe and Verisign Trusted (fig: 6.4) and also all the card payment customer should see the secure Visa/Mater etc card logos on the shopping page (Fig: 6.4). According to payment method we are recommending Paypal is the best secure and trusted payment method.

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*Fig: 6.4 Approved Payment Security logos*

### 6.5 The rivalry in the mobile payment service market

At this time, there is still uncertainty as to whether or not the adoption and use of mobile payments will prevail; these questions are primarily due to the lack of standards and immaturity of the market. Financial institutions and mobile operators are trying to overcome these issues by launching isolated initiatives to respond to current specific market needs. One consequence of this is that collaboration between banks and mobile operators is limited, as both want to control most of the value chain so as to increase their revenue. However, current payment service providers will probably keep control of the payment process and mobile network operators will create the new channel by providing their mobile network infrastructure. Some newcomers also propose mobile payment solutions where financial institutions and mobile operators are used only as tools to enable the service. This could be a threat for financial institutions if they do not monitor closely the development of such solutions.

### 7 RECOMMENDED PAYMENT METHOD

The most successful example of the Consumer-to-Consumer (C2C) model found in consumer friendly payment systems such as PayPal. People who are exchanging goods through internet auctions need secure and reliable methods to conduct monetary transactions to pay for their online purchases. PayPal is set to become the standard for online payments between consumers and small businesses in the coming years, and it is at the moment the leader in this field. The present paper will analyse the C2C payment system exemplified by PayPal, and it will explore some of the most pressing legal questions which need answering, such as the regulatory status of PayPal.[18]

PayPal® and other non-card payment methods: Email-based and alternative payment systems such as PayPal are an increasingly popular payment choice among customers. Some potential buyers are averse to using credit card numbers online or simply find an account with PayPal more convenient. PayPal alone has 40 million subscribers. In 2003, PayPal accounted for approximately 8% of online eCommerce payments and may reach 13% by 2005. 26% of medium and large Web merchants say they would offer PayPal or similar payment method as their next new payment offering, second in priority after electronic checks. Offering PayPal could increase online sales up to 8%. [19]

PayPal enables businesses to securely; conveniently and cost-effectively receive payments online. Our network builds on the existing financial infrastructure of bank accounts, debit cards and credit cards to create a global, real-time payment solution. Our product is ideally suited for small businesses, online merchants, individuals and others currently underserved by traditional payment mechanisms. PayPal has 63.8 million member accounts and is accepted in 45 countries worldwide making it an easy and effective way to transact internationally. [20]

As per our research and analysis we are recommending to M-commerce and E-commerce shopping customers Paypal is the one of the most secure and trusted Payment method. PayPal is one of the largest online payment processors in the world. After rising to prominence through its partnership with e-bay, online merchants all across the Internet accept PayPal as one of their accepted methods of payments.

**Credit card security:** When you sign up for a PayPal account, you type in the credit cards and bank accounts you wish to use for purchases one time on the PayPal secure system. Once that is accomplished, you never again have to disclose your credit card information online. By paying with PayPal, you keep your credit card information private, meaning that you can shop without worrying about a hacker downloading your account data from your online merchant.

**Flexibility:** Relieve yourself of the embarrassment and hassle of trying to purchase goods and services online only to have your credit card declined. Because you can set up multiple bank accounts, debit cards, and credit cards to fund your PayPal account, you can rest assured that your PayPal purchases always go through the first time. PayPal will then look for funds from your sources based on the order you define.

**Send money:** Whether you need to send money to a child at college or a friend in trouble across the globe, PayPal users can instantly transfer money to them with just a click of the mouse. Save time and money over costly Western Union style transfers while getting money to where you wish to send it faster than ever.

**The iPhone App:** The PayPal iPhone application makes it easy to shop online and transfer money wherever you are. All you have to do is visit the Apple iTunes store and search for the PayPal app and you will be ready to transfer, send money, pay bills, review your transaction history, and make purchases right from the palm of your hand. Because PayPal will ask you to confirm transactions with a PIN, you can rest assured that your finances are safe should your iPhone be

lost or stolen. If you meet someone you need to pay while out on the town, just bump iPhones and make your transfer.

**Online Auctions:** How could anyone talk about PayPal without mentioning eBay? Because PayPal is integrated with the online auction powerhouse, you can place bids and make purchases safely. Buyer protection and a structured complaint resolution process means that eBay bidders have more protection than most credit card holders when it comes to one of the most popular online shopping sites.

**Cost:** One of the best reasons for using PayPal is its cost: free. That's right. No annual membership fees, no processing fees, no service charges. Shoppers using PayPal get all the powerful advantages associated with the service and do not have to pay one dime.

**Discounts:** PayPal sponsors special discounts for customers that shop with PayPal at selected retailers. Users who visit www.paypal-shopping.com can find the latest special offers from companies like HP, Barnes & Noble, Wal-Mart, Nike, and more. The bottom line is that PayPal can save you money on the things you need at the places where you shop. To take advantage of the savings all you have to do is copy the special promo code from the PayPal shopping Web page and paste it into your order at your merchant's site when you pay with PayPal. PayPal serves as an electronic alternative to traditional paper methods such as checks and money orders. Below figure shows the previous year's Total Paypal transaction volume:



**PAYPAL**
**Total PayPal transaction volume**

f — forecast

Source: PayPal
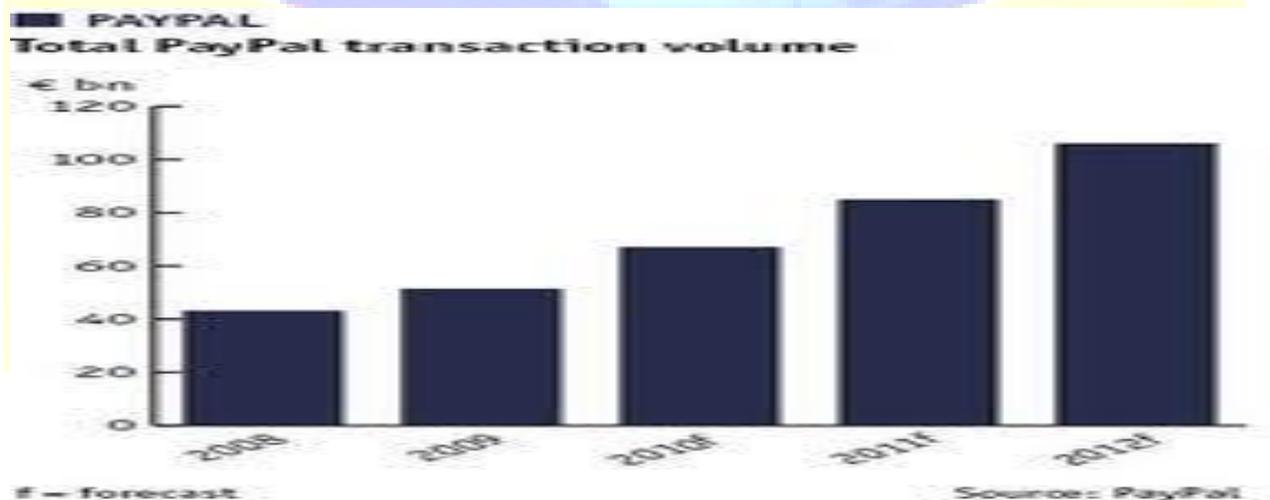
1. Easily accept online payments

2. Immediate and convenient.

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3.  Payment is deposited directly into the seller's account.

4.  No need for customer to have a PayPal account

5.  Send money to anyone with an email address.

6.  No separate hosting, shopping cart, payment gateway or merchant account required.

7.  Inexpensive set-up and processing fees

8.  You can pay directly from the item listing page.

9.  No requirement that you use your credit card (you can transfer money directly from your bank account).

10. Sellers don't see your credit card number (it is safely encrypted through PayPal's server), which limits the risk of unauthorized use.

11. Automatic payment tracking.

12. Easy set-up on the shopping cart websites

13. PayPal Buyer Protection offered on qualifying items – up to $1,000 in free coverage.

14. Include your own logo or background in Paypal

15. Additional limited protection offered through PayPal's Money Back Guarantee.

## 8. CONCLUSION

Mobile technology is more widely growing technology in the world, not only for business but also for the individual are started using mobile phones, in this paper it clearly explains the number of network provides, services and security issue for payment methodologies are clearly explained. The Mobile Payment Forum of India (MPFI) has been created with Institute for Development and Research in Banking Technology (IDRBT) and Rural Technology Business Incubator (RTBI), IIT Madras taking the direct position. It has members and legislature from the telecommunications industry, financial organizations as well members from the Reserve Bank of India plenty of defy are to be overcome for a victorious implementation of mobile payments to be extensively established as a method of payment. Businesses, merchants and consumers have to approach onward and make value creating investments. the concepts of mobile security for mobile accesses,

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and covers the existing mobile security solutions and technologies for mobile phones. In particularly, the paper reviews and compares the existing key-based security solutions.

Merchants play a significant role in mobile payment market as both adopters and promoters of the new system. While Merchants' role and adoption determinants have been examined by some of the previous studies & more research is needed to examine the power and participation of merchants in the mobile payments market.

One of the critical issues for mobile payments success is their position compared with traditional, established payment solutions. At present, mobile payments are competitive for purchases of mobile content and items like vending and ticketing, but the traditional payment services still dominate the volume sales. Future research should study the development trends of different payment services and identify opportunities for mobile payments. One interesting question is whether the value of payment services would be increased by integrating the current chip-based card systems into mobile devices. It is noteworthy that the technology basis as well as the vendors of financial smart-cards (chip-based credit etc. cards) and chip-based mobile telecom SIM cards are the same.

The role and opportunities of mobile payments in contrast with other new e-payment services are not extensively discussed in literature. This is surprising, considering the important facilitating role that payment services have in electronic and mobile commerce. More research is thus needed to determine what types of payment services are needed in the future and how the traditional and new payment services should be integrated to form a seamless overall financial infrastructure for customers.

One factor contributing to the low success of mobile payments is the fragmental market with several small and non-standard solutions. Mobile payment service providers are still looking for their roles and most of them aim for a central position in the value chain. As new payment technologies continue to combine features from both financial and telecom industry, a central aim for future research is to identify the key competencies, natural roles, business models, and strategies that different players could have in the m-payment value.

In this paper our recommendation customer should see in all the M-commerce and E-commerce shopping website pages must contain approved secure and trusted company logos like Buy Safe and Verisign Trusted and also all the card payment customer should see the secure

Visa/Mater etc card logos on the shopping page. According to payment method we are recommending Paypal is the best secure and trusted payment method.

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