

A

Seminar report

on

**“M-Commerce”**

Submitted in partial fulfillment of the requirement for the award of degree  
of MCA

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## Acknowledgement

I would like to thank respected Mr. .... and Mr. ....for giving me such a wonderful opportunity to expand my knowledge for my own branch and giving me guidelines to present a seminar report. It helped me a lot to realize of what we study for.

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## Preface

I have made this report file on the topic **M-Commerce**, I have tried my best to elucidate all the relevant detail to the topic to be included in the report. While in the beginning I have tried to give a general view about this topic.

My efforts and wholehearted co-corporation of each and everyone has ended on a successful note. I express my sincere gratitude to .....(**Guide Name**) who assisting me throughout the prepration of this topic. I thank him for providing me the reinforcement, confidence and most importantly the track for the topic whenever I needed it.

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**Topic studied**

- To understanding the basic of M-commerce
- Benefit of M-commerce with small business
- Know about technology that based on M-commerce
- How to apply technology of M-commerce for business
- Know about advantage and disadvantage of M-commerce

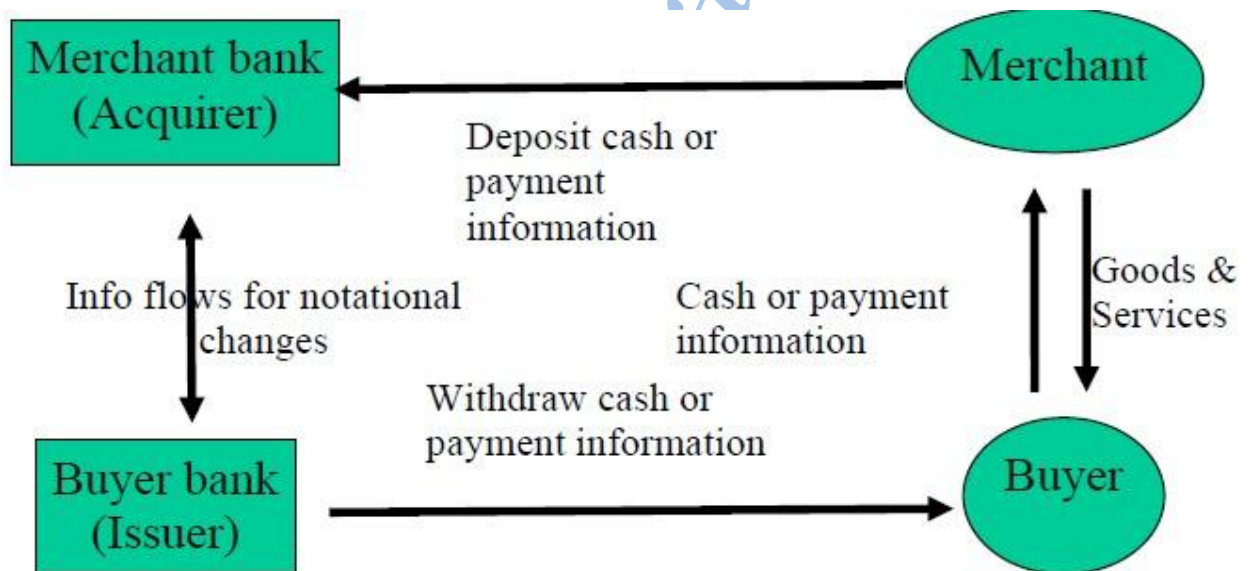
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## Introduction

In the modern world, common means of payment by an individual includes money, check, debit, credit, or bank transfer, and in trade such payments are frequently preceded by an invoice or result in a receipt. However, there are no arbitrary limits on the form a payment can take and thus in complex transactions between businesses, payments may take the form of stock or other more complicated arrangements.

“Mobile commerce is the use of mobile hand held devices to communicate, inform, transact and entertain using text and data via connection to public and private networks” With the high penetration of mobile phone in the daily life have led a new business opportunities for the mobile operator.

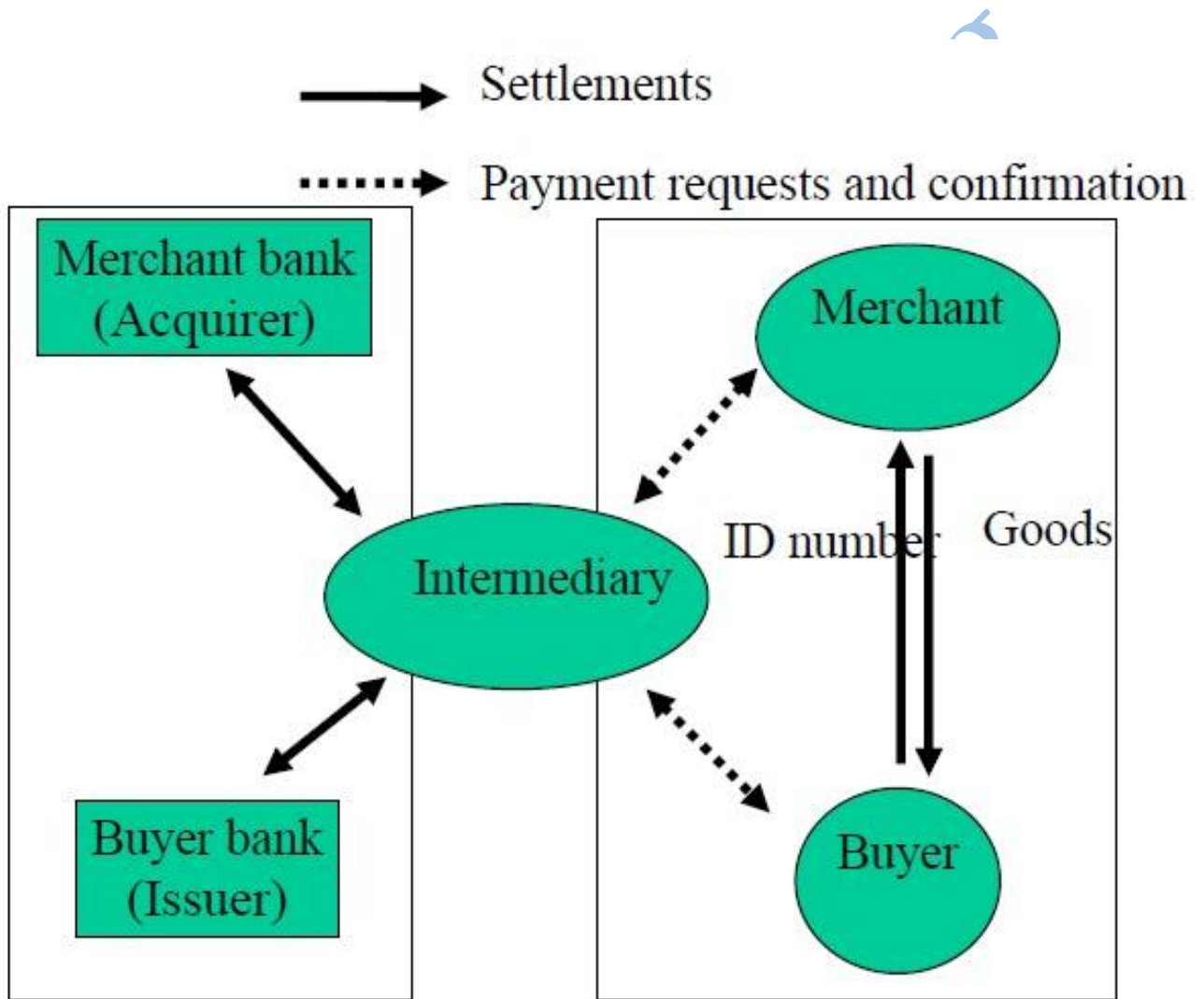
They have started providing value added services to retain their customers. The competition in their market was so heavy that They started thinking about some “killer Application” to hold their customer so as their business. One such application has led the way to mobile commerce or m-commerce. Various methods adopted to communicate with the operator for the fund transfer.



It is the slated to be the next big thing in payments systems that could revolutionize the way we do day-to-day business. Mobile commerce, this much-talked about system, is witnessing a phenomenal growth of 100% every year and is likely to grow multi-fold in the near future. It will facilitate smoother transfer of money through a mobile device. While it could make life a whole lot easier. "The future is increasingly linked to mobility. There is going to be a strong tectonic shift in the way people look at money."

Three billion people are expected to own mobile phones in the globe by 2010. There are currently 225 million mobile phones in India and 100 million are added every year. In a few years more than 500 million people are expected to have mobile phones in India

Mobile commerce is a natural successor to electronic commerce. The capability to pay electronically coupled with a website is the engine behind electronic commerce. Electronic commerce has been facilitated by automatic teller machines (ATMs) and shared banking networks, debit and credit card systems, electronic money and stored value applications, and electronic bill presentment and payment systems. Mobile payments are a natural evolution e-payment schemes that will facilitate mobile commerce.



#### Mobile electronic payment

Micropayments are means for transferring very small amounts of money, in situations where collecting such small amounts of money with the usual payment systems is

impractical, or very expensive, in terms of the amount of money being collected. The use of micropayments may be called Micro-commerce.

A mobile payment or m-payment may be defined, for our purposes, as any payment where a mobile device is used to initiate, authorize and confirm an exchange of financial value in return for goods and services.

Mobile devices may include mobile phones, PDAs, wireless tablets and any other device that connect to mobile telecommunication network and make it possible for payments to be made

A micropayment is an online transaction and can be used for digital content purchase such as music, news or consumer reports.

A micropayment can also be used to charge for digital services such as P2P applications and access to website member areas. A micropayment system is an online payment systems which supports charging relatively small amounts for online content or services.

Here the speed and cost of processing payments are critical factors in assessing a schemes usability. Fast user response is essential if the user is to be encouraged to make a large number of purchases. Processing and storage requirements placed on micropayment providers and vendors must be economic for low value transactions.

Apart from speed and costs a high degree of protection is essential such as scoring and creditworthiness checks, risk management and fraud protection.



## **Models For Mobile Payment**

- Premium SMS based transactional payments
- Direct Mobile Billing
- Mobile web payments (WAP)
- Contactless NFC (Near Field Communication)

### **1.Premium SMS**

The consumer sends a payment request via an SMS text message or an USSD to a short code and a premium charge is applied to their phone bill or their online wallet. The merchant involved is informed of the payment success and can then release the paid for goods.

Transactional payments have been popular in Asia and Europe but are now being overtaken by other mobile payment methods such as mobile web payments (WAP), mobile payment client and Direct Mobile Billing for a number of reasons:

**Poor reliability** - transactional payments can easily fail as messages get lost.

**Slow speed** - sending messages can be slow and it can take hours for a merchant to get receipt of payment. Consumers do not want to be kept waiting more than a few seconds.

**Security** - The SMS/USSD encryption ends in the radio interface, then the message is a plaintext.

**High cost** - There are many high costs associated with this method of payment. The cost of setting up short codes and paying for the delivery of media via a Multimedia Messaging Service and the resulting customer support costs to account for the number of messages that get lost or are delayed.

**Low payout rates** - operators also see high costs in running and supporting transactional payments which results in payout rates to the merchant being as low as 30%. Usually around 50%

**Low follow-on sales** - once the payment message has been sent and the goods received there is little else the consumer can do. It is difficult for them to remember where

something was purchased or how to buy it again. This also makes it difficult to tell a friend.

Some Mobile Payment services accept Premium SMS payments. Here is the typical end user payment process:

1. User sends SMS with Keyword and unique number to a Premium Short Code.
2. User receives a PIN (User billed via the short code on receipt of the PIN)
3. Finally user enters PIN to get access to content or services.

## **2.Direct Mobile Billing**

The consumer uses the mobile billing option during checkout at an e-commerce site—such as an online gaming site—to make a payment. After two-factor authentication involving

- A PIN
- One-Time-Password

the consumer's mobile account is charged for the purchase. It is a true alternative payment method that does not require the use of credit/debit cards or pre-registration at an online payment solution such as PayPal, thus bypassing banks and credit card companies altogether. This type of mobile payment method, which is extremely prevalent and popular in Asia, provides the following benefits:

**Security** - Two-factor authentication and a risk management engine prevents fraud.

**Convenience** - No pre-registration and no new mobile software is required.

**Easy** - It's just another option during the checkout process.

**Fast** - Most transactions are completed in less than 10 seconds.

**Proven** - 70% of all digital content purchased online in some parts of Asia uses the Direct Mobile Billing method.

### **3.Mobile Web Payment**

The consumer uses web pages displayed or additional applications downloaded and installed on the mobile phone to make a payment. It uses WAP (Wireless Application Protocol) as underlying technology and thus inherits all the advantages and disadvantages of WAP. However, using a familiar web payment model gives a number of proven benefits:

**Follow-on sales** where the mobile web payment can lead back to a store or to other goods the consumer may like. These pages have a URL and can be bookmarked making it easy to re-visit or share with friends.

**High customer satisfaction** from quick and predictable payments

**Ease of use** from a familiar set of online payment pages

However, unless the mobile account is directly charged through a mobile network operator, the use of a credit/debit card or pre-registration at online payment solution such as PayPal is still required just as in a desktop environment.

Mobile web payment methods are now being mandated by a number of mobile network operators.

A number of different actual payment mechanisms can be used behind a consistent set of web pages.

### **4.Proximity payments are also called Point Of Sale (POS) payments.**

Proximity Payments are those payments in which the transaction initiation devices are in the same vicinity. In case of a user paying for the goods he purchased from a grocery store, his payment device need to communicate with the merchants' device. Because of this reason Proximity payments are also called Point of Sale (POS) Payments.

In countries where smart card payments are popular, mobile operator also tried to tap this potential market and attempts are made to convert smart card kinds of payments with the mobile phone. In addition to this there are some technical reasons. With the wide acceptance of Infra Red as well as Bluetooth interfaces, financial institutions started thinking about integrating the smart card payment application in to the mobile phones, since this will reduce the infrastructure requirement for accepting the smart card like smartcard reader and the like.

Industry has also come up with the required standard and specifications that the application needs to follow. This will allow the interoperability of the financial

applications. EMV, CEPS (Common Electronic Purse Specification) are few among them.

This scheme work mainly based on offline mode. The mobile device will not communicate with the server while doing the transactions. At some particular interval, the mobile device updates the server with the details regarding the transaction.

Proximity payments have the popularity because of less operation cost like communication cost, infrastructural cost etc. This make it capable of doing micro transaction, since no communication with the server is required to do the transaction. There by reducing the cost for each transaction. Cost per transaction is significant when the user transact with small amount.

Some of the hindrance for accepting this kind scheme by the financial institution is the development of other technology. As the cost for GPRS connectivity is coming down, the transaction cost for online transaction, even for small amount may be affordable in coming future.

## **Characteristics**

### **Mobile Payment Characteristics**

A mobile payment service in order to become acceptable in the market as a mode of payment the following conditions have to be met

**a) Simplicity and Usability:**

The m-payment application must be user friendly with little or no learning curve to the customer. The customer must also be able to personalize the application to suit his or her convenience.

**b) Universality:**

M-payments service must provide for transactions between one customer to another customer (C2C), or from a business to a customer (B2C) or between businesses (B2B). The coverage should include domestic, regional and global environments. Payments must be possible in terms of both low value micro-payments and high value macro-payments.

**c) Interoperability:**

Development should be based on standards and open technologies that allow one implemented system to interact with other systems.

**d) Security, Privacy and Trust:**

A customer must be able to trust a mobile payment application provider that his or her credit or debit card information may not be misused. Secondly, when these transactions become recorded customer privacy should not be lost in the sense that the credit histories and spending patterns of the customer should not be openly available for public scrutiny. Mobile payments have to be as anonymous as cash transactions

**e) Cost:**

The m-payments should not be costlier than existing payment mechanisms to the extent possible. A m-payment solution should compete with other modes of payment in terms of cost and convenience.

**f) Speed:**

The speed at which m-payments are executed must be acceptable to customers and merchants.

## **Areas and Uses of M-commerce**

In the current commerce industry, mobile commerce or M-Commerce has been entered in finance, services, retails, tele-communication and information technology services. In these sectors, M-Commerce is not only being widely accepted but also it is being more used as a popular way of business/ commerce.

### **1.Finance Sectors**

Mobile Commerce works vastly in finance sector including all big and major financial institutes, banks, stock market and share brokers. Whenever any user needs money or wants any sort of banking and finance related services, he/she can access the services or register services via voice calling or via Short Message Services (SMS) services. WAP based mobile handsets allow the user to access the official website of the institute.

User can transact money or transfer money, or pay the bill from its bank account using mobile commerce facilities. Banks also provide round the clock customer care services, which can be used any time through voice calling. Some customer care services are also provides non-voice services on mobile that is known as insta-alert facility.

While in the stock market, the user can access the stock market quotes and get in live touch with current trading status on its mobile in two forms either voice (customer assistance) or non-voice (sms alerts) or both.

The share broker sends market trends and tips of trading on their clients' mobile. Also broker can suggest the appropriate stock for intra-day trading to their users.

### **2.Telecommunication Sectors**

Mobile has played a giant role in communication technology through its versatility and superiority. The ubiquity and easy usage has further made it extremely popular across the globe. It has already surpassed the fixed phone in the world. Software platform is essential for operating any mobile and this tool has revolutionized the communication world because of its functioning as a small computer.

The booming popularity has forced the corporate world to develop a new commerce platform that can reach to masses. Mobile commerce has attracted massive traffic because of its unique characteristics. The user can change the service of any financial institute or banks if gets better product and service or user is unsatisfied with the service of the subscribing company. Besides this several bills can be paid using mobile and user can also check the available balance, the status of cheques, the status of requested processing and customer care support.

### **3.Several dealings can be handled through mobile phones.**

### **Service / Retail sectors**

Service and Retail sectors are also among the leading sectors, which have nurtured most from mobile commerce. M-Commerce has proved a major boon for these sectors. Several business dealings no matter how big or small are being finalized on the mobile phone. Customer would be able to book the order, can hire carrier/courier services and above all could also pay the dues related to it through mobile.

### **4.Information Sector**

After the bursting of dotcom bubble, e-commerce has gone downwards to hell. But the evolution of mobile commerce has again worked as ambrosia for them. A separate sector has been evolved to exercise on this field for the IT experts. The webmasters have skilfully exploited this new area of IT-enabled commerce.

In the IT field, mobile commerce has been used massively to deliver financial news, stock updates, sports figures and traffic updates and many more onto a single handheld device 'mobile'.

### **5.Security feature:**

The security features supported by the SIM enables the following:

- authentication of the subscriber identity to the network;
  - data confidentiality over the air interface;
- Subscriber Identity Authentication
- User and Signalling Data Confidentiality
  - Subscriber Identity Confidentiality

### **Advantages**

M-commerce has several major advantages over its fixed counterparts because of its specific inbuilt characteristics such as ubiquity, personalization, flexibility, and distribution, mobile commerce promises exceptional business market potential, greater efficiency and higher fruitfulness.

the advantage of m-commerce is:

- 1- providing wider reach.
- 2- reducing transaction cost
- 3- streamline business processes.
- 4- competitive pricing.
- 5- reducing time to order.



## **Disadvantages**

There are following Disadvantages of m-commerce..

- 1- small screens of most devices still limit types of file and data transfer (i.e. streaming videos, etc.)
- 2- standards guiding applications and technology development and connection(s)
- 3- WAP and SMS limited to small number of characters and text.
- 4- use of graphics limited
- 5- less functionality for mobile Internet over mobile phones and existing generation of handhelds than for mobile computers (laptops and next generation handhelds)
- 6- user interface is often difficult to learn how to use
- 7- limited bandwidth
- 8- limited roll out of higher bandwidth mobile networks and devices (i.e. 3g networks and wireless broadband networks are predominantly located in cities)
- 9- cost of establishing mobile and wireless broadband infrastructure
- 10- technology constraints of mobile devices (memory, processing power, display capabilities, input methods)
- 11- security of data moved across some mobile and wireless networks
- 12- businesses investment in hardware and infrastructure is seen as riskier as rapid evolution of mobile and wireless technologies continues.

## **Applications**

The general m-commerce applications are:

### **1. Mobile ticketing**

Tickets can be sent to mobile phones using a variety of technologies. Users are then able to use their tickets immediately by presenting their phones at the venue.

Tickets can be booked and cancelled on the mobile with the help of simple application downloads or by accessing WAP portals of various Travel agents or direct service providers. Mobile ticketing for airports, ballparks, and train stations, for example, will not only streamline unexpected metropolitan traffic surges, but also help users remotely secure parking spots (even while in their vehicles) and greatly facilitate mass surveillance at transport hubs.

### **2. Mobile vouchers, coupons and loyalty cards**

Mobile ticketing technology can also be used for the distribution of vouchers, coupons and loyalty cards. The voucher, coupon, or loyalty card is represented by a virtual token that is sent to the mobile phone. Presenting a mobile phone with one of these tokens at the point of sale allows the customer to receive the same benefits as another customer who has a loyalty card or other paper coupon/voucher. Mobile delivery enables:

- economy of scale
- quicker and easier delivery
- effective target marketing
- privacy-friendly data mining on consumer behaviour
- environment-friendly and resources-saving efficacy

### **3. Content purchase and delivery**

Currently, mobile content purchase and delivery mainly consists of the sale of ring-tones, wallpapers, and games for mobile phones. The convergence of mobile phones, mp3 players and video players into a single device will result in an increase in the purchase and delivery of full-length music tracks and video. Download speeds, if increased to 4G levels, will make it possible to buy a movie on a mobile device in a couple of seconds, while on the go.

### **4. Location-based services**

Unlike a home PC, the location of the mobile phone user is an important piece of information used during mobile commerce transactions. Knowing the location of the user allows for location based services such as:

- local maps
- local offers
- local weather
- people tracking and monitoring

## **5. Information services**

A wide variety of information services can be delivered to mobile phone users in much the same way as it is delivered to PCs. These services include:

- news services
- stock data
- sports results
- financial records
- traffic data and information

Particularly, more customized traffic information, based on users' travel patterns, will be multicast on a differentiated basis, instead of broadcasting the same news and data to all Users. This type of multicasting will be suited for more bandwidth-intensive mobile equipment.

## **6. Mobile Banking**

Banks and other financial institutions are exploring the use of mobile commerce to allow their customers to not only access account information, but also make transactions, e.g. purchasing stocks, remitting money, via mobile phones and other mobile equipment. This service is often referred to as Mobile Banking or M-Banking. More negative issues like ID theft, phishing and pharming are lurking when it comes to mobile banking, particularly done on the mobile web. Net security technology free from redundancy and paradigm shifts away from mobile web-based banking will be an optimal solution to mobile banking in the near future.

## **Future Enhancement**

### **Where is M-Commerce Now?**

An article\* written in 2007 for Internet Retailer Magazine stated, “The presence of e-retailers with mobile sites is growing; but just like Internet adoption in the mid-‘90s, e-retailers today are taking baby steps toward initiating a mobile presence. At the moment the majority of m-commerce transactions are limited to mobile device add-ons like ringtones, games, wallpapers, and screensavers.” Recent studies conducted earlier this year prove that m-commerce is still fairly small today- with approximately 3.4% – 3.9% of American mobile users utilizing m-commerce.

What is interesting, however, is what these consumers are buying. While the number of consumers utilizing m-commerce platforms has not changed too drastically, the purchases have. Of those that have made purchases via their mobile phones 58% purchased digital content for their phones, 51% purchased consumer electronics, 37% purchased computers/laptops/related equipment, 36% purchased books, 31% purchased apparel, and 20% purchased jewelry. This illustrates that consumers who use their mobile phones to make purchases are now purchasing as if they were in a retail store.

This is a dramatic difference in purchasing patterns is likely a result of increased consumer confidence in the security of m-commerce. A recent poll found that approximately 71% of consumers believe it is “very safe” or “fairly safe” to make a purchase via mobile phone.



### **Where is M-Commerce Going?**

M-commerce may not explode in the next few years, but it is likely to continue growing steadily as more advanced wireless handheld accessories become available, more applications are released to facilitate “anywhere shopping,” and retailers get on board with the technology. The biggest challenges we will see with m-commerce over the next few years will be a continuation of the struggles that retailers have faced thus far: user experience barriers, security concerns, and negative perceptions about the value of m-commerce investment.



### **M-Commerce Advice?**

Moving forward ecommerce companies should do two things: get educated about m-commerce, and leave room for m-commerce in their marketing plans. First of all, find out as much as you can about m-commerce now and stay briefed on the latest news as advancements are made so that when m-commerce starts to become vital to your business you are ready with strategy and insight. Secondly, begin developing a marketing strategy that will leverage your m-commerce website when it is time to invest in it.

## **Conclusion**

Current mobile methods involve an initial online shop experience followed by the option to pay using the mobile payment method. This involves a one-time registration process where bank or card details are stored together with delivery details. Once an account is set up purchase can be very speedy via an authentication by text message or phone call.

Major steps are being taken by each bank as well as the mobile operators to proactively promote the new payment schemes. The suggested advantages financial institutions have over mobile operators are their brand names. In fact, consumers trust and are loyal to classic payment schemes. If banks decided to extend the use of their payment systems to mobile payments, they would have instant recognition from the consumers since they already know the brand and they have been using other kind of transaction facilities on many occasions without any problems.

The smart card being most secure and proven for its security, but was not popular amount the payment schemes. The financial institutions were watching the developments in the area of smart card, until it get mature. But in spite of its proven capability in the area of security, smart card failed to get enough popularity. One of the reasons of it is the lack of acceptance by the user.

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