



SERVICES AND APPLICATIONS OF MOBILE COMMERCE IN INDIA: AN EMPIRICAL STUDY

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ABSTRACT: Mobile Commerce is the next generation mode of business. Mobile Commerce is an evolving area of E-Commerce, where users can interact with the service providers through a mobile and wireless network, using mobile devices. M-Commerce services and application can be adopted through different wireless and mobile networks. Important factor in designing M-Commerce services and applications is the identification of mobile users. This study is one of the few empirical studies which have investigated the adoption of mobile commerce in India, which is considered as one of the fastest growing countries in terms of mobile usage. This paper tried to provide an overview of the fundamentals concepts of M-Commerce. This paper summarized the different technologies used for Mobile Commerce, different services and applications of Mobile Commerce and also Mobile Internet Users in India. The study found that, M-Commerce market grows in India because so many growth drivers are favorable in India. The study also found that, 71% of the estimated 371 million mobile internet users in India will belong to urban area. However, the rural area still holds an enormous potential to drive the future growth of mobile internet in India.

Key words: Mobile Commerce, Technologies, Mobile Internet Users in India, Services.

I. INTRODUCTION

Mobile Commerce is also known as M-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 is nothing but use of mobile devices to transact communicate and entertain. In simple terms M-Commerce = E-Commerce + Wireless web. M-Commerce or Mobile Commerce refers to conducting business or commerce through mobile phone or Personal Digital Assistance (PDA). It is buying and selling of goods ordering for services or products, transferring money through mobile by accessing internet.

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. The core of M-commerce is the use of a terminal telephone, Personal Digital Assistance (PDA), Smart Pone, PC device.and public mobile network to acess information and conduct transactions that result in trasfer of value in exchange of information, services or goods. Mobile Commerce refers to any transaction with monetary value that is conducted via a mobile communications network.

II. HISTORY

Mobile Commerce services were first delivered in 1997, when the first two mobile phones enabled Coca Cola vending machines were installed in the Helsinki area in Finland. The Mobile Commerce server developed in late 1997 by Kevin Duffey at Logica. Since the launch of iPhone, mobile commerce has moved away from SMS systems and into actual applications.

III. FEATURES OF MOBILE COMMERCE

- Provision for cash deposit and withdrawals.
- Ability for third parties to make deposits into a user account.

- Ability to retail purchase.
- Over the air prepaid top ups using the cash already in the account.
- Ability to transact cash between user account.
- Provision for bill payment.

IV. NEED FOR THE STUDY

Mobile Commerce has become the latest topic for today. Business organizations have been restlessly evaluating the revenue potential of the M-commerce market and developing business models to exploit the huge profit potential of this new market. So the main purpose of this paper is to provide a description about mobile wireless technologies and applications of M-commerce. Understand the mobile internet users in India.

V. OBJECTIVES OF THE STUDY

1. To understand the basic concepts of Mobile Commerce.
2. To study the Technology used for Mobile Commerce.
3. To study the Services and Applications of Mobile Commerce.
4. To study the Mobile Internet Users in India and Worldwide Mobile Transactions Volume.

VI. RESEARCH METHODOLOGY

Secondary sources of data would be used for the study. Secondary sources of data would involve the use of Books, Journals, Websites and Magazines etc.

VII. REVIEW OF LITERATURE

❖ Chandan Gupta, Anil Chandhok and Manu Gupta (2016)

The article entitled “Hardship of M-commerce in India: Problems, Issues and challenges” This paper presents M-commerce is able to penetrate Indian market really or not, problems and issues with M-commerce in India and stopping M-commerce to expand its growth and help the people to connect to the global business. The study found that, the increasing demand of M-commerce applications in India shows that it has penetrated the Indian market but still M-commerce is at nascent stage in India and is evolving every passing day.

❖ Manpreet Kaur (2015)

The article entitled “M-commerce: SWOT Analysis”. This paper is intended to bring out the facts about the feasibility of M-commerce today, its growth and the strength and opportunities, the weaknesses and threats lying ahead. The study found that, many companies in India started using mobile for doing Business, Financial sector, Telecom sector, Banking and Real Estate are some of the sectors using mobile commerce. The study also found that, there has been tremendous growth in wireless technology in the last decade.

❖ Tarandeep Kaur (2015)

The article entitled “Transformation from E-commerce to M-commerce in India”. This paper evaluates the position of E-commerce and M-commerce in India which will be further helpful for increasing productivity in India. At the same time it will also useful to design and implement different models of mobile commerce in India as model for the commerce in India. The study found that, customized and innovative services, right regulation and right models will drive the future E-commerce and M-commerce in India.

❖ Kush Dhingra, Abhishek Bhardwaj and Aashish Aggarawl (2015)

The article entitled “M-commerce”. This paper identifies the progress and future direction of M-commerce. M-commerce is the next generation of E-commerce which enables the user to access internet without need of a place plug in. The study found that, today mobile is not use for sending message or calling but it also used for other ways like web browsing etc. The study also found that, the technology used in M-commerce based on Wireless Application Protocol (WAP), M-commerce helps in improving relationship with customer.

❖ Dr. Sachin Gupta and Mr. Anand Vyas (2014)

The article entitled “Benefits and Drawbacks of M-Commerce in India: A review”. The purpose of this research paper is to identify factors affecting the adoption of M-Commerce and how M-Commerce is developing in India. The study found that, still there is lot of work, which is to be done for M-Commerce. Internet connectivity and mobile networking is still not accessible to entire population.

❖ **Khawar Hameed, Kamran Ahsan and Weijun Yang (2010)**

The article entitled “Mobile Commerce and Applications: An Exploratory Study and Review”. This paper presents a review of mobile commerce business models and their importance for the creation of mobile commerce solutions. The study found that, the strategic level focus and understanding of business models for mobile commerce enables adopters to focus on developing innovative value added solutions that exploit the commercial benefits of mobility.

VIII. TECHNOLOGIES USED FOR MOBILE COMMERCE

- ❖ **SMS (Short Message Service):** SMS which consists of 160 characters of black and white. It is the widely used and cheapest form of mobile marketing. Companies can send bulk messages and customers can also respond in the same form of order a product or service.
- ❖ **MMS (Multi media Message Service):** MMS consists of time slide show of images, text audio and video. Mobile set with color screen are capable of sending and receiving standard MMS message. Product demonstration use and other things can be done with help of MMS to convince customers to buy product or services.
- ❖ **Mobile Web Application:** Accessing web page on mobile is an option. Yahoo, Google and other mobile content providers have been selling advertising placement on their properties. Customer can access the products or services through the web pages of the companies through mobile phones or contents of other web pages and they can trade.
- ❖ **Wireless networks (Bluetooth/Wi Fi/Blue Casting):** A blue tooth message can be circulated within 10 meters range, retailers, mall owners and small business holders use this tool to sell their products to the customers who come to in the proximity of that area.
- ❖ **Location based marketing:** This helps to locate the customers location via global positioning system (GPS) technology and company delivers the contents offers relating to that particular location.
- ❖ **Voice:** Voice based marketing over the mobile is emerging form of marketing. Interactive voice response (IVR) is very popular and companies use to offer various services to their customers. A customer has to follow the instructions recorded on the system at the other end.
- ❖ **GSM (Global System for Mobile) Communication.**
- ❖ **HSCD (High speed circuit switched data).**
- ❖ **GPRS (General Packet Radio service).**

IX. SERVICES AND APPLICATIONS OF MOBILE COMMERCE

- ✚ **Mobile Ticketing:** Mobile Ticketing is the process where the customers can order, pay for, obtain and validate tickets from any location and at any time using Mobile Phones. Tickets can be booked and cancelled on the mobile device with the help of simple application downloads. Delivery of tickets to mobile phones can be done in the form of SMS or by MMS. Mobile ticketing is used in many applications like Airline ticketing, Cinema ticketing, Railway and Bus ticketing, Concert/ Event ticketing, Consumer voucher distribution.
- ✚ **Mobile ATM:** With the introduction of mobile money services for the unbanked, operators are now looking for efficient ways to roll out and manage distribution networks that can support cash-in and cash-out. Mobile ATM have been specially engineered to connect to mobile money platform and provide bank grade ATM quality.
- ✚ **Mobile Money Transfer:** Refers to payment services which are performed by using a mobile phone. By using this service we can transfer money from one person to other by using a mobile phone.
- ✚ **Mobile Content Purchase and Delivery:** Currently, mobile purchase and delivery mainly consists of the sale of ring tones, wallpapers and games for mobile phones. The convergence of mobile phones, portable audio players and video players into a single device is increasing the purchase and delivery of full length music tracks and video. The download speeds available with 4G networks make it possible to buy a movie on a mobile device in a couple of seconds.
- ✚ **Mobile Information and Extended Packaging 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, Stock quotes, Sports scores, Traffic reporting.
- ✚ **Mobile Banking:** Banks and other financial institutions use mobile commerce to allow their customers to access account information and make transactions such as purchasing stocks, remitting money, receive notifications, transfer money to other banks. Mobile Banking services are:
 - ★ Mini statements and checking of account history.
 - ★ Checking the balance and recent transactions.
 - ★ PIN provision, change of PIN and reminder over the internet.
 - ★ Cash in Cash out transactions on an ATM.

- ✦ **Mobile Brokerage:** Stock market services offered via mobile devices have also become more popular and are known as Mobile Brokerage. They allow the subscriber to react to market development in a timely fashion and introspective of their physical location.
- ✦ **Mobile Vouchers, Coupons Loyalty Cards:** Mobile ticketing technology can also be used for the distribution of vouchers, coupons and loyalty cards. These items are represented by a virtual token that is sent to the mobile phone. A customer presenting a mobile phone with one of these tokens at the point of sales receives the same benefits as if they had the traditional token. Stores may send coupons to customers using location based services to determine when the customer is nearby.
- ✦ **Mobile Browsing:** Using a mobile browser a World Wide Web browser on a mobile device customer can shop online without having to be at their personal customer.

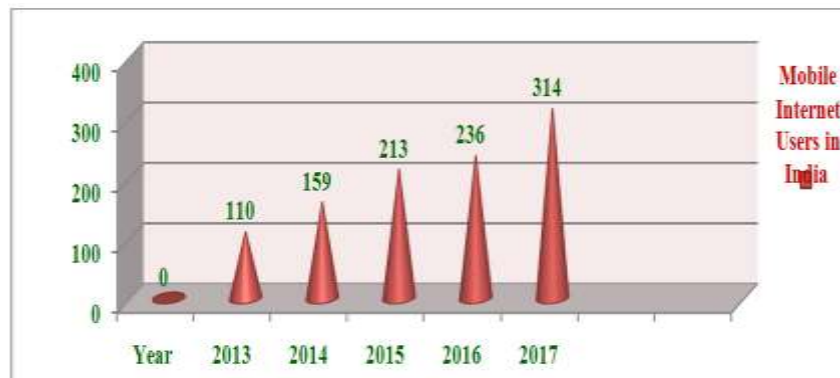
X. MOBILE INTERNET USERS IN INDIA

Table 1: Mobile Internet Users in India (Figures in Million)

Year	Mobile Internet Users In India
2013	110
2014	159
2015	213
2016	236
2017	314

Source: IAMAI

As the number of mobile internet users is increasing with each passing year, mobile users in India are becoming more data hungry. In 2015, the share of mobile internet spends in the average monthly bill rose to 64% from 54% in the previous year. However, this has a clear impact on the cost of accessing mobile data that fell about 18% in 2015. These changes can be attributed to the fact that with the improving mobile infrastructure and the availability of improved high speed 3G and 4G connectivity, people are shifting to apps and internet for most of their activities. The dependency on voice call has been reduced and people rather prefer the internet on their mobile phone to make more informed decisions.



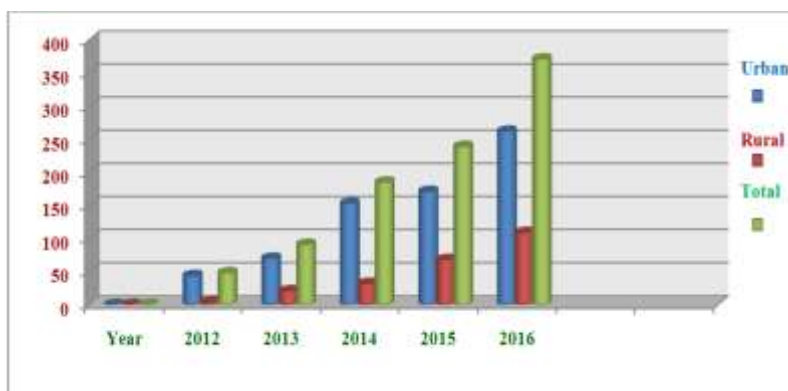
XI. MOBILE INTERNET USERS IN INDIA: URBAN VS RURAL

Table 2: Mobile Internet Users in India: Urban Vs Rural (Figures in Million)

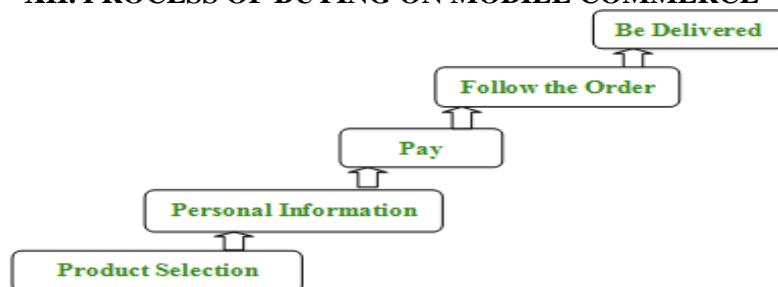
YEAR	URBAN	RURAL	TOTAL
2012	44	04	48
2013	70	21	91
2014	153	32	185
2015	171	68	239
2016	262	109	371

Source: IAMAI

Table 2 shows that, the exploded adoption of smart phones due to declining Average Selling Price (ASP) is resulting in an enormous surge in the number of mobile internet users in India. According to the latest report from IAMAI, titled mobile internet in India 2016, the country is estimated to have 371 million mobile internet users by 2016. 71% of the estimated 371 million mobile internet users in India will belong to urban area. However, the rural area still holds an enormous potential to drive the future growth of mobile internet in India. In 2015, the number of mobile internet users from rural area doubled from 2014 and in 2016 the growth percentage is estimated to outclass all the previous figures.



XII. PROCESS OF BUYING ON MOBILE COMMERCE



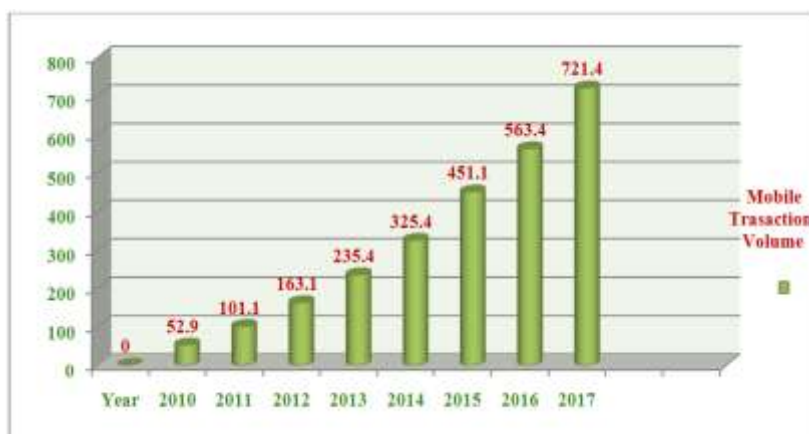
XIII. WORLDWIDE MOBILE TRANSACTIONS VOLUME

Table 3: Worldwide Mobile Transactions Volume (Figures in Billion Dollars)

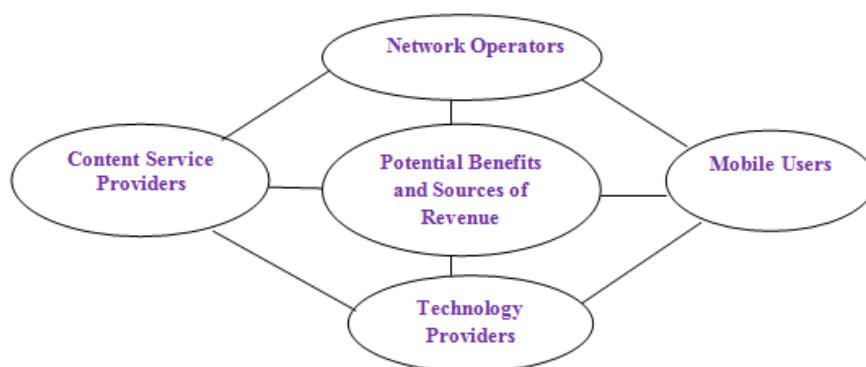
Year	Mobile Transaction Volume
2010	52.9
2011	101.1
2012	163.1
2013	235.4
2014	325.4
2015	451.1
2016	563.4
2017	721.4

Source: Worldwide Mobile Transactions Volume

Mobile devices are becoming a part of our daily routine life, people use internet for various purposes which include email, academic and financial information search, music and video on internet, chatting, online job search, booking tickets, hotel reservation, online news and online banking. The above table shows the global mobile transaction volume from 2010 to 2013 with a forecast for 2017. The worldwide mobile volume in 2012 was 163.1 billion US dollars and is expected to grow to 721.4 billion US dollars in 2017.



XIV. THE NEW BUSINESS MODEL OF MOBILE COMMERCE



As shown in figure Network operators, Content service providers, Mobile users, Technology Providers and potential benefits and sources of revenue comprise the essential structure and basis of interaction for the model.

XV. FINDINGS OF THE STUDY

1. Still there is a lot of work, which is to be done for Mobile Commerce.
2. Internet connectivity and mobile networking is still not accessible to entire population.
3. Mobile Commerce market grows in India because so many growth drivers are favorable in India such as changing youth's perception, introduction of trusteeship model, growth of financial area and numbers of smart phone buyers are increasing.
4. 71% of the estimated 371 million mobile internet users in India will belong to urban area. However, the rural area still holds an enormous potential to drive the future growth of mobile internet in India.
5. Mobile Commerce reduces the cost; provide information regarding goods and services.
6. With the help of this wireless technology all commerce activities has become very easy and there is no need of direct interaction between buyers and sellers.
7. In India our young youth mobile phone subscribers use their handsets for M-Commerce activities.
8. Mobile Commerce is gaining increasing acceptance amongst the various sections of the society. This growth can be partly traced back to technological and demographical developments that have been influencing important aspects of the socio-cultural behavior in today's world.

XVI. SUGGESTIONS

1. Indian government should take necessary steps to enhance these growth factors like building off infrastructure to internet connectivity, provide awareness and literate more people for English language and M-Commerce usage.
2. The government should take necessary action for improvement in affordability of mobile devices, mobile internet connectivity, mobile payments, security, low tariffs-high revenue, proper government policies.
3. For enhancing mobile commerce industry rules and regulations should be liberalized.
4. Government had to start campaigns for mobile commerce knowledge.
5. Companies need to integrate capabilities in both telecommunication and information system.
6. Mobile commerce need to develop synchronized value added content, synthesized business models that go together with emerging technologies, which can create key mobile features and serve as drivers of the growing market demand.

XVII. CONCLUSION

M-Commerce is adding significant value to the businesses in India. Key drivers of M-Commerce include widespread adoption of mobile phones and smart phones, rising affluent middle class consumers. These factors have increased the strength for M-Commerce in India; it has lead to newer opportunities for the businesses to grow. With the help of M-Commerce one can get the entire word knowledge on their smart phones, can access and manage bank accounts, save time. Mobile commerce is on growth track. It is gaining increasing acceptance amongst various sections of the society. This growth can be traced back to technological and demographical developments that have influenced important aspects of the socio cultural behavior in today's world. Future seems promising with new 3G technology and soon with advent of 4G technologies a positive change in the way of M-commerce is also on the cards. Mobile commerce is going to play a major role

in conducting business in future. With heated competition in the markets, emerging players, different marketing strategies and more customer awareness gives a boost to the mobile commerce growth. The future development of the telecommunication sector is heading more and more towards value added services. Researcher forecast that soon half of mobile operator's revenue will be earned through mobile commerce. Innovative service scenarios will be needed that meet the customer's expectations and business models that satisfy all stakeholders involved. M-commerce is such a technology which offers new business opportunity to enterprises and consumers within reach, even as barriers to its development fall away. Applications and wireless devices promise to evolve together, each driving the introduction of innovative and powerful features in the other.

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