



M-COMMERCE IN INDIA: EMERGING ISSUES

Dr. Sunil Batra*

Dr. Neenu Juneja*

Abstract: *This paper extends research on mobile commerce in India. It lists the issues being faced by the Indian M-commerce industry. Businesses and its strategies are ever changing with the advancement of time and technologies. Earlier, business strategies were based on limited geographical reach and scope for the growth. But because of rapid advancements in the Internet and communications technologies geographical boundaries are diminishing. M-commerce industry is young in India. 9% Indians are using smartphones for the purpose of rapidly consuming contents such as gaming, videos, songs and entertainment on their smart devices and this leads to steady growth in mobile advertising and apps industry. Indian m-commerce industry, however, is yet not developed enough for comparison to the m-Commerce market in the developed countries. Some of the reasons for a contrast is due to some political, social, economical and cultural factors, but rate at which growth is increasing it is expected that the growth would increase in times to come.*

Keywords: *M-commerce; Mobile Commerce; M-commerce barriers; Mobile Payments; Mobile Governance, M-commerce value chain; Mobile commerce applications; M-commerce applications; Mobile commerce growth drivers; Mobile commerce value chain.*

*Assistant Professor, Chandigarh Group of Colleges Landran. Mohali



INTRODUCTION:

From 1990s onwards E-commerce (electronic commerce) is adding higher values to all types of businesses and academics as well – as a result the users are changing the way business is carried out, people are moving from offline to online transactions. The latter modality is relatively easy, convenient and cheap. But advancement of wireless technology from 2000 onwards has changed and adding new values to business, benefits and conveniences for all its users. And this advanced technology is known as M-commerce or Mobile Commerce. In other words, m-commerce refers to the commerce that is carried out by using wireless devices. Mobile Commerce is the advanced version of e-commerce, mobile commerce, which not only includes all e-commerce transactions, but also provides greater flexibility and convenience to its subscribers. Both the telecommunications industry and the business world are starting to see m-commerce as a major focus for the future.

DEFINITIONS OF M-COMMERCE

"Mobile Commerce is the use of information technologies and communication technologies for the purpose of mobile integration of different value chains and business processes, and for the purpose of management of business relationships."

(Webagency)

"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."

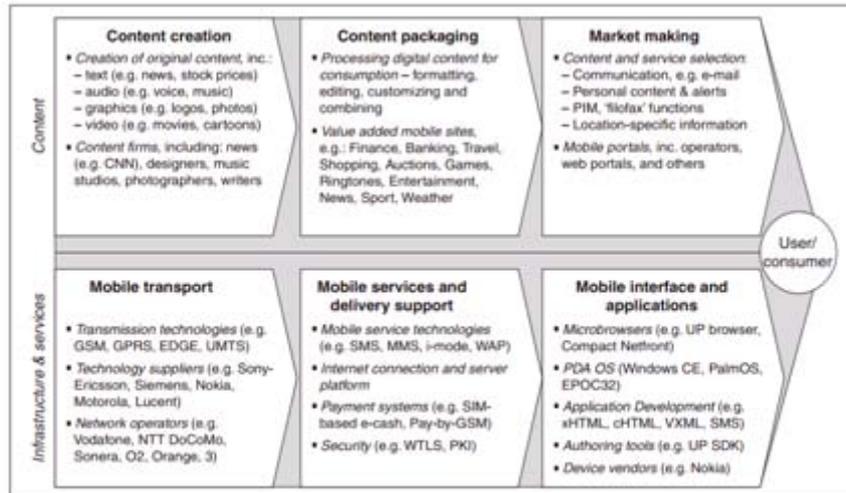
(Lehman Brothers)

"The core of mobile e-commerce is the use of a terminal (telephone, PDA, PC device, or custom terminal) and public mobile network (necessary but not sufficient) to access information and conduct transactions that result in the transfer of value in exchange for information, services or goods."

(Ovum)

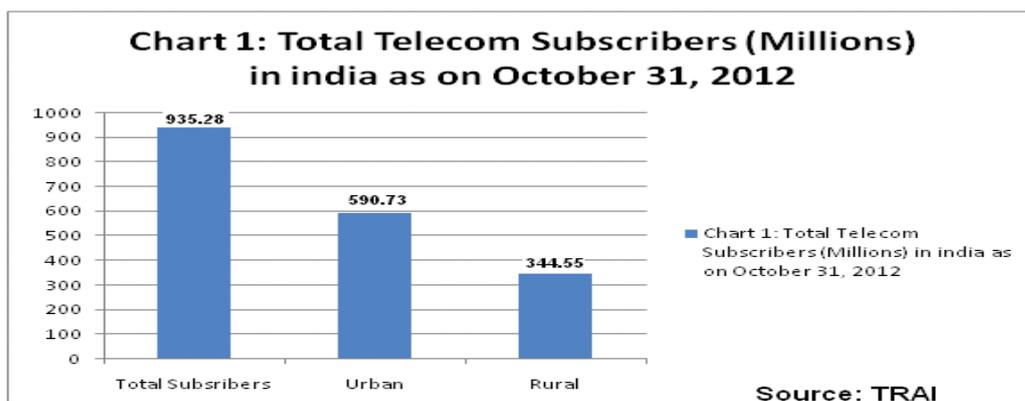
"The use of mobile handheld devices to communicate, interact via an always-on high-speed connection to the Internet."

(Forrester)



The m-commerce value chain (source: Barnes, 2002)

As depicted in the figure the M-Commerce valuechain includes content creation, content packaging, market making, mobile transport, mobile services and mobile interface and application those are used by the users to practice M-commerce. It is carried out using mobile phone devices, PDAs or other handheld devices. M-commerce applications have 2 major characteristics: broad reach and mobility. Mobility implies portability, for example, users can conduct their businesses in real time via mobile devices. With the help of M-commerce, people can be reached at any time via mobile devices. And by broad reach it means that the reach of M-commerce is more than e-commerce as for the use M-commerce, mobile devices are needed which are already widely spreading all over the world. Such is the extent of adoption of mobile phones that researchers have forecasted that by 2017 the number of mobiles on earth would exceed the population on earth.





A study by Telecom Regulatory Authority of India (TRAI), more than 935 million subscribers. As per Chart: 1, in India has the second largest number of mobile phone users in the world. And among these 935 million users there are approximately 18-20 million users who are using smartphones as shown in Chart: 2. Although this is a very small number, that is only 2%(approximately). But it is encouraging to note that the growth of smartphone industry in 2012 is 200% of that in 2011.

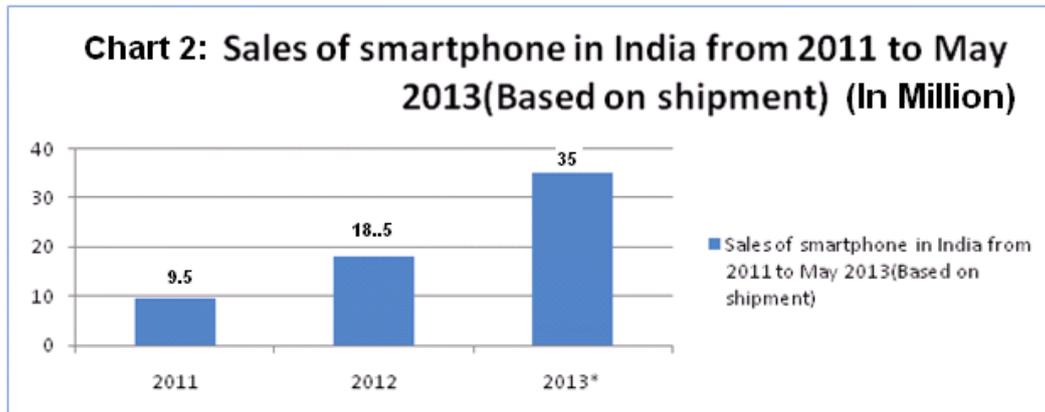


Table 1 Top Five Smartphone Markets and Market Share for 2011, 2012 and 2016 (Based on shipments)

Country	2011 Market Share	2012 Market Share	2016 Market Share	2011 – 2016 CAGR
PRC	18.3%	26.5%	23.0%	26.2%
USA	21.3%	17.8%	14.5%	11.6%
India	2.2%	2.5%	8.5%	57.5%
Brazil	1.8%	2.3%	4.4%	44.0%
United Kingdom	5.3%	4.5%	3.6%	11.5%
Rest of world	51.1%	46.4%	46.0%	18.1%
Total	100.0%	100.0%	100.0%	20.5%

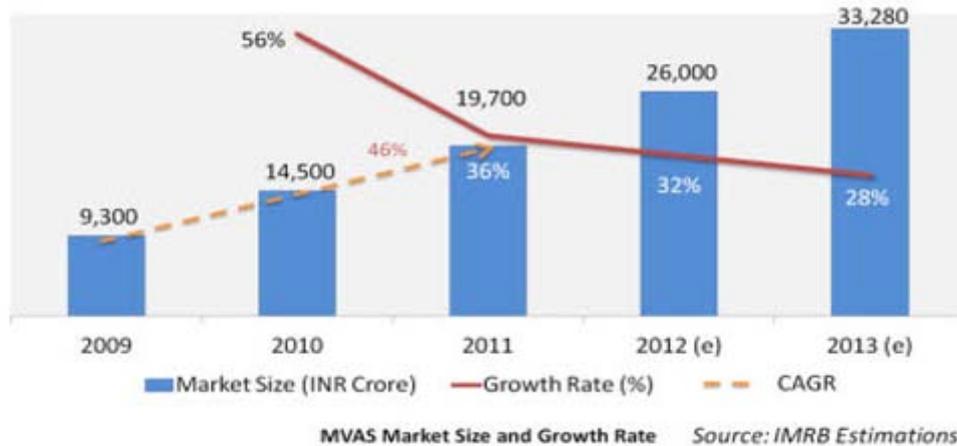
To provide mobile commerce to consumers/businesses three broad aspects work simultaneously, these are: wireless network infrastructure which includes networking requirements & wireless/mobile network, mobile middleware which includes agent technologies, database management wireless & mobile communication systems, wireless & mobile protocols and finally it is the mobile interface and mobile handheld devices.

All these aspects of m-commerce together provide flexibility, convenience, mobility, ease of use and low cost to the businesses as well as to customers. With the help of M-commerce many services like location based services, mobile advertisement, mobile entertainment



services, games, mobile financial applications, product locating and searching, wireless reengineering, travel, ticketing, Enterprise Resource Planning, entertainment, healthcare services etc.

Chart 3: Mobile VAS Size and Growth Rate



Although M-commerce market has displayed huge growth in recent years but there is a wide gap between technology capabilities and the consumer's expectations. M-commerce players need to improve the user interface soon and implement innovative pricing structures. Despite initial hiccups the users, consumers have envisioned that once the glitches are removed, mobile applications will become an integral part of business as well. But investing in m-commerce has its own risks. While there is potential for a lot of money to be made, there is also potential to lose as well. Organizational and system changes in a business to allow for M-Commerce can be huge, and that means a lot of extra cost. Getting high return on investment can take a long time, and businesses aren't always prepared to stay afloat until they recoup that money. A consumer who uses a device for M-commerce needs to feel secure. Because customers have to provide personal and financial information, hence the reliability and security of the systems must be high.

GROWTH DRIVERS OF M-COMMERCE:

M-commerce is characterized by some special features that generate certain advantages viz-a-viz conventional forms of commercial transactions or as compare to electronic commerce.



Instant connectivity: Ever since the introduction of the GPRS (General Packet Radio Service) mobile devices are offering consistent connectivity and services, which help people to remain always connected with others. This feature brings convenience to the consumers.

Personalization Factor: Since mobile devices are often used by an individual, they are ideal for personal information. Mobile technology provides the benefits to personalize messages to various segment group, based upon time and location etc. For the M-commerce's success mobile databases have become a primary factor by providing personalized services and compiling personalized information.

Mobility factor: Users can easily carry smart phones or mobile devices with them. So any consumer who wants to do monetary transactions need not to go for any cyber to use e-commerce but he/she can perform transactions from anywhere.

Immediacy: Immediacy is the possibility of real-time of services (the "anytime" feature). This feature is significant for some services that need time critical and a quick reaction. For example in the case of stock market a broker need a real time data in a very fast manner.

Localization: The latest positioning technologies, such as the GPS (Global Positioning System), allow companies to offer services and goods to the user based on the current location of the customers. So the location based services meets the consumer's requirement and localized content and services.

Broad reach ability/Ubiquitous computing: Mobile devices or smart phones provide instant connectivity to the users and its reach ability is also very high as compared to other traditional commerce or e-commerce methods.

Ubiquity: Ubiquity means that the user can use services and carry out online transactions independent of his current geographic location. And with the help of this feature a user can use many services such as he/she can check the price of a product online while shopping in a supermarket.

Reach factor: Due to the unprecedented growth in mobile phone sector from the last past 5 years, mobile phones have penetrated deep into the population. And this penetration level is much higher than other areas such as wire line phones, cable television, bank accounts, Internet, PCs, etc. Mobile networks cover rural areas where there are lack of other facilities such as bank branches, landline phones, internet etc.



Cheap 3G services: In the coming few months it is expected that the 3G networks and services expected to be rolled out in India. And with this the user experience for the use of data services over smartphones is expected to improve significantly.

Table 2 Top Five Smartphone Markets and Market Share for 2011, 2012 and 2016 (Based on shipments)

Country	2011 Market Share	2012 Market Share	2016 Market Share	2011 – 2016 CAGR
PRC	18.3%	26.5%	23.0%	26.2%
USA	21.3%	17.8%	14.5%	11.6%
India	2.2%	2.5%	8.5%	57.5%
Brazil	1.8%	2.3%	4.4%	44.0%
United Kingdom	5.3%	4.5%	3.6%	11.5%
Rest of world	51.1%	46.4%	46.0%	18.1%
Total	100.0%	100.0%	100.0%	20.5%

Cheap and Smart handsets: From the last few years the smartphone industry has given a lot to the customers, not only in-terms of latest handsets, even smart handsets on a cheaper and reasonable price. With the advancement and competition in this industry all companies are trying to give latest technology to

MOBILE COMMERCE APPLICATIONS:

Entertainment: Entertainment on smart phone devices has played an important role in development not only for entertainment industry but also for M-commerce industry, mobile application development industry, mobile hardware industry and many more industries which are directly or indirectly connected with entertainment. Entertainment applications have captured a major share in mobile commerce market and in future this may become the dominated part of mobile commerce. Today it is one of the popular applications for the younger generation. M-commerce has made it possible for us to download images, video, audio and games, data files at anywhere and anytime. On-line games and gambling has become much easier to access and play using latest mobile commerce applications.

Education: These days education is also available on smartphones. One can access lot of contents while traveling or sitting on somewhere where online contents cannot be accessible through internet. Many of the online journals has their dedicated application



which may help a student or reader to access the contents anywhere. For example Science Direct Journal, The DU Waterfowler's Journal, The American Diabetes Association's "ADA Journals", The Wall Street Journal, The Journal of Digital Imaging etc. are some of the well known journals and these journals have a dedicated application for various smart phones platforms.

Travel and Ticketing: Ticketing has become easy these days. Be it for railways, road or air traveling, all are providing facilities for m-ticketing. Indian Railways has been launched official mobile application which helps consumers to check train schedule, timing, booking etc on their mobile phones. Many road transport companies are also providing latest mobile apps to give facility for the customers to book their tickets online. Almost all airline companies have their mobile applications for various mobile platforms to provide facility to their customers.



E-auction: E-auction is an electronic implementation of the bidding mechanism. It provides the benefits for suppliers and buyers and also increases efficiency and time-savings for both, there is no need for physical transportation until and unless the deal has been established by the supplier and buyer.

M-Shopping: After the success of online shopping on internet, online shopping companies are focusing on mobile shopping as now days this is another booming sector. User wants to spend more time on mobile phone than computer these days so preferably a consumer searches for products and services using mobile phones. As per Nielsen, mobile shopping is increasing 10% to 15% each year and is adding a huge contribution to commerce. And from October 2009 to Jan 2012, 38% growth has been recorded.



Traffic Control: Traffic is the movement of pedestrians or vehicles through an area or route. The passengers in the vehicles and the pedestrians are all mobile objects, ideal clients of mobile commerce. With the help of technology, mobile commerce can improve the problems related to the traffic jam in many ways. For example, usually all smartphones have capabilities of a GPS, these can be used in determining the driver's exact position, and can be used for giving directions, and advising the driver on the current status of traffic in that area. A traffic control center can also control and monitor the traffic according to the traffic signals which are sent from mobile devices in the vehicles.

M-COMMERCE ISSUES:

Mobile commerce growth in India is about 2%. But this growth factor can be high if appropriate policies and other factors come in favor for mobile commerce growth. Mobile commerce is facing many challenges such as security issues, lack of ubiquitous wireless network coverage, lack of standards, and technical mismatches among various wireless devices & smartphones. Furthermore, there are many other issues that indirectly have a huge impact on this industry. These include high cost of smartphones; slow access speed etc creates hurdles in the growth of mobile commerce industry. Main mobile commerce challenges include:

Data Transmission Rate:

The major growth factor that makes mobile commerce successful is the data transmission bandwidth, which is as compared to other countries is very limited. Due to this factor even with the latest hardware one cannot access web contents faster. With 3G data transfer at 14.5 mbps can be attained, but the charges for such services are high.



Wireless Internet Infrastructure:

Wireless internet infrastructure is not sufficient to provide the path the mobile industries for their growth and success. Government is yet to provide such sufficient infrastructure for the growth of wireless industry without such support mobile commerce market could become severely crippled.

Security:

The main issue revolved around mobile commerce is security. Users worry that their devices could be hacked or attacked by some kind of viruses. Usually it came to the notice that while having mobile transactions user lost their money and to avoid such problems users avoid of using such mobile commerce related services.

Privacy:

Privacy is another issue related to the growth of m-commerce. For all kind of monetary transactions or other services one need to disclose his identity which many a times creates a huge problem for the customer. Hackers hack the security of wireless transmission and obtain all the information related to the customer, which may be related to the social or financial matter of a customer. GPS[Global Positioning System], on the one side giving benefits to the user by telling the directions and one can get the benefit during an emergency but in the other side a user is also send his location which may be used by someone else to track the current location of the user.

CONCLUSION:

The research reflects that M-commerce is adding significant value to the businesses in India. Key drivers of M-commerce include widespread adoption of mobile phones and smartphones, rising affluent middle class consumers. These factors have increased the appetite for M-Commerce in India it has lead to newer opportunities for the businesses to grow and for the M-consumers to obtain benefits in terms of convenience, freedom and speed of work. . With the help of mobile commerce one can get the entire world knowledge on their smartphones, can access & manage their bank accounts, save time, avoid parking problem without going to bank; Entertainment, health care, education, traffic problems, ERP, inventory tracking & dispatching, traveling and ticketing are some of the area where mobile commerce is giving so many benefits in our lives. It is worth mentioning that M-commerce is facing teething problems and some of these are based on technical, regulatory,



social and political issues. In times to come, the M-commerce is expected to become more secure as government and companies alike are investing on security etc to provide better services to safeguard interests of users of M-commerce.

Future seems promising with new 3G technology and soon with the advent of 4G technologies; a positive change in the way of m-commerce is also on the cards.

BIBLIOGRAPHY

1. A meta-analysis of mobile commerce adoption and the moderating effect of culture 2012 *Computers in Human Behavior* 2851902-1911
2. A review for mobile commerce research and applications 2007 *Decision Support System* 3-15
3. An innovative electronic group-buying system for mobile commerce 2013 *Electronic Commerce Research and Applications* 1-13
4. Consumer-based m-commerce: exploring consumer perception of 2005 *Computer Standards & Interfaces* 271347–357
5. Determinants of Consumer Perceptions toward Mobile Advertising 2012 *Journal of Interactive Marketing* 26121-32
6. Determining the mobile commerce user requirements using an analytic approach 2009 *Computer Standards & Interfaces* 144-152
7. Evaluation of mobile services and substantial adoption factors with Analytic Hierarchy Process (AHP) *Telecommunications Policy* In press
8. Exploring convenience in mobile commerce: Moderating effects of gender *Computers in Human Behavior* In press
9. Factors influencing the adoption of M-commerce: An exploratory Analysis 2011 *International Conference on Industrial Engineering and Operations Management* Kuala Lumpur, Malaysia
10. From electronic to mobile commerce *TECH MONITOR* 38-45
11. FROM ELECTRONIC TO MOBILE COMMERCE: TECHNOLOGY CONVERGENCE ENABLES INNOVATIVE BUSINESS SERVICES 2008 1-19
12. Increasing trust in mobile commerce through design aesthetics *Computers in Human Behavior* 673–684
13. Key success factors for mobile platforms using the value grid model 2012 *Journal of Business Research* 6591335–1345



14. MOBILE COMMERCE BEYOND ELECTRONIC COMMERCE: ISSUE AND CHALLENGES *Asian Journal of Business and Management Sciences* 12119-129
15. *Mobile Commerce market in India*
16. Mobile commerce product recommendations based on hybrid multiple channels *Electronic Commerce Research and Applications* 94-104
17. Mobile Electronic Commerce: Emerging Issues 2000 *1st International Conference on E-Commerce and Web Technologies* 477-486 London Springer
18. Mobile marketing research: The-state-of-the-art 2010 *International Journal of Information Management* 302144-151
19. Mobile-banking adoption by Iranian bank clients *Telematics and Informatics* In press
20. Predicting consumer decisions to adopt mobile commerce: Cross country empirical examination between China and Malaysia 2012 *Decision Support Systems* 134-43
21. Predicting m-commerce adoption determinants: A neural network approach *Expert Systems with Applications* 523-530
22. *Research and markets* 2012
23. Security Issues in M-Commerce: A Usage-Based 264-282
24. Technological regimes in m-commerce: Convergence as a barrier to diffusion and entrepreneurship? 2009 *Telecommunications Policy* 19-28
25. The conceptualization and measurement of m-commerce user satisfaction 2007 *Computers in Human Behavior* 381-398
26. The effects of location personalization on individuals' intention to use mobile services 2012 *Decision Support Systems* 534802-812
27. 2012 *The Indian Telecom Services Performance Indicators* Telecom Regulatory Authority of India New Delhi Mahanagar Doorsanchar Bhawan, Jawahar Lal Nehru Marg, New Delhi-110002
28. The market for wireless electricity: The case of India 2010 *Energy Policy* 3831537-1547
29. Towards a Reference Model for M-Commerce Applications 2004 1-14
30. Trading privacy with incentives in mobile commerce: A game theoretic approach *Pervasive and Mobile Computing*
31. Unique Features of Mobile Commerce Tokyo Tokyo Japan