Transformation from E-commerce to M-commerce in Indian Context

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Abstract

Electronic commerce and mobile commerce are not only frontier for doing global business and trade but also offers multiple benefits to the business, government and consumers on massive scale. Many companies, organizations, and communities in India are doing business using E-commerce and also are adopting M-commerce for doing business. But still E-commerce is not ubiquitous and pervasive and M-commerce is at nascent stage in India. The tremendous growth in mobile phone penetration shows that major Indian population has adopted to mobile phone and advancement in mobile technology and its usage is not limited for making basic phone calls, but can be used virtually in every sector of human activity—private, business, and government.

In this paper researchers attempted to answer the research question that `Is India moving from E-commerce to M-commerce? For this study information is collected from TRAI, RBI guidelines available online and different websites, opinion given by top management of online companies, blogs and The Economic Times articles. In this study researchers identified the potential of E-commerce and M- commerce by reviewing its current status in India and considering the online users and their usage behavior. Through this paper, researchers attempt to identify the issues for the future growth of E-commerce and M-commerce with its present volume transactions in India and highlighted critical challenges before E-commerce and M-commerce would become an asset for common people. Researchers observed that customized and innovative services, right regulation and right models will drive the future E-commerce and M-commerce and it will occupy large segment in Indian market.

This paper evaluates the position of E-commerce and M-commerce in India which will be further helpful to 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.

1. Introduction

E-commerce, stands for electronic commerce, on the internet, it pertains to a website, which sells products or services directly from the site using a shopping cart or shopping basket system and allows payments through cards, e-banking, cash on delivery. Customers can purchase anything right from a Insurance Policy to pen o sitting comfortably in their office or home and gift it to someone sitting miles apart just by click of a mouse. It offers several benefits to businesses like easily reaching to a fast growing online community, providing unlimited shelf place for products and services, merging the global geographical and time zone boundaries and helping to reach national and global markets at low operating costs. Ease of internet access and navigation are the critical factors that will result in rapid adoption of E-commerce. Safe and secure payment modes are essential to popularize E-commerce in India. Though it offers many benefits to users, there are many reasons for not shopping online like are lack of trust, security concerns, uncertainty about product and service quality, delay or non-delivery of goods, and lack of touch-and-feel shopping experience [1][3][7][5][9].

Mobile Commerce (M-commerce) is the subset of electronic-commerce (e-commerce), which includes all e-commerce transactions, carried out using a mobile (hand held) device. M-commerce is the way of doing business in a state of motion [5][6][9]. M-commerce

depends on the availability of mobile connectivity. We have become used to making mobile phone calls anywhere, at any time and m-commerce is build on that capability. According to IT experts, in the future, consumers will be able to shop using a handheld computing device, PDA, wearable computer, mobile phone or smart devices. In virtually any place – malls, restaurants, hotels, airports and other locations – this user will be able to receive coupons, download information, receive sales offers, and perform credit card transactions. In such future scenarios, M-commerce means that customers can shop anywhere, anytime [29]. M-commerce offers multiple advantages like Ubiquity, personalization, flexibility, and distribution, instant connectivity, immediacy. There are many ways in which business, government and citizens of India could benefit from M-commerce like

1. Selling a product or service which is information based(delivery directly to mobile devices) or location based
2. Improving productivity by gathering time critical information(reports, photographs) and SMS based up-to-date information
3. The ability to access information on mobile, at affordable cost can change people's lives and livelihoods in rural areas. (Latest on the weather report or health services). It can be used as the medium to educate and create awareness among the rural people. Usages of Internet on mobile devices have lead to information access overcoming geographical barriers and removed the training cost of mobile technology.

2. Challenges of E-commerce and M-commerce in India

There has been tremendous growth in E-commerce and wireless technology in last decades. This has changed how people do the business with technology environment. For creating flexile and secure E-commerce and m-commerce in we need to leverage new technologies with old technologies and social and financial and technology development. The technology development issues that remained to be solved like extending handset battery life, increasing small screen usability, Less Powerful Processors and improving chip integration. M-commerce is a subset of E-commerce; it also faces some of the challenges of E-commerce like India has unbanked population, less credit card population, lack of fast postal services in rural India. The challenges of M-commerce in India are listed as below

1. Accessing the Internet by mobile phones is currently hindered down by slow transmission speeds, frequent disconnects, cost of Wireless connection

and wireless communication standards over which data is transmitted.
2. High-speed-bandwidth Internet connection not available to most citizens of the nation at an affordable rate.
3. Payment system that connects the utility of the mobile phone and the Internet together for the whole nation.
4. Limited Internet access among customers, lack of awareness about services and security among customers.
5. Lack of penetration of advance mobile device in rural area.[ss]
6. Multiple issues of trust in m-commerce technology, doubts about m-commerce security, and lack of widely accepted standards and lack of payment gateways (privacy of personal and business data connected over the Internet not assured; security and confidentiality of data not in place)
7. To deploy Ubiquitous IT Infrastructure and its maintenance: IT infrastructure can be defined as physical components such as hardware, software and network facility plus human components such as human expertise, manuals, and corporate culture constitute IT infrastructure of an organization. [4] [14] [15].

3. Status of E-commerce and M-commerce in India

Today E-commerce has become an integral part of our daily life. People use internet for various purposes which include: email, academic and financial information search, music and video on internet, chatting, online job search, gaming, booking railway/airline tickets, hotel reservation online news, internet telephony/video chat/voice chat, and online banking. E-commerce has touched the every field of human life from information search to entertainment, job search to matrimonial sites.

3.1 Online users and their usage behavior of E-commerce

India has witnessed an increase in the number of internet users. In India, the youth drive internet usage. School and college going students along with young men contribute to 72% of internet activity [11]. According to a report, jointly prepared by the Indian Council for Research on International Economic Relations (ICRIER), The Internet and Mobile Association of India (IAMAI) and the Department of IT India : Impact of Internet, a 10% increase in internet penetration can increase the GDP (gross domestic product) by 1.08 per cent. This will help the country add $17 billion annually.

Research studies have indicated several factors responsible for the sudden growth of E-commerce in India such as:

1. It is predicted that by year 2015, around 65% of Indian population will be in the age group of 15-35 years. Since youth is an early adaptor of all technology, this seems to be a positive factor for the Indian E-commerce market.

2. India has an added advantage of lowest broadband prices by the organizations like BSNL. This enhances the potential of online transactions.

3. India has already started the efforts to provide biometric identity with unique identification number to all its citizens. Having this unique identity in place, and guidelines given by RBI for online transactions would make online financial transactions much safer as they can be easily tracked and subject to law [12].

4. Technology advancements such as VOIP have bridged the gap between buyers and sellers online. [33]

5. The emergence of blogs can be considered as an avenue for information dissemination and two-way communication for online retailers and E-commerce vendors.

6. Internet penetration is only about 10% (or about 121 million users) as against about 81% in the US and 36% in China. However this number continues to rise at a consistent pace because of falling prices for broadband connections. [32]

7. Innovation in e-commerce business models like no question asked return policies ranging from 7 days to 30 days, free product deliveries, the industry dynamics changing "cash on delivery" and product compare model offers benefits to customers than traditionally store [32]

8. Some companies have begun to develop support mechanisms for the entire cash on delivery model and are trying to reach at corners of India, including in the interiors where traditional logistics companies are still not completely present. The logistics companies are also shoring up their act and have started to build specific verticals and expertise to address the requirements of e-commerce companies[32]

9. Experts say that over the next 12-18 months there would be a couple of multi-product generalists who would be successful along with a leader in single product category.[32]

10. Secure online shopping model helped to increase e-commerce uptake. Currently only about 10 million people do online transactions out of an approximate population of 200 million credit and debit card holders. However the latest industry report by First Data Corporation and ICICI Merchant Services indicate that there are about 150 million users that are 'ready' for e-commerce. [32]

11. More importantly the report indicates that urban Indian consumers are now confident enough to make online purchases of up to US$500 as against US$40-100 in the recent past. So not only are the numbers of online shoppers projected to increase but there has been a real increase in the total value being spent online. [32]

12. According to CISCO report article in The Economics times, India will have highest traffic growth rate with 44% CAGR from 2012 to 2017 followed by Indonesia and South Africa. Monthly movement for fixed and mobile data is expected to reach about 121 Exabyte by 2017, from 44 Exabyte in 2012.

13. Improved fraud prevention and detection technologies have offered a safe and secure business environment and helped in preventing credit card frauds, identity thefts and phishing.

14. Consumers in cities are fast realizing the potential of the internet as a medium of transactions.

15. The young population finds online transactions much easier and safer [3].

3.2 The status of mobile users and usage in India

A vast segment of the population that neither had a landline nor a bank account (unbanked) in their names but now not only they own a mobile handset but are also well balanced to transact on their mobile. The mobile channel has provided a rare opportunity not only to leapfrog years of poor infrastructure development but also in bypassing geographical constraints to bring massive benefits and lifestyle changes to millions of under-served people across India. India is a land of many languages but only 2 percent of the Indian population prefers reading in English. If the content is in local language, it will not only ensure quicker adoption by the user but also will be an instant success. Further, content developers are tempted to look at India as one market, and there are more players to share the pie. These apart, there exists the regional markets and a huge B2B market for m-commerce in India as well [4]. The status of mobile users and usage in India is as follows.

- There are currently about 867.80 million mobile subscribers with monthly growth 0.71% and this number is expected to touch 1.2 billion by 2015 according to the press release of TRAI, dated 29th May 2013, the country can easily expect M-commerce to take off faster than online or e-commerce and rising India as the world's second largest mobile market after China.

- Total Broadband subscription reached 15.05 million in March 2013 from 15.00 million in February 2013. [31]

- Actively mobile Internet users are fairly young (18-35 years) and 81% percent users are using these devices as part of their daily routine - for sending emails, getting news and information, and shopping. More than half (61 percent) expect these devices to become universal payment tools.[4]

- Indians are also increasingly taking to mobile devices for not only search but shopping as well. The number of Smartphone users is rapidly increasing in India and with 4G services about to take off it's expected to get even more people going online. 27 million mobile users are active mobile internet users. More importantly, 20% users indicated intent to buy products through their mobile phones as against the current 4% and this number is expected to only increase in the next two to three years. [32]

- TechNavio's analysts forecast the Mobile Commerce market in India to grow at a CAGR of 71.06 percent over the period 2012-2016 and key factors contributing to this market growth is the growth in mobile subscriptions, government and regulatory support. However, the data security concerns of end-users could pose a challenge to the growth of this market.[34]

- This rise has resulted from introduction of voting based participative TV Programs, voting on some socio-economic-political issues in Newspapers; SMS based quiz/contests on mobile, MMS etc.[4] [11] [12].

This data shows that basic infrastructure required for Mobile communication has been built already. But there is a need for a major enhancement in ensuring the deployment of mobile Internet infrastructure for mobile commerce at affordable cost and desirable quality which can make infrastructure ubiquitous. Business can take the advantages of connected customers, can build brand digitally.

4.2 Emerging Services of M-commerce in India

- Increased mobile penetration and use of GPRS on handsets has resulted in the digital downloads market to cross Rs.2.55 Billion by end of March 2008.

- Monetary transfers or transactions through mobile phones are found to be much cheaper than traditional bank transfers as the transaction costs are much lower in the former.

- Innovative solutions for daily use such as payment of auto or taxi fares.

- Inter-bank transfers services are also on the anvil. ICICI Bank Ltd, India's largest private bank, has already started offering all its services through mobile phones (called mobile banking) since January 2008. Standard Chartered bank has launched a service that enables money transfer from any ATM to any mobile phone across the country. The recipient receives a pin number on his or her mobile phone and the sender has to convey the order number to the recipient. Using these two the recipient can withdraw money from the bank's ATM's.

- Feasibility studies are being conducted to offer M-commerce to microfinance firms to enable them collect payments from remote areas [24].

4. Future of E-commerce and M-commerce in India

India is the seventh-largest by geographical area, the second most populous country in the world and third largest reservoir of technical human resource with fastest growing free market economy. Indian government has accepted free market policies in 1991, and globalization has increased trade and investments in Indian market. Indian E-commerce and M-commerce percentage is getting higher as more and more online retailers enter the market.[33]

4.1 E-Commerce Future Growth

The last few years have seen a rise in the number of companies' embracing E-commerce technologies and the Internet in India. Early E-commerce sites have been targeted towards the NRI's with Gift delivery services, books, Audio and videocassettes etc. but today E-commerce sites are available for every field of life with diverse products. People in smaller towns in India can access quality products and services similar to what people in the larger cities have access with the help of e-commerce sites. The growth of Indian e-commerce sector is US$1.8 billion in 2012 and expected to reach 8.8 billion US $ as per Forrester Research's projections for Asia-Pacific e-commerce sales by country and also notes e-commerce's rapid growth in India, where sales are forecast to grow 57% annually through 2016. Future of India`s capital E-commerce market is as shown in table1

Table1: E-commerce market in India

Online Details	DEC 2012	DEC2016E	CAGR
Internet users	140 millions	390 millions	29%
Conversion to shoppers	9%	12%	NA
Online Shoppers	13 millions	47 millions	38%
Online shopping Market	$809 million	$3.62 billion	65%

E – Estimated
CAGR- Compound Annual Growth Rate
Source : The Economics Times dated Wednesday 10April2013.

As Indian E-commerce industry is growing, e-payments are increasing accessibility and proving convenience for customers as people are paying utilities, bills, tickets, travel, entertainment online instead of standing long queues. The driving forces for this are RBI policies for

secure online transactions with additional security code and 286 millions debit card penetration which is one fourth of population. The enhanced security and incentives, discounts, bonus points, cash back, preferential pricing provided by banks and merchants, can further enhance (add fuel) in E-commerce transactions.

Major Indian portal sites have also shifted towards E-commerce instead of depending on advertising revenue. The web communities built around these portal sites with content have been effectively targeted to sell everything from event and movie tickets, the grocery and computers. Most of the banks like ICICI bank, Global trust bank and UTI bank also have put their electronic banking over the internet facilities in place for the upcoming E-commerce market and the speed post and courier system has also improved tremendously in recent years with online package status at any moment in time. The future does look very bright for E-commerce in India with even the stock exchanges providing an online stock portfolio and status with a fifteen minute delay in prices [3][8][10].

Due to mobile and internet penetration and always on devices, rural customer is no longer rural customer like before, and lots of money is coming from government funding, income and transfer of funds, can open new market base for industries with wide range of challenges and frontiers. As knowledge and idea sharing increases, it shorten the product life cycle and rate of innovation is accelerated, and those can become asset for business.[ec] If people in India are made more aware, assurance of safe, convenient transactions, and help to save money will accelerate cash less economy and will benefit to merchants, consumers, overall economy of country.

B. M-Commerce Future Growth

Currently M-commerce in India is offering exciting and renewed services to the existing mobile users like pocket finder of Aircell, SMS based home appliances handling (ONIDA AC, FM), Projector within the mobile device. Social networking sites like Facebook, twitter are also available on mobile. But it has been limited primarily to basic banking transactions, purchase of travel tickets and payment of some utility bills, is finally taking off with banks, cellular operators and payment service providers coming together to find solutions that comply with regulatory guidelines. Security, a prime concern with banking regulators, has been an obstacle to the growth of M-commerce services such as the so-called mobile wallet, which helps make payments at retail outlets through text messages or Internet-enabled phones.

The Reserve Bank of India had issued guidelines against creation of the mobile wallet, a derivative of a phone firm's master bank account, from which millions of subscribers can be served on their mobile phones.

Californian mobile payment service provider Obopay Inc. and Bangalore's mChek India Payment Systems Pvt. Ltd are among a fast-expanding breed of mobile payment service providers which have planned offerings that work within the guidelines and bring the convenience of mobile transactions. Banks in India like ICICI Bank Ltd, SBI, Standard Chartered Bank have already started its Internet banking service on mobile phones. Bharti Telesoft Ltd provides software products and solutions to mobile operators, providing solutions for microfinance operations, especially in data collection work [26]. Data shows that currently products and services are merging as a result of cheap processing and widespread networking, and technologies are changing everything from our relationships to everyday objects. This has also changed the market trends and shopping decisions also. [33]

KPMG's study shows that consumers in India and China are leading the drive for personal banking and retail transactions via their mobiles. While unveiling the findings of the report, that 3G, 4G and BWA(Broadband Wireless Association) will further fuel the growth m-commerce in India as 3G, WiMax and the like that could support multimedia data delivery & these technologies should be able to ensure constant broadband speeds and seamless connectivity. Many service providers in India like BSNL, Airtel, Reliance, Tata Docomo, vodaphone are offering wireless 3G. The KPMG study has also revealed that in spite of the humongous growth of mobile telephony in India, more than half of mobile users did not wish to give up their landline. The reasons being, users felt landlines are more reliable than mobiles and it was the primary source for Internet access. This shows that in future E-commerce and M-commerce will occupy major share in Indian Market [25].

5. Conclusions

The potential of E-commerce is no more a matter of debate and India realizes the importance, as this is an emerging practice of businesses in today's world. The steps taken by RBI to improve E-commerce transactions and the data of online user and usage showed that India is adopting the E-commerce but it is not ubiquitous and pervasive due inability to leverage mobile and electronic commerce advances. Mobile penetration in India is very large but the M-commerce industry in India is in its nascent stage and is evolving every passing day. Data shows that many companies are coming forward in this field to offer new services. The huge unbanked population, the lack of credit-debit card penetration, higher charges on credit–debit usages and some barriers like lack of user trust and awareness in e-commerce and m-commerce technology, doubts about security and lack of widely accepted standards can little hinder the growth of m-commerce in India. But the worldwide acceptance and use of standards such as Japan's I-mode and

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Europe's WAP, in combination with the work performed by market-based competition, collaboration of key-players, and regulations imposed by regulation authorities, securities in online payments are expected to boost consumer trust in M-commerce and strengthen its potential and perspectives. India has third largest reservoir of technical human resource, but it is not for medium of commerce for mass people, new models need to be developed and worked out with appropriate strategies to make electronic commerce and M-commerce as key policy for the development and progress in India. This current state will be further helpful to develop the new generation E-commerce i.e. mobile commerce for mass in India.

With the explosion of internet connectivity through mobile devices like Smartphone and tablets, millions of consumers are making decisions online and in this way enterprises can build the brand digitally and enhance productivity but government policies must ensure the cost effective methods/solutions. The advancements in technologies and innovative services shows that India is moving from E-commerce to M-commerce, and in future E-commerce and M-commerce will became asset for commerce by the people to the people in India.

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