Mobile Commerce is the subset of E-commerce, which includes all ecommerce transactions, carried out using a mobile (hand held) device. This paper deals with the relevance and potential role that M-Commerce can play in the development of E-commerce. It is also increasing day by day Therefore, mobile commerce has very vital role in modern business. In the today's technology world, we can say that, without mobile, we could not live comfortably. Similarly, in business, without mobile commerce, it is impossible to survive in the competitive commerce world.

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. Therefore, the research work undertaken titled as "M-commerce: The next generation of E-commerce"

Keywords – M-Commerce, E-Commerce, Internet, Smartphone

Introduction

Today, in India, there are more than 86 cores mobile users available. By Niveza Research Desk 18th February, 2015 “Increased internet penetration with surge in use of mobile phones have made India fastest growing e commerce markets in the world.” India has third largest internet users in the world with about 245 million users. The rapid surge in the mobile devices across the country has supported internet user penetration in tier II & tier – II cities together with rural areas of the country. This has enables people to explore and get exposed to e commerce opportunities Market size and growth Mobile Commerce is known as M-Commerce. M-Commerce are used to buy and sell goods by using the wireless devices like cell phones, personal digital assistants and other handheld devices that have operated with Internet access. By using m-commerce we can access advanced mobile applications and highspeed services and we can use this devices remotely,
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. Therefore, the research work undertaken titled as “M-commerce is the next generation of E-commerce

Objectives Of The Study
1) To analyze the services offered by M-commerce

3) To review the payment process of M-Commerce

3) To evaluate the relationship between E-Commerce and M-Commerce

4) To understand the tools or techniques of M-Commerce

Hypotheses

1) M-Commerce offers the services to different sector

2) Multi forms for Payment of M-Commerce

3) Tools and Techniques of M-commerce used for Marketing

Research Methodology

For the purpose of study, necessary data was making available from secondary sources i.e. journals, books, news papers, websites etc.

Scope And Limitations:
The present study covers up the area, Features, challenges, services, tools and techniques of M-Commerce.

Theoretical Aspects

"Mobile Commerce is any transaction, involving the transfer of ownership or rights to use goods and services, which is initiated and/or completed by using mobile access to computer-mediated networks with the help of an electronic device" – Webagency, 2001.

Mobile commerce was born in 1997 when the first two mobile-phones enabled Coca Cola vending machines were installed in the Helsinki area in Finland. The machines accepted payment via SMS text messages. The first mobile phone-based banking service was launched in 1997 by Merita Bank of Finland, also using SMS. In 1998, the first sales of digital content as downloads to mobile phones were made possible when the first commercial downloadable ringtones were launched in Finland by Radiolinja (now part of Elisa Oyj). Two major national commercial platforms for mobile commerce were launched in 1999: Smart Money in the Philippines, and NTT DoCoMo’s i-Mode Internet service in Japan. I-Mode offered a revolutionary revenue-sharing plan where NTT DoCoMo kept 9 percent of the fee users paid
for content, and returned 91 percent to the content owner. Mobile-commerce-related services spread rapidly in early 2000. Norway launched mobile parking payments. Austria offered train ticketing via mobile device. Japan offered mobile purchases of airline tickets. The first conference dedicated to mobile commerce was held in London in July 2001. The first book to cover mobile commerce was Tomi Ahonen's *M-profits* in 2002. The first university short course to discuss mobile commerce was held at the University of Oxford in 2003, with Tomi Ahonen and Steve Jones lecturing. As of 2008, UCL Computer Science and Peter J. Bentley demonstrated the potential for medical applications on mobile devices.

**M-Commerce and E-Commerce:**

M-Commerce is a subset of E-Commerce. It is a transaction made through mobile or wireless. Some of the advantages of M-Commerce over E-commerce:

- Consumers can access the service in M-Commerce at any place which is not possible in E-Commerce
- M-Commerce is more secure than E-Commerce as users have authentication number
- M-Commerce is more convenient than E-Commerce in terms of using, carrying and handling the mobile devices

**Table no. 1: Role Of M-Commerce In E-Commerce Industry**

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth of E-Commerce (Figures in INR Crores)</td>
<td>26,263</td>
<td>35,142</td>
<td>47,349</td>
<td>53,301</td>
<td>81,525</td>
</tr>
</tbody>
</table>

Source: IMRBI-cube 2014, all India Estimates, December 2014
E-Commerce Industry In India Worth $13.5 Billion In 2014: Will Cross $16 Billion In 2015

According to the latest report by IAMAI and IMRB International, the e-Commerce industry in India reached a value of INR 81,525 crore (US$13.5 billion) in 2014. The rapid increase in the use of smart phones and internet services has earned India a place among top 20 developing countries on the global forum, as stated by AT Kearney in its 2014 Global retail development Index (GRDI). Consumer behavior has changed rapidly and visiting a local store to buy a mobile phone is now more of a pain.

Smart phones are driving the E-Commerce industry. The most important contributing factor to the rapid growth of digital commerce in India is the increase in the use of smartphones. Mobiles and mobile accessories have taken up the maximum share of the digital commerce market in India. E-Tailing sector had a share of 41% of the total revenue, closely followed by Apparels, Footwear and personal items, in total, having 20% share. Consumer durable items along with kitchen appliances were estimated at around INR 3,404 crores (US$531 million), and the remaining 25% was dominated by Laptops/Tablets/Netbooks (INR 2,780 crores or US$434 million), Home Furnishing (INR 1,059 crores or US$165 million) and Books (INR 648 crores or US$101 million). Along with travel, E-Tailing and other sectors, classifieds market grew remarkably, with a value of INR 896 crores (US$139 million) by December 2014. Competing with the major players in the digital commerce sphere, online service market grew with a CAGR of 73% since 2010. It estimated a value of INR 2,025 crores (US$316 million) by December 2014. Among online ticketing services, online commuting, online food and grocery delivery system, the food retail sector saw a boom of 40% over the last year, and by December 2014 estimated a value of INR 350 crores (US$54 million).

Area Of M-Commerce

In the current commerce industry, mobile commerce or M-Commerce has been entered in finance, services, retails, telecommunication 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.

- **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). 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.

- **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, and the status of requested processing and customer care support. 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.

- **Information Sector**
After the bursting of dotcom bubble, ecommerce 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 skillfully 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'

**Features Of M-Commerce**

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. They are explained as follows.

- **Ubiquity**
  The use of wireless device enables the user to receive information and conduct transactions anywhere, at anytime.

- **Accessibility**
  Mobile device enables the user to be contacted at virtually any time and place. The user also has the choice to limit their accessibility to particular persons or times.

- **Convenience**
  The portability of the wireless device and its functions from storing data to access to information or persons.

- **Localization**
  The emergence of location-specific based applications will enable the user to receive relevant information on which to act.

- **Instant Connectivity (3G & 4G)**
  Instant connectivity or "always on" is becoming more prevalent will the emergence of 3G & 4G networks, GPRS or EDGE. Users of 3 G & 4G services will benefit from easier and faster access to the Internet.

- **Personalization**
  The combination of localization and personalization will create a new channel/business opportunity for reaching and attracting customers. Personalization will take the form of customized information, meeting the users preferences, followed by payment mechanisms
that allow for personal information to be stored, eliminating the need to enter credit card information for each transaction.

- **Time Sensitivity**

Access to real-time information such as a stock quote that can be acted upon immediately or a sale at a local boutique. Security depending on the specific end user device, the device offers a certain level of inherent security.

**Challenges Of M-Commerce**

Mobile devices offer limited capabilities (such as limited display). Between mobile devices these capabilities vary so much that end user services will need to be customized accordingly. The heterogeneity of devices, operating systems and network technologies is a challenge for a uniform end user platform. For this reason, standardization bodies consisting of telecommunication companies, device manufacturers and value added service providers integrate their work. Mobile devices are more prone to theft and destruction. The communication over the air interface between mobile device and network introduces additional security threats.

**Services Offered By M-Commerce**

**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 device with the help of simple application downloads, or by accessing the WAP portals of various travel agents or direct service providers.

**Mobile vouchers, coupons and 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 sale 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. It is very simple commerce method.

**Content purchase and delivery**

Currently, mobile content purchase and delivery mainly consists of the sale of ringtones, 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.

**Location-based services**

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

- Local discount offers
- Local weather
- Tracking and monitoring of people
- Local map

**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
- Stock quotes
- Sports scores
- Financial records
- Traffic reporting

Customized traffic information, based on a user's actual travel patterns, can be sent to a mobile device. This customized data is more useful than a generic traffic-report broadcast, but was impractical before the invention of modern mobile devices due to the bandwidth requirements.

**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. This service is often referred to as *Mobile Banking*, or MBanking

**Mobile Storefront**

The reinvention of the mobile phone as a touch sensitive handheld computer has for the first time made mobile commerce practically feasible. 'According to ABI Research, mobile is going to get a lot bigger in the e-commerce market. The research firm is predicting that in 2015, $119bn worth of goods and services will be purchased via mobile phone.'
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 developments in a timely fashion and irrespective of their physical location.

Auctions

Over the past three years mobile reverse auction solutions have grown in popularity. Unlike traditional auctions, the reverse auction (or low-bid auction) bills the consumer's phone each time they place a bid. Many mobile SMS commerce solutions rely on a one-time purchase or one-time subscription; however, reverse auctions offer a high return for the mobile vendor as they require the consumer to make multiple transactions over a long period of time.

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 computer.

Mobile Purchase

Catalog merchants can accept orders from customers electronically, via the customer's mobile device. In some cases, the merchant may even deliver the catalog electronically, rather than mailing a paper catalog to the customer. Some merchants provide mobile websites that are customized for the smaller screen and limited user interface of a mobile device.

Mobile marketing and advertising

In the context of mobile commerce, mobile marketing refers to marketing sent to mobile devices. Companies have reported that they see better response from mobile marketing campaigns than from traditional campaigns.

Mobile Media

Mobile media is a rapidly changing field. New technologies, such as Worldwide Interoperability for Microwave Access, (WiMax), act to accelerate innovation in mobile commerce. Early pioneers in mobile advertising include Vodafone, Orange, and SK Telecom. Mobile devices are heavily used in South Korea to conduct mobile commerce. Mobile companies in South Korea believed that mobile technology would become synonymous with youth lifestyle, based on their experience with previous generations of South Koreans.
"Profitability for device vendors and carriers hinges on high-end mobile devices and the accompanying killer applications," said Gibran Burchett.

**Payment Process Of M-Commerce**

Consumers can use many forms of payment in mobile commerce, including: Premium-rate telephone numbers', which apply charges to the consumer's long distance bill. Charges added to the consumer's mobile telephone bill, including deductions to prepaid calling plans.

The following data shows mobile banking users they make payment through mobile banking

<table>
<thead>
<tr>
<th>Year</th>
<th>2010 (In Millions)</th>
<th>2014 (In Millions)</th>
<th>Increase (In Millions)</th>
<th>Growth (In %)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.96</td>
<td>35.5</td>
<td>29.54</td>
<td>495.64</td>
</tr>
</tbody>
</table>

Source- RBI and reports on Trends progress of Banking in India

- **Credit cards**

Some providers allow credit cards to be linked to a phone's SIM card.

The following Table and Graph shows credit card users in India

<table>
<thead>
<tr>
<th>Year</th>
<th>2010 (In Millions)</th>
<th>2014 (In Millions)</th>
<th>Increase (In Millions)</th>
<th>Growth (In %)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>18.33</td>
<td>35.56</td>
<td>15.23</td>
<td>83.09</td>
</tr>
</tbody>
</table>

Source- RBI and reports on Trends progress of Banking in India
• **Micropayment services**

Stored-value cards, often used with mobile device application stores or music stores

• **Mobile wallets:**

In this system, mobile phone users open a mobile wallet account in an issuing bank and deposit cash to get mobile account number. After purchase, through mobile phone users type in account number and send it to the issuing bank via SMS. Mobile wallets automated system checks for sufficient balance and payment amount is debited from the users account.

**Tools & Techniques Of Mobile Commerce**

In present market, number of mobile tools available for the companies to engage customer in business, the following are some of the technologies that are help in reaching the customers:

• **SMS (Short Message Service):**

SMS is short messaging service 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 to order a product or service.

• **MMS (Multi-media Message Service):**

MMS is Multimedia Message Service. This 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 products or services.

• **Mobile Web Applications:**

Accessing web page on mobile devise 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 content of other web pages, and they can trade.

- **Bluetooth or Bluecasting:**

  A Bluetooth message can be circulated within a 10-meter range, retailers, mall owners, and small business holders use this tool to sell their product to the customers who come in the proximity of that area.

- **Location-based marketing:**

  Location-based marketing helps to locate the customer location via GPS (Global Positioning System) technology, and the 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 it to offer various services to their customers. A customer has to follow the instructions recorded on the system at the other end.

**Testing Of Hypothesis**

**Hypothesis-1)**  
M-Commerce offers the services to different sectors

This hypothesis has been examined basing upon services offered by M-Commerce, i.e., Mobile ticketing, Mobile vouchers, coupons, and loyalty cards. Content purchase and delivery, Location-based services, Information services, Mobile banking, Mobile storefront, Mobile brokerage, Auctions, Mobile Browsing, Mobile Purchase, Mobile marketing, and advertising Mobile Media. Hence, this hypothesis has been accepted.

**Hypothesis-2)**  
Multi forms for Payment of M-Commerce

This hypothesis has been evaluated with the help of the payment process of M-commerce. Hence, the hypothesis is found to be valid.

**Hypothesis-3)**  
Tools and Techniques of M-commerce used for Marketing

This hypothesis has been tested with the help of technologies that are reaching the customers like SMS (Short Message Service), MMS (Multi-media Message Service), Mobile Web Applications, Bluetooth or Bluecasting, Location-based marketing, Voice. This hypothesis has been approved.
Conclusion

Now-a-days, Cellular phones have become so popular that many businesses are beginning to use mobile commerce as a more efficient way to communicate with their customers. In order to exploit the potential mobile commerce market, mobile phone manufacturers such as Nokia, Sony Ericsson, Motorola, and Samsung, Lenovo, Apple are working with carriers such as AT&T Wireless and Sprint to develop WAP enabled smart phones. Using Bluetooth technology, smart phones offer fax, e-mail, and phone capabilities all in one, paving the way for M-Commerce to be accepted by an increasingly mobile workforce. IBM and other companies are experimenting with speech recognition software as a way to ensure security for m-commerce transactions. More recently, brick and mortar business owners, and big-box retailers in particular, have made an effort to take advantage of mobile commerce by utilizing a number of mobile capabilities such as location based services, barcode scanning, and push notifications to improve the customer experience of shopping in physical stores. By creating what is referred to as a 'bricks & clicks' environment, physical retailers can allow customers to access the common benefits of shopping online (such as product reviews, information, and coupons) while still shopping in the physical store. This is seen as a bridge between the gaps created by e-commerce and in-store shopping, and is being utilized by physical retailers as a way to compete with the lower prices typically seen through online retailers. Thus, the future of M-Commerce seems extremely bright because several experiments are going on to introduce the upgraded version of mobile likely to emerged with the evolution of 4G mobile technology.

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