STUDY OF IMPACT OF TELECOM SECTOR ON E-COMMERCE BUSINESS

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This is to certify that the work incorporated in the thesis entitled "STUDY OF IMPACT OF TELECOM SECTOR ON E-COMMERCE BUSINESS" For the degree of doctor of philosophy , in the subject of management studies under the faculty of management studies has been carried out by Ms.Maryamdokht Trabiyat in the department of management studies at **BharatiVidyapeeth Deemed University**, Institute of Management and Entrepreneurship Development(IMED)during the period from 2013 to 2016 under the guidance of Dr.Sankaye B.U.

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This is to certify that the work incorporated in the thesis entitled "STUDY OF IMPACT OF TELECOM SECTOR ON E-COMMERCE BUSINESS" For the degree of doctor of philosophy, in the subject of management studies under the faculty of management studies has been carried out by Ms.Maryamdokht Tarbiyat in the department of management studies at **BharatiVidyapeeth Deemed University** ,Institute of Management and Entrepreneurship Development(IMED) during the period from 2013 to 2016 under my direct Supervision/guidance

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Dr. Sankaye B.U.

Declaration by the Candidate

I hereby declare that the thesis entitled "STUDY OF IMPACT OF TELECOM SECTOR ON E-COMMERCE BUSINESS" submitted by me to the **BharatiVidyapeeth University, Pune** for the degree of doctor of philosophy (Ph.D.) in management studies under the Management Studies is original piece of work carried out by me under the supervision of Dr.Sankaye B.U.

I further declare that it has not been submitted to this or any other university or institution for the award of any degree or Diploma.

I also confirm that all the material which I have borrowed from other sources and incorporated in this thesis is duly acknowledged. If any material is not duly acknowledged and found incorporated in this thesis, it is entirely my responsibility. I am fully aware of implications of any such act which might have been committed by me advertenly or inadvertently.

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Research Student

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Table of Contents

List of Tables

List of Figures

List of abbreviations

DBS	Direct Broadcast Satellite
HTML	HyperText Markup Language
TDCC	Transportation Data Coordinating Committee
ANSI	American National Standard Institute
ASCX12	Accredited Standards Committee X12
DD	Defence Department
NSF	National Science Foundation
NAPs	Network Access Points
ISPs	Internet Service Providers
SCM	Supply Chain Management
ERP	Enterprise Resource Planning
CRM	Customer Relationship Management
CAGR	Compound Annual Growth Rate
TRAI	Telecom Regulatory Authority Of India
MTNL	Mahanagar Telephone Nigam Limited
BSNL	Bharat Sanchar Nigam Limited
VPNs	Virtual Private Networks
FDI	Foreign Direct Investment

SMS	Short Message Service
EFT	Electronic Funds Transfer
POS	Points Of Sales
DEI	Electronic Data Interchange
WWW	World Wide Web
B2C	Business To Consumer
B2B	Business To Business
E-COMMERCE	Electronic Commerce
LAN	Local Area Network
PBX	Private Branch Exchange
ATM	Asynchronous Transfer Mode
WAN	Wide Area Network
ADSL	Asymmetrical Digital Subscriber Line
E-MONEY	Electronic Money
JIT	Just In Time

CHAPTER 1

INTRODUCTION

CONTENTS OF THE CHAPTER

1.20 Growth of Telecom Sector in India

1.21 The Global Scenario of Telecom Sector

1.22 Global scenario of the Telecom Consumer in 2020

1.23 The Indian Scenario of Telecom Sector

1.24 Services in Telecom Sector

1.1 Introduction

Nowadays e-commerce has become one of the most signifying part of each and every business and the rapid growth of it has become non ignorable. by increase of awareness about the facilities provided through internet and growth of knowledge about the concepts – which are pretty known nowadays – like Electronic Data Interchange (EDI) World Wide Web(WWW) and Emails, the business and internet have been somehow merged with each other and created a new era for the enterprises (Chaturvedi, 2005) .

Mainly 2 sectors have become the target of the movement toward electronic commerce; B2B and B2C in which both of them provide the relation between two sectors.

E-commerce is acting as bridge which connects a particular business to another one or to a targeted costumer.

Obviously and same as any other newly formed business structure, various constraints and barriers have made e-commerce face difficulties and problems. Political structure of the countries, trade and tariff, international rules and regulations as well as worldwide variable culture of the nations can be named as such difficulties (Yilmaz, 2010).

These difficulties mainly relate to legal, tax and privacy concerns. Practically every nation deserves the right of passing various laws and levy taxes that facilitates its own jurisdiction for future controls. for example in euro zone the set of rules and regulations confines the companies from collection of costumer's information's or in United States, each and every state has the right of passing different laws and levy taxes on sale of goods and services . In the other countries around the world, a broader list of business activities like VAT and etc. are imposed by the governments.

The share of E-commerce based transaction out of total transactions made over goods and services is overshadowed by the exceptional impact the web is applying over buys completed in the disconnected world.

If we assume 2000 as the year when technology bubble burst, as a result, crazy valuation for online companies vanished and many enterprises folded up. Growing number of internet users encouraged the survivors to pledge on as the best they could. Now the scenario has changed and valuation is raising in such a way that profitability of some of dotcoms are considerable and this leads to make business world more careful about the web potential. The truth of the matter is that the expectations toward world economy would move in to cyberspace can become understandable (Anton, 2006).

American department of commerce has declared 9.7 billion () as the total online retail sale in US but this figure deals only with part of retail industry. the sections like online travel services , ticket sales , pornography , and agencies are excluded from the mentioned amount where pornography (as a 2 billion $ business in America in 2003) , gambling (worth around 6 billion $) are also excluded as well. The office's figures incorporate the charges earned by some of web auction sites, overlooking the estimation of products that are sold by total value of $9.16 billion worth of trade was done in 2010(Peterkeen).

As another example e-Bay, has operated billions of dollars of products purchased and sold by organizations interfacing with each other over the internet. Some of these B2B services are restrictive for instance; Wall Mart forces to its suppliers as a condition for them to be part of its annual turnover of $405 billion (mark Noriss).

The web is essentially influencing on purchaser conduct. Out of each five customers, one wish to stroll into a Sears's retail chain in America to purchase an electrical apparatus will have examined their buy online-and most will know down to a dime what they plan to pay. Additional astonishing part is that three out of the four Americans lean toward web shopping of new autos, despite the fact that in a large portion of cases it winds up with buy from conventional merchants. The principle distinctions are

that these clients these days and because of impact of web, go to the showroom equipped with different data about the auto and every accessible decision. In some cases, they bring quests (like printout or data on a pen drive) about favoured vehicle from the merchant's stock that they need to buy (Assopolous, 2000).

Large number of people appreciates shopping on the web, for the situation that high consumer loyalty scores can be known as an aide. Sites are doing perpetually and cleverer things to serve and engage their clients, and appear to be set to take a much greater offer of individuals' general spending later on. This can be known as a huge ramification for the new and developing business. This goes to such an expansion, to the point that today an organization that disregards its site or does not consider its significance might confer business suicide accidentally. A site has turned into the organization's image items and administrations door, regardless of the possibility that the firm does not offer any items on the web. The observation is a futile site speaks to a pointless organization, and an adversary is just a mouse-click away. Be that as it may, even the easiest to use and coolest site will be lost in the internet if not searchable, so organizations need to seem high up in web indexed lists to be dependably the main snap do costumer's mouse.

One of the routes (other than web crawlers) to get saw online is to present the brand, products and administrations through one of the high activity enormous destinations. Viewers of these destinations know the site deliver and allude to the site on everyday schedule. EBay, Yahoo! What's more, Amazon is getting to be immense promoting stages for smaller organizations, however to participate, an organization's principle concern is to face serious value rivalry. The costumers are given the opportunity to check online costs and contrast them and those in their close-by neighbourhood shops and may well take a look at what clients in different regions are paying. It ought to be recollected that regardless of the possibility that sites are not giving shipment facility to the abroad customers, there are a lot of online agencies and business people prepared to oblige and can be drawn nearer.

1.2 Electronic Commerce a story from the birth

Concept of electronic commerce Sprout from a basic need inside business and government to improve utilization of computing and to apply PC innovation to enhance business forms, client cooperation, and trade of data both inside and across an undertaking.

The presentation of electronic funds transfers (EFT) During the 1970s, between banks over secure private systems changed money related markets and was one of the primary moves to accomplish previously mentioned objective. Electronic funds transfer improves electronic payments with electronically provided remittance information. These days there are numerous EFT variations, including the plastic whose utilization is turning into a standard practice at point of sale (POS) in any retail outlets, and direct stores to representative financial balances. Over #4 trillion change hands by means of EFT over the PC systems connecting banks, computerized clearinghouses, and organizations are taking place every day. 55 percent of all payments are estimated that were made through EFT (US federal government report in 1995)

Between the late 1970s and mid-1980s, e-trade turned out to be generally extended inside organizations as electronic messaging innovations: electronic data interchange (EDI) and electronic mail. Electronic messaging innovations are coordinated the greater part of business related procedures by diminish of printed material and increment of mechanization inside organization and among organization and customers. Customary Business trade was led with paper, checks, buy requests, and transporting archives, are presently and by the assistance of Electronic messaging innovation are directed electronically. EDI gives the office to organizations to get and send business reports, (for example, buy orders, bill of replenishing and different archives) in a formally dressed institutionalized electronic structure to/from their suppliers and clients. For instance, in setting of just-in-time (JIT) fabricating, EDI licenses suppliers to convey different parts straightforwardly to the production line floor, which brings about

investment funds in stock, warehousing, and taking care of expenses. Electronic mail does much the same for a wide range of authoritative interchanges in a wide range (F.Buttle, 2009).

EDI has developed into much distinct advancement, throughout the years. Electronic data interchange has been altogether fruitful for retail category management instead of different segments. Category management hopes to wind up mindful of client essential and auxiliary needs by putting the right decision before them as item, cost, and place. All items are classified into reasonable category, for example, prepared to be chosen things, and class chiefs settle on choices of every comparative thing in a category instead of one by one assessment of each item. As opposed to simply purchasing the least estimated things, purchasers use data about purchasing examples and utilize EDI innovation to look for the biggest funds for "smash hit" things in a class. This innovation has made another purchasing practice and reduction of expenses for both sides (producers and retailers) (Duan L David, 1979).

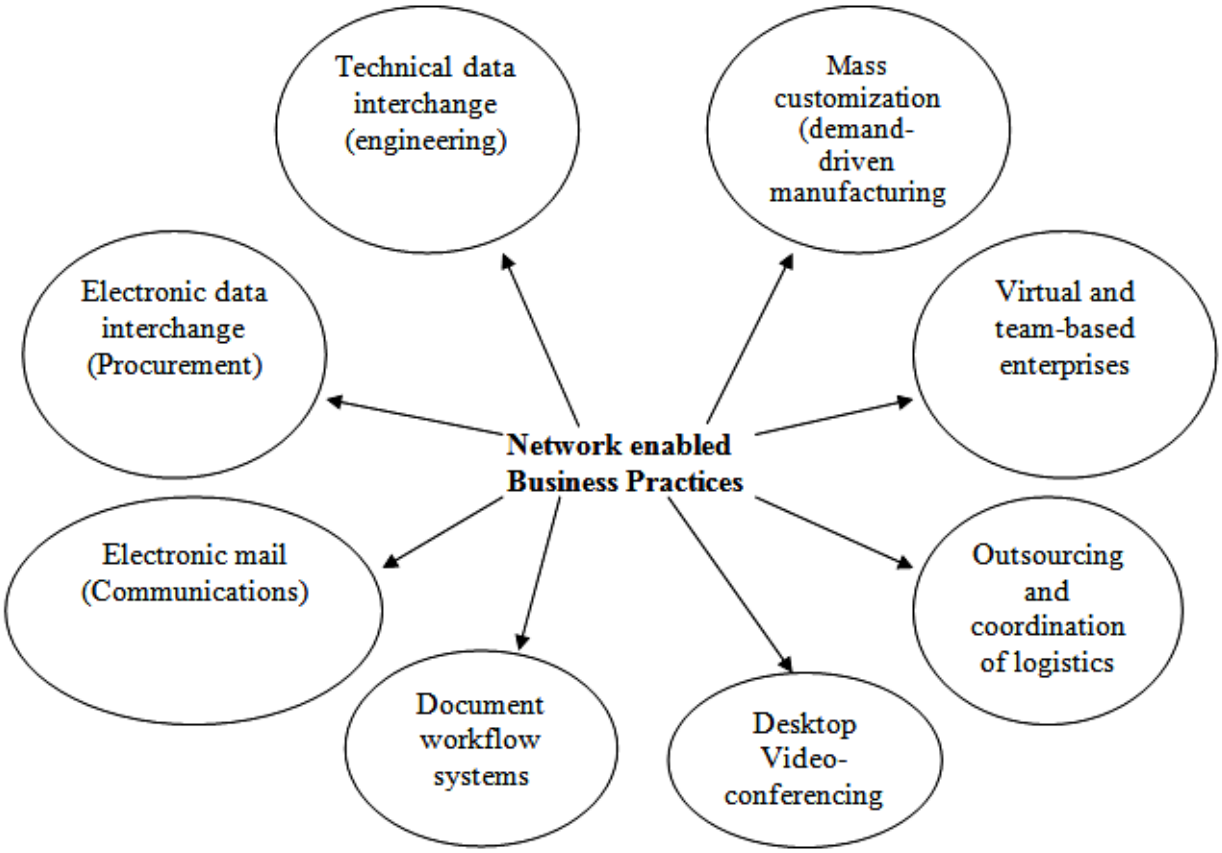


Figure 1- Network-enabled Business Practices

Somewhere around 1980s and mid-1990s electronic messaging technologies were called as groupware and had turned into an indispensable piece of work process figuring frameworks cooperatively Lotus Notes can be called as a conspicuous case of such frameworks. Groupware was concentrating fundamentally on taking existing non-electronic model of business and uniting them onto an electronic stage for development of business proficiency. Despite the fact that called as the "executioner application" in the mid-1990s, groupware endeavours brought about profitability and proficiency with the additions littler than anticipated.

An altogether different kind of electronic business innovation spread among buyers in the mid-1980s, the new e-trade was giving the immaterial products as online

administrations that gave another type of soil communication, (for example, chat rooms and inter-relay chat (IRCJ)and knowledge sharing (such as news groups and File Transfer Programs). By Social connection a feeling of virtual group was made among the internet tenants and offered ascend to the idea of a "worldwide town" that characterized the world as a major town. In the meantime, access to data and capacity of trade has gotten to be more straightforward and simpler from the moderateness planned. Presently, individuals can speak with each other around the globe at lower costs by utilizing the worldwide Internet (Kienen, 2000).

By 1990s, World Wide Web on the Internet can be considered as a defining moment in e-business by giving the least demanding "simple to-use" innovation answer for the issue of distribution and publishing of the data. Economy of scale is honed through The Web made electronic trade which was the less expensive method for working together and economy of extension was being practice due to being empowered more differing business exercises by associations. The Web likewise helped little organizations to rather more contend on a more equivalent innovative circumstance with asset rich multinational organizations. These new economies are compelling customary organizations to reconceptualise cost structures keeping in mind the end goal to stay focused.

1.3 E-commerce - Definition and Scope

Contingent upon whom you ask, electronic trade has distinctive definitions. According to interchanges perspective, e-business is to convey data, products, or services through phone lines, computerised.

According to business process perspective, e-trade lets us know how to apply innovation and computerization within business processes.

According to administration viewpoint, e-business is an aggregate that fulfils needs of an organization and shopper to reduce costs and enhance quality of products and convenience.

According to online viewpoint electronic business facilitates buying products, services and information on the Internet.

We can call all the above discussed definitions as "valid" definitions, as only perspective is different.

E-commerce attempts to increase performance level of the business, over a variable range of networks and therefore more efficient performance, more economic operation and more costumer oriented operation may be achieved as a result. To be more specific, e-commerce helps in exchange of information –laden transaction between existing parties by use of inter-connected networks. Mentioned networks can be a collection of cable TV, POTS (plain old telephone system), leased lines, wireless or etc. (Peter C. Verhoef, 2009).

What do we mean by transaction? The transactions are exchanges happening while an enterprise sells an item or service to another organization or individual. It happens when an items or service is transferred over an interface that connects a customer which is called as the client with a producer which is called as the server. When exchanges take place in an e-marketplace. In order to manage such exchanges, electronic commerce likewise implements exchange management to organize, route, process, and track the mentioned exchanges. Electronic commerce likewise includes electronic payments and assets transfers operations.

From another prospective in the process of e-commerce digital inputs are converted into value-added outputs (known as production process) through a group or set of intermediaries. As an example, on account of online exchanging, generation processes can include value by including more value-added processing, (for example, trend investigation) on the crude data (stock quotes) supplied to customers. Then again as another example value-added processing may include the outlining of thirty-day moving

averages, industry sector performance examination, and other processing that results in more preferred data leading to better decision making for the firm (Johnson, 2003).

The business recipe of e-commerce same as the conventional business can be seen as equation between profit revenue and cost. Each Firm applies technology to reduce operational expenses or enhance the revenue. Thus exchange management of e-commerce can likewise help firms to lower down operating expenses with the help of enabling better type of coordination in the generation, circulation and sales processes or what is called as better inventory network management, and to consolidate operations and reduce all extra overhead.

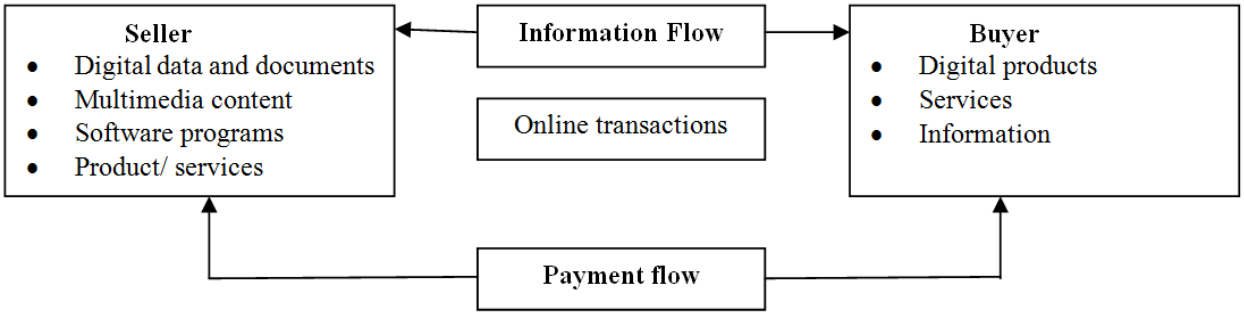


Figure 2 - Buyer/ Seller Transactions

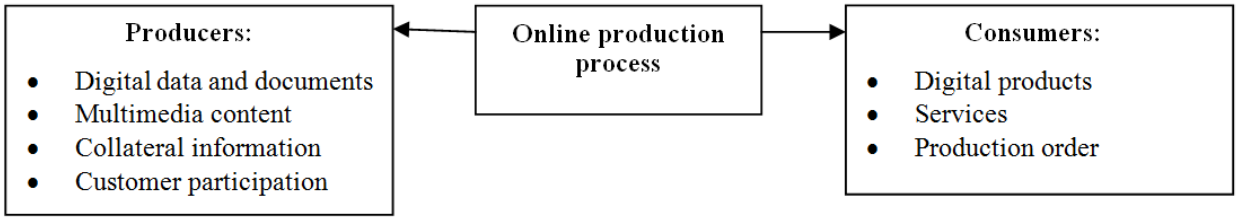


Figure 3 - Production Type Transactions

The objective of e-commerce research is to reduce the "contact" in online exchanges at the current time. The Friction is a large portion of times described in economics as the expense of exchanges which can arise due to ineffective structure of market which joins buyers, sellers, and intermediaries; non-capable authoritative structures. Reduced conflict in online trade will foster fluid transaction between buyers, seller and intermediaries.

1.4 Fuelling Forces of E-Commerce

Economic forces are the main drivers of e-commerce being as well as forces required for customer interaction and digital convergence. These forces are outlined below.

1.4.1 Economic: Staying competitive and also economic efficiency makes the organizations consider economic forces as the primary fuelling force as a main priority. These efficiencies include minimal effort technological infrastructures leading to reduction of technology upgrade costs, obsolescence; enhance accurate dealing with suppliers, supports data-sharing across the globe and advertising.

These forces spurring the movement to e-commerce are internal and external. Internally it helps integration of firm’s operations and externally enhances integration within network of suppliers, government, enterprises and workers into a unified group which can communicate over all available and regular computer stages. A great example of external integration is the automobile business, where without a moment to spare assembling and operation model forced companies like Ford and GMinteract with their suppliers through EDI.

Internal integration is crucial than connecting outside. In firm which is internally integrated, approaching orders are expedited through e-bills and the data is consequently sent to production, as well as to other departments like transporting, inventory etc.

Internal integration likewise makes sure that basic information is stored digitally on media which allows fast transmission and retrieval.

Coordinating data movement is crucial for internal and external integration, therefore every enterprise needs to discover approaches to setup processes that deal with how information is created, manipulated, and distributed. Another important aspect is data coordination so that seller, buyer and employees can cooperate with each other to resolve, improve and create new types of products and services.

1.4.2 Marketing and Customer Interaction:

Enterprises additionally apply electronic commerce to help marketing channels, to target large scale and smaller scale segments or of all shapes and sizes audiences, and to improve post-sale client fulfilment. As more companies create a pool in the marketplace with huge number of new items, target marketing has become an increasingly vital device of differentiating an item from another. Are new types of emerging items, as well as so are new players of old item categories, new twists on customary arrangements, new estimating strategies, new target markets, new market research methods, and etc(Kenna, 1991).

It has a clear message for the marketers: the acquiring propensities and the nature of item changes in a very snappy manner. In order to stay in the competition, executives must employ technology to develop easy customer-prospecting methods, create a very close type of relationship with customers, and help to develop customer dedication. Marketers must adjust to a business world in a manner that the customary concepts of differentiation no longer hold; in this world "quality" picks up a new and vital meaning, "content" does not mean "item," and "circulation" may not necessarily mean "area of a physical evidences or item."

1.4.3 Technology and Digital Convergence:

Information technology can convert multimedia messages into a bit stream and compile, store, use, and transmit them effectively on a large scale without compromising its value. Therefore, and as a result, e-commerce and the multimedia revolution are driving the previously disparate industries.

Advancements in information technology are encouraging the firm to provide the crude power for the "computerized convergence" with respect to content and transmission.

1.4.4 Convergence of Content:

Leaving out the first shape, convergence of content ensures that digitized type of data (expressed as computer-based ones and zeros) can be processed, searched, sorted, enhanced, converted, compressed, encrypted, replicated, and transmitted at a competitively lower cost; which is boon to content-based industries like newspapers, magazines, and books.

Convergence of content encourages sophisticated information publishing and browsing tools. As an instance, content convergence can be called as the fundamental idea behind the browser industry exemplified by the meteoric rise of Netscape Communications, a browser-provider which, in the space of a year, developed from nothing into a company worth approximately $6 billion.

The concept of Content convergence enables companies to use databases in networks and electronic publishing in order to improve corporate and individual decision making and data processing too. Commerce consists of various ranges of operations like forms of information gathering, processing, manipulation, and distribution. It facilitates the creation of a computer and network infrastructure and also enables the coordination and integration of business workflows.

1.4.5 Convergence of Transmission:

By transmission convergence we can compress and stores digitized data in a manner that it can travel through a phone, wireless, and cable wiring systems. Convergence of transmission is a convergence of correspondence equipment that provides the "pipelines" to transmit voice, data, image, and video over the same line. Transmission convergence over a single line makes it easier to connect different users as computers, quick peripherals, and consumer electronic devices, and to expand a wide range of image-intensive or multimedia applications. From a business prospective, convergence of transmission results in easy access to networks and in the creation of, extraordinary failure cost delivery channels for new and old items aimed at either existing customers or new customer segments.

Till now, the convergence of voice and information network has been an elusive objective because of irreconcilable differences between local area network (LAN) as well as private branch exchange (PBX) technologies. However, the emergence of a new network technology called as asynchronous transfer mode (ATM) made changes in this picture. Today, it is easy to see a way that leads to aggregate integration of voice with video and information networking, from the wide area network (WAN) the distance to the a specific desktop. Introducing a single, integrated network recues on location cabling requirements and eliminates redundant wiring to related gatherings.

It additionally created the likelihood of encouraging to a limited extent by the convergence of data access devices-essentially the obscuring of lines among computers, telephones, and televisions. The technologies like cable modems, half breed fibre/coaxial systems, and asymmetrical digital subscriber line (ADSL), which uses customary twisted-pair telephone wires, offer the chance of verging on unlimited transfer speed to the users.

1.4.6 Implications of Various Forces:

Both Economic and marketing forces and digital convergence have made a huge influence over how industries are seeking after themselves to take the benefits of new chances, including creating new service delivery ways, the development of new markets for existing items, and the development of new information based items for the online environment. As an instance, digital world is reshaping the competitive circumstance in telecommunications sections far and wide. In response to the intensified competition and reduced edges on essential telephone services in telecom markets, network operators started creating new IT-driven intelligent networks in order to offer a wide range of services with value expansion. These services has already caused a battle between cable TV providers and telephone network operators over which systems will deliver video-on-demand, video games, home shopping and sparing money, and other interactive consumer services to the home.

Be that as it might, before companies would be able to exploit the capabilities of e-commerce and make it a modern strength instrument for business, it is needed to be acquainted with the technological aspect better.

1.5 E-Commerce Industry Framework

E-commerce is not just affecting exchanges between parties, it likewise can influence the way markets will get structured. In conventional model of business, market ties were created through the exchange of good, services, and money. E-commerce includes a new element: data. Market ties, for example, those conforming to online payments, are currently relying on data products; data services, and e-money (electric money). Even however still conventional payment method is for all intents and purposes being used, some companies like M.S .Microsoft and Intuit are applying worldwide payment method for their business. Technology has led to creation of new market opportunities that enables new players to step in, creating a whole new set of market elements.

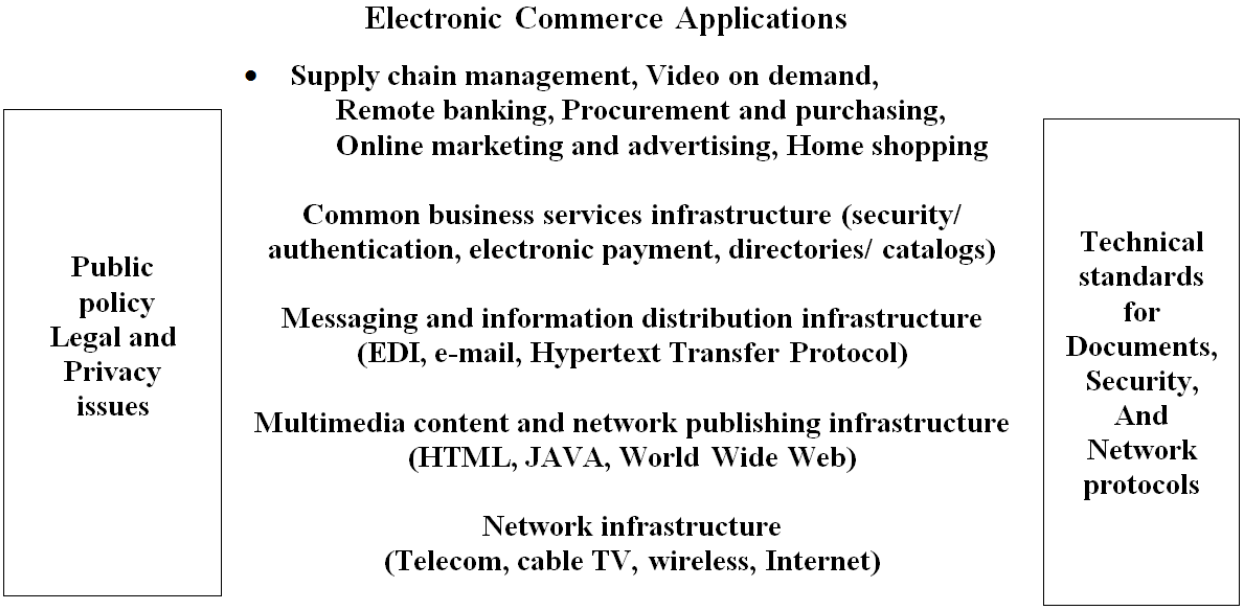


Figure 4 - Framework for Electronic Commerce

In order to understand the market structure that is developing around e-commerce, a simple framework has been generated (see Fig. 1.4) that altogether captures the development in the area (KALA 96). Even aware of the importance of electronic commerce have little understanding of online language, or how the business structure is made. Such perplexity is further entrenched by the media's use of different names to refer to the phenomenon or its different components: the Cyberspace, Interactive Multimedia, Information Superhighway, the Internet, etc. It is Important for businesses to understand the overall operation and limit of industry in order to develop business strategies that employ e-commerce.

The coming section is going to explain each aspect of the e-commerce infrastructure in detail, beginning with the most extensively based term which is called as the Information Superhighway Infrastructure.

1.5.1 The Big highway of information:

The Information Superhighway has created a wide range of methods for transporting the systems and does not only limit as a solid entity; there is no single interstate expressway that the digital equivalent of Los Angeles to Miami. Instead, the architecture is a mixture of numerous types of quick network transport, which might be area based telephone, air-based wireless, modem based PC, or satellite-based. For instance, an e-mail sent from a portable PC in the Gujarat to a computer in Paris may travel over several different types of transport network interconnected with each other before it reaches its determined or desired destination.

The fundamental players of such industry segment can be called as data transport providers. They are: telecommunication companies that provide phone lines; cable TV system that provide coaxial cables and direct broadcast satellite (DBS) network; wireless companies that provide mobile radio and satellite network, including private network like CompuServe of America Online, and open data network like the Internet.

The mentioned divide also includes both hardware and software instruments that provide an interface with the different network alternatives, and to the customer premises equipment, which is a generic term for owned related equipment that is attached to the network. This arrangement of user's terminal equipment can be divided into three sections: cable TV set-top boxes, computer-based telephony, and networking hardware like centre focuses, wiring closets, and routers or digital switches. The terminal equipment is in real word the gateway that information services, commercial exchange, and over five hundred digitally compress the channels.

The essential area of development over latest five years has been in the router business. Routers and digital switches are used to connect large internetworks. Routers are devices that can connect the local area network (LAN) inside different relationship with the wide area network (WAN) of different network providers around the world. This type of interconnection enables makes correspondence between separate networks crosswise over geographical distances and provides access to distributed figuring resources easier. The

router business is has become a multi-billion-dollar business that is dominated by players, for example, Cisco, Bay Network, and 3COM, every one of the three of which are principle suppliers of equipment that connections data correspondence network through the Internet. In a recent valuation by Business Week, Cisco was rated as the fortieth largest association in United States, with a market value of more than $26 billion. Such rate is not terrible for an association with an extremely specialized and specific item.

1.5.2 Multimedia Content and Network Publishing:

The Information Superhighway is the transportation infrastructure that enables the transmission of content as data. The electronic system through which content is transmitted is comparable to the non-electronic world in which different types of items which are content are stored in dispersion centres which are network distributed servers) before they are loaded onto different instruments for movement.

These days, the most prevalent architecture that enables networks distributed is the World Wide Web or WWW. The Web enables little businesses and people to develop content as Hypertext Markup Language (HTML) and represents it on a Web server. Essentially, the Web provides a means to create item information (content) and a means to distribute it in a course centre which is called as network server.

1.5.3 Messaging and Information Distribution:

The transferring contents over the network may be consisted of text, numbers, pictures, sound and video. However, the type of data does not make any different for the network as everything is digital that is, blends of cones and zeroes. Once content gets generated and stored on a specific server, vehicles, or messaging and information conveyance methods, convey that data over the network. The messaging vehicle is called middleware software that sits between the Web servers and the end-user applications and

veils the peculiarities of the environment. Messaging and information dissemination also includes deciphering instruments that interpret and change data bunches.

Messaging devices facilitate methods for conveying both unstructured and also structured data. Unstructured messaging devices are e-mail, fax, and based systems like Lotus Notes. Structured documents messaging comprise of the automated interchange of standardized and approved messages between computer applications by means of telecommunications lines. Purchase orders, shipping notices, and different types of invoices can be called as structured document messaging.

By virtue of e-commerce, existing messaging mechanisms must is into such an extension, to the point that incorporates reliable, unalterable message delivery that is not subject to repudiation, to be able to know and give evidence of delivery of contents when required. The challenge in the development of messaging software is to make it work over a variety of devices like PCs, workstations, set-top boxes, and wireless communicators, interfaces like characters, representations, and virtual reality, and networks like satellites, cable, twisted pair, fibre optics, and wireless.

1.5.4 Common Business Services Infrastructures:

Online business has received attention for its capacities, as well as for such barriers as shortage of directories, shortage of online payment instruments, and shortage of information security. Most of business services infrastructure attempts to overcome with such shortcomings by infrastructure it is meant the different methods for convenience of online acquiring and selling processes. In context of e-commerce, buyers send an electronic payment which is a type of electronic check or digital money and furthermore some remittance information to the seller. Settlement are considered done when the examination of payment and remittance information are accepted as legitimate.

Likewise to enable online payment for information and ensure its safe delivery, the payment services infrastructure requires developing encryption or making contents

indecipherable except for the intended recipient and verification or in the other words guaranteeing that customers are who they say they are methods that ensure security of contents travelling on the network. Despite payment services, e-commerce ought to facilitate some other desirable payment-related services like currency exchange, money management, escrow, investment and brokerage, monetary information and reporting, and charging and payment services. The advancement of security-oriented exchanges and secure online payment instruments like digital money and electronic checks is currently one of the most active areas of e-commerce development.

1.6 Other Key Support Layers:

Two main pillars for all e-commerce infrastructures are:

1.6.1 Public Policy:

By Public approach it is meant that e-commerce encompasses the issues like universal access, security, and information esteeming. Unlike business activities, which are governed by the commercial Code and detailed case histories, e-commerce currently poses fundamental strategy and legal questions. Better to say, the issues themselves, let alone policies, are quite recently evolving and will become increasingly imperative as the number of entering people increase.

1.6.2 Technical Standard

Technical gauges for the most part concentrate on the specifics of information distributed devices, user interfaces, and transport. Certain Standards are essential to ensure limit and confidence over the network. Pretty much as standard transportation networks, for example, rail-streets face difficulties with different track gages in different

countries, differing principles in electricity flow (110 versus 200 volts) and video conveyance (Sony BETA versus VHS), are considered as imperatives of worldwide use of numerous items (http://www.ndsap.gov.in).

1.6.3 Final Word on the Framework

In spite of all fundamental figuring issues which are mentioned, these days a variety of industries are developing new applications that target both consumers and businesses safely. Experiments are necessary in order to forecast which applications will be successful, however these exercises require proper infrastructure. Likewise, in order to get ready for it, hard choices have to be made about which applications might be successful. This is a great dilemma that Microsoft, for one, negotiates quite well.

1.7 Types of Electronic Commerce

E-commerce can be broadly classified as following: (http://www.trai.com).

Inter-organizational Electronic Commerce: From the point of view, e-commerce facilitates the following aspects:

- **Supplier management.** Electronic devices and instruments help companies to reduce the number of suppliers and facilitate business partnerships by reducing (PO) processing expenses and cycle times and by increasing the number of POs processed with limited number of people.

- **Inventory management.** Electronic instruments make the order-ship-charge cycle shorter. If the lion's share of a business' partners is linked by means of electrical instruments, information once sent by means of mail can now be immediately transmitted

Businesses can likewise track their documents to check whether they were received, thereby enhancing examining devices. This furthermore helps in reducing inventory levels, improve inventory turns, and eliminate out-of-stock circumstance.

- **Distribution management.** Electronic instruments help with encouraging the transfer of transportation documents, for example, BOL, PO, advanced boat notices, and manifest documents, and enables better resource management by guaranteeing the accurate data contents id the documents.

- **Channel management.** Electronic application quickly helps in access of information about changing operational conditions to exchanging partners Technical, item, and estimating information the once required repeated telephone calls and countless work hours can for in order to circulate information's can now be posted to electronic bulletin sheets. By electronically connecting generation related information with international merchant and reseller networks, companies can eliminate a huge number of work hour's dangers and threats and maximize ensuring accurate information sharing.

- **Payment management.** Electronic applications connect companies with suppliers and wholesalers so payments can be sent and received electronically. Electronic payment reduces clerical error, increases the speed of processing invoices, and decreases exchange fees and expenses.

For example, In the 1980s, Wal-Mart stores implemented a unique system of inter-authoritative electronic commerce. Wal-Mart invested a large partition of a billion dollars in related facilities like computer and satellite correspondences networks, standardized identification systems, scanners, and other equipment connecting each purpose of-scale terminal to dispersion centers and headquarters in Bentonville, Arkansas. Numerous believe that this system helped Wal-Mart to manage the explosive retail sales development that catapulted the association to the number one position in the US retail business. Mentioned system helped the association to keep up high service

levels and increase sales, while reducing inventory costs by three-fourths. Further, Wall-shop empowered individual stores to order directly from even overseas suppliers, reducing inventory restocking time from an industry average of six weeks to thirty-six hours. Moreover, by completing every sale purpose of-sales devices, Wal-Mart stores were better able to keep their stores well-stocked, while keeping up tight inventories and low prices (DM92).

Little enterprises are furthermore beginning to see the advantages of applying e-commerce to reduce sales, creation, and delivery costs. A large partition of the paper documents being exchanged between exchanging partners (like: invoices, checks, purchase orders, budgetary reports) are in electronic structure at their purpose of root however are printed and re-entered at the purpose of receipt. Electronic data interchange (EDI) is an increasingly attractive alternative to the current process of printing, mailing, and rekeying, which is in nature exorbitant, time-devouring, and error-prone.

1.8 Intra-organizational Electronic Commerce:

The objective of intra-organizational applications is to enable an enterprise to sustain the relationships to bring forth higher value to customer by carefully integrating different affairs in an organization. From this perspective intra-organizational e-commerce helps in following processes.

- **Workgroup communication.** Enable directors to connect with clerks through e-mail, video conferencing, and circulars. The purpose is increase of circulation of information by the help of technology.
- **Electronic distributed.** Helps an enterprise to frame up, distribute, and issue different directions like HR manuals, specifications of the item through World Wide Web. The principle objective is to give the required data for enabling better strategic and strategic and mid-level decision making all through the enterprise.

Additionally, online distribute of data shows accelerated and clear benefits: costs deduction for print and dispersion of documentation, rapid delivery of data, and reduction of useless data.

- **Sales force efficiency:** Accelerates data stream among generation and sales, and between the organizations and customers respectively. Through integration of the sales forces inside the association, business can achieve better market intelligence and competitor data, leading to better strategy. Moreover, collection and investigation of market intelligence becomes brisk and intensive.

"Corporate Intranets" are established to gain access to information with respect to HR, communication within employees; product and project management, internal information, sales support, shipment tracking, documents and evidences, and access to corporate databases.

1.9 Consumer-to-Business E-Commerce:

In case of consumer-to-business e-commerce transactions, customers get product information through internet, make purchase through e-cash and track shipment over network. E-commerce facilitates following aspects from customer's perspective:

- **Social interaction.** Electronic tools and instruments facilitate customers to speak with one another through e-mail, videoconferencing, and news teams.
- **Personal finance management.** Electronic tools and instruments like modify customers to manage their own portfolio victimisation on-line banking tools.
- **Purchasing product and knowledge.** Electronic tools and instruments facilitate customers to search out on-line info regarding desired existing and new product and services.

Consumers naturally like bigger convenience and lower costs. E-commerce provides shoppers with correct and convenient searching strategies, from on-line catalog ordering to phone banking, each of that minimizes the prices of retail branches. E-commerce facilitates manufactory orders by eliminating several extra steps resulting in lowering manufactures inventory and distribution prices, and indirectly providing moving the worth ought to be paid by costumers.

1.10 Intermediaries and Electronic Commerce:

Electronic brokers square measure economic agents that stand between the parties of dealings, particularly consumers and sellers, and perform needed functions to the fulfilment of the commitment. The corporations within the monetary service sector like banks, insurance corporations, mutual funds, and capital corporations, will be thought-about as Electronic brokers or intermediaries. Alternative well-known types of intermediaries are brokers, agents and traders. A given go-between implementation will serve at the same time in additional than one in every of these forms, or roles. Table 1.1 lists a range of on-line intermediaries in electronic commerce.

On-line intermediaries' modification the normal retail distribution criteria. Historically, nearly each stage of a product's life cycle was being handled by identical firm. On-line merchandise is handled otherwise. a corporation sends publishes the outline of a product via public data, a client responds with AN order, the seller modifies the merchandise to suit individual tastes, and therefore the product is shipped on to the buyer's place. The result's a lot of economical production, distribution and a minimum of within the theory lowers costs.

Clearly, more opportunities exist for intermediaries who process and worth addition to data on the transactional chain. Information-oriented products range varies from the technologically simple process such as order taking to highly sophisticated operation such as customized manufacturing. In the other words, in the case of ordering a

flower from an intermediary, the order shall be diverted to supplier and delivered to buyer simply. In more complicated cases, trade brokers create software that allows customers to view and choose vehicles by computer, eliminating time-consuming trips to the specified lot. These programs then provide valuable data to the car companies' manufacturing and inventory systems that indeed control the process of production and distribution of the car.

Table 1 - Different Types of Online Intermediaries

Type of Intermediary	*Definition and Examples*
Equipment providers	Services (Sun Microsystems), Clients (Compaq), Routers (Cisco), and Network Cards (3COM)
Network access providers	America Online, CompuServe, Prodigy, Net Com, UUNET, and PSI
Information access providers	Netscape (Navigator browser and Commerce server), Adobe (Acrobat viewer), and Microsoft (Explorer)
Payment/ transaction processors	First Virtual, DigiCash, VISA, and MasterCard
Financial intermediaries	Quicken, Microsoft Money, Meca Software
Web server providers and designers	Consultants and providers who help users design and set up World Wide Web pages for a substantial fee
Information directory providers	Yahoo, Alta vista, Excite, Lycos, and InfoSeek
Information rating services	Consumer Reports, Edmunds Car guide

In case of on-line retail, intermediaries do pretty much by packaging and marketing info through pc networks. The web catalogue business is one among the foremost economical and productive intermediation-based industries. A productive example is CUC International INC. in Greenwich, Connecticut. CUC's customers flick through an enormous electronic information service that lists over 2 hundred fifty brand-name merchandise, as well as appliances, luggage, and jewellery. CUC electronically forwards client orders to the products' makers, as a result of CUC doesn't would like bricks, mortar, labor, or physical transportation to store and ship merchandise, it's ready to supply customers' lower costs than those provided by ancient retailers.

Within the on-line marketplace recently a replacement style of intermediary that is named as electronic brokerages has emerged as a key factor. A brokerage is a service that has functions by that to interconnect, adapt, and facilitate services offered by any of the opposite parties. For instance, it's usually fascinating for info to be combined to permit construction of additional added info merchandise.

At the e-commerce package stage, the perform of intervention is more and more being enforced via package agents that have "intelligence", that is, they follow tips and have autonomy to react to conditions they sense from the atmosphere proactively.

It's clear that intermediaries comprise a major portion of the web economy. Therefore, understanding the forces that bring about to the demand for intermediaries, likewise because the characteristics and structure of intermediated on-line markets, is crucial for understanding the practicality of electronic markets.

1.11 Early Business Information Interchange Efforts:

The carry of colossal scale companies in between of the late 1800s and early 1900s prompted the ought to create and hold proper files of each exchange transaction. Within the Nineteen Fifties, companies started to make use of desktops to retailer and method transaction files internally, but nonetheless the flows of know-how in

organizations endured to be on paper equal as normal means. Buy orders, invoices, fees of lading, cherubs, remittance advices, and other usual types were used to traditional transactions.

The procedure of generating a paper type, mailing that form by means of a person, and then having a different man or woman enter the data into the associate's computer used to be not rapid sufficient.

It was once additionally inefficient, high priced, redundant, and unreliable in most of the instances. By way of the Nineteen Sixties, corporations that grew to be engaged in massive volumes of transactions started changing transaction understanding on punched cards or magnetic tape as a practice. Advances in data communications science eventually allowed trading companions to transfer knowledge over phone traces instead of transport punched cards or magnetic tapes to each other.

Even though these knowledge playing the act of transferring promises between buying and selling companions result in increase of efficiency and reduction of mistakes, they were not an perfect answer. When you consider that the deciphering functions that one trading companion wrote by and large may not work for different trading companions, each and every corporation participating in this exchange of expertise have to make a notably funding in computing infrastructure? Only colossal buying and selling companions could find the money for this funding, and even such businesses had to have a gigantic number of turnovers to set the fee. Smaller-or shrink-volume trading partners would now not find the money for to take part in the advantages of those paper-free exchanges.

In 1968, some freight and transport firms created a joint venture to form the Transportation data Coordinating Committee (TDCC), which as charged with exploring approaches to cut back the forms volume that shippers and carriers used to face. The TDCC created a standardized know-how set that included all of the information factors that shippers most likely included in expenditures of lading, freight bill, delivery manifests, and other paper types. They determined that alternatively of printing a kind,

shippers would turn out to be expertise about shipments into a computerized report file that conformed to the TDCC normal format. The shipper might electronically switch that file to any enterprise offering freight offerings that had already taken the TDCC structure. The freight company translated the format into knowledge it could use in its own crucial unit. The financial savings from no longer printing and dealing with types, not getting into the info twice, and no longer having to fear about error-correction approaches had been too tremendous for each parties.

After a protracted amount of attention and makes an attempt made to set broader EDI standard, a quantity of industry businesses and a few big corporations made decision to make a foremost change and create a collection of cross-enterprise specifications for digital components of trade, mechanical equipment, and any other usually used objects. The American country wide requisites Institute (ANSI) has been the coordinating physique for setting such regular in the USA considering the fact that 1918. Certainly ANSI was now not surroundings specifications, though it operated as creator of tactics and organizational standards for the development of countrywide necessities and authorized promises that follow acknowledged and used systems.

A new committee called as *Accredited Standards Committee X12 (ASC X12) was* established by ANSI in 1979 to develop, maintain and generate consistent EDI standards. This committee which includes IT professionals from more than 750enterprises meet thrice a year for the said purpose. Membership to *ASC X12*is open to interested organizations and individuals and this committee derives its benefit from pooling of experience from varied organizations.

In 1987, the United Nations distributed its first benchmarks under the title EDI for Administration, Commerce and Transport (EDIFACT, or UN/EDIFACT). As the Internet picked up noticeable quality as an instrument for leading business, the exchanging accomplices who had been utilizing EDI begun to see the Internet as an able swap for the excessive rented lines and dial-up associations they had been utilizing. Organizations that were not able bear the cost of EDI started to take a gander at the Internet as an

empowering innovation that may get them back in the round of offering to an expansive number of clients around the globe who requested EDI abilities of their suppliers.

The real disadvantages to lead EDI over the Internet at first were general worries about security of data and the Internet's powerlessness to give review logs and in addition outsider confirmation of message transport and conveyance. The nonappearance of confirmation of the outsider keeps on being a worry, since the Internet has not implicit office for that. Since EDI exchanges are business contracts and regularly manage a lot of cash, the issue of non-notoriety causes genuine stresses.

1.12 Emergence of the Internet:

The part of the Internet in the advancement of e-trade has been basic to the point that the recorded foundation of e-business tied with the authentic setting of the Internet. By the assistance of the Internet, you can connect with other people all through the world by help of email, read online types of every day papers, diaries, and books, join examination bunches on any as a rule intrigued point, partake in amusements and reproductions, and acquire free PC programming. Lately, the Internet has permitted business and exchange undertakings to associate with each other and the costumers too. These days, a wide range of undertakings give data about their items and associations on the net. A considerable part of these affiliations take the advantages of the Internet to market and offer their items and associations. The part of the net called as the World Wide Web, or, in alternate words, the Web, is a subset of the processes on the Internet that are associated with each other in a specific channel that makes those PCs and their substance effectively reachable to each other. The huge thing about the Web is that it incorporates a simple to-use technique. This strategy makes it workable for people who are not specialists in PC to utilize the WWW to get to an extensive variety of Internet assets. In the early 1960s, the US Department of Defence became very greatly worried up on the possible effects of a nuclear strike on its processing facilities. The Defence

Department realized the need for powerful computers for coordination and control. The powerful computers called as super computers of that time were all large mainframe computers. So the Defence Department began attempting the methods to connect these computers to each other furthermore to weapon establishments that were placed everywhere all through the world. The DD agency charged with this errand, employed a considerable parcel of the best correspondences researchers and funded research at world's leading universities and institutes to explore the assignment of creating a worldwide network that could remain operational even if parts of the network were destroyed by enemy military movement. These researchers worked to create approaches to assemble the sets of networks that could demonstration separately-that is, networks that would not require a central computer to control network operations.

The world's telecommunication companies were the early models for networked systems, because early connected networks of computers used leased lines for their connections. Telephone systems of that time established a single channel between sender and receiver for each call, and that connection delivered every one of the data along a single channel. When an association wanted to connect systems it owned at two different places, it placed a call to establish the channel and after that connected one computer to each end of that single connection.

The D.t was at the same time struggling with the unavoidable danger of this single-channel method for connecting systems.

By early 1970, the researchers used this networking model to connect set of four computers-one each at the University of California, SRI and the University of Utah.

In the midst of the several years, the researchers in the academic gathering connected to this network and shared the technological achievements that lead to the increase in the speed and efficiency with which the network must be functioned. At the same time, researchers in other academic institutes were creating their own particular networks using comparative technologies.

In spite of the way that the objectives of the D.D network were still to have summon over weapons systems and transfer research files, other uses of this tremendous network began to appear after the early 1970s.

By 1972, a researcher developed a project that could transfer the messages over the network users in the military and education research communities keeping on developing. A considerable part of these newly existed candidates used the networking technology to send and receive files to get the access to computers. The network software included two devices for performing these demonstrations.

In 1979, a gathering of students and programmers started term called as Usenet, which was an abbreviation for Users News Network. Usenet was permitting anyone who connects to the network to read and post articles on a variety of subjects. The Defence Department's networking software became more widely used as academic and research institutes understood the benefits of having a normal network. The explosion of personal computer use in the midst of that time likewise was helpful to people become comfortable with processing. In the late 1980s, these independent academic and research networks merged into one infrastructure – the Internet that connections today hundreds and a huge number of networks to one another.

1.13 Commercial Use of the Internet:

As PCs turned out to be more pragmatic, helpful, reasonable and accessible amid the 1980s, organizations progressively utilized them as a part of request to build their own particular inside systems. In spite of the fact that these systems included email programming that empowered the representatives to send messages business needed their workers to have the capacity to speak with individuals outside their corporate systems for advancing business? The Defence Department system and the majority of the other scholastic systems that had collaborated with it were accepting subsidizing from the National Science Foundation (NSF). The NSF was not allowing business system movement on its systems thus business swung to business email administration suppliers

to handle their email needs. Bigger firms made their own systems that utilized rented phone lines to interface handle workplaces to corporate central station.

In 1989, the NSF allowed two business email administrations, MCI Mail and CompuServe to set up constrained associations with the Internet for the sole motivation behind trading email transmissions with clients of the Internet. These associations allowed business endeavours to send email specifically to Internet addresses and allowed individuals from the examination and training groups on the Internet to send email straightforwardly to MCI Mail and CompuServe addresses. The NSF supported this restricted business utilization of the Internet as an administration that would basically profit the Internet's non-business application.

1.14 Growth of the Internet:

In 1991, the NSF further diminished the impediments and preclusions towards business operations began executing new stage of privatizing the Internet. The privatization of the Internet was finished in 1995, when the NSF turned over the operation of the fundamental Internet relationship with a gathering of privately owned businesses. The recently planned structure for the Internet depended on four Network Access Points (NAPs), each worked by a different association. These associations, which are called as system access suppliers, give Internet get to right direct to bigger customers and roundabout to littler firms through different associations, called Internet Service Providers (ISPs).

The Internet was a wonder that genuinely got access into a clueless world. The specialist who had been so through and through of the creation and development of the Internet basically acknowledged it as a piece of their new existing workplace. People outside the exploration gathering were to a great extent insensible of the potential offered by a considerable interconnected arrangement of PC systems.

Inside less than 30 years, the Internet became one of the most critical and noteworthy technological and social part of the new century. Over Millions of people are these days utilizing this complex, interconnected network of computers in houses or enterprises. These computers run different software packages. The computers are located in practically every nation of the world. Every year billions of dollars change hands over the Internet in exchange for a wide range of products and enterprises. Every one of this active action takes place with no central coordination point or control, which is especially interesting, given that the Internet began as a route for the military to keep up control while under assault.

The emergence of the Internet to business operations helped to increase the Internet's development significantly; however, there was another development that worked as one with the trend of commercialization of the Internet to goad its development. That development was the World Wide Web (WWW).

1.15 Advantages of E-commerce:

Some of the key advantages of using the Internet for business include the following:

1. 24 x 7 operations. Round-the-clock operation is an expensive recommendation where e-commerce has lowered this expense.
2. Global reach. The net being worldwide, reaching worldwide customers is as needs be easy on the net compared to the universe of traps.
3. Global nature of interacting with costumers: It is considerably cheaper to pull in new customers over the net; because of 24 x 7 operations and its worldwide accessibility. Through instruments of "push" technology, it is likewise possible to pick up customers' dedication with lower measure of investments.
4. An extended enterprise is easy to fabricate. In this day and age every association is a piece of the 'inter-connected economy'; you need to extend your enterprise the distance to your suppliers in that capacity and business partners, for example,

retailers and ultimately your end-users. The Internet facilitates you with an effective and often less unreasonable approach to extend your enterprise beyond the thin confines of your own association. Apparatuses like enterprise resource arranging (ERP), production network management (SCM) and customer relationship management (CRM), can easily be applied by the help of Internet, permitting astonishing efficiency in time needed to market, customer dedication, on-time delivery lastly gainfulness.

5. Disintermediation. Utilizing the Internet, the hole of way to deal with the customers and suppliers, has been fulfilled. Likewise, it helped in eliminating the number of levels and in the process, chopping down the expenses as a result
6. Improved customer service to your clients. It results in higher fulfillment and more sales.
7. Power to provide the 'best of both the universes'. It benefits the customary business side-by-side with the Internet devices.
8. A technology-based customer interface. In an e-commerce business era, customers conduct exchanges either as face-to-face or over the phone with store employees, account managers, or other respective departments. Interestingly, the customer interface in the electronic environment is a 'screen-to-face' interaction. This includes PC-based screens, ATM machines, PDAs, or other electronic facilities. From the operational prospective, these categories of devices play an essential responsibility on the enterprise to capture and represent the customer experience because there is typically zero chance for direct human involvement amid the operation. On the off chance that the interface is designed properly, the customer will have no need for a simultaneous or follow-up phone interaction. In this manner, the 'screen-to-customer' as a model of interface can possibly both increase sales and decrease sales and decrease costs too. As a truth, a number of innovative competitors are entering the e-commerce markets with arrangements that re introduce people into the process, for example, the service representatives available on demand for Web user. When the interface does not work, not just is the designed customer interface has both negative revenue and cost effects.

9. The customer controls the interaction. At the vast majority of the cases, the customer is in control amid screen-to-face interaction, in that the Web largely employs a 'self-service' model for overseeing commerce or group based operations. The customer controls the entire process, the time spent on different sites, the degree of price/item correlation, the people with whom he or she comes in contact and the decision about what to purchase. In a face-to-face interchange, the control can rest with either the buyer or seller or the group member. At the very least, the seller tries to influence the purchasing process by directing the potential buyer to different items or areas in the store, to overcome with the problems regarding price objections and reacting in real item to competitive offering. The virtual store can attempt to frame the customer experience with solely targeted advancements, reconfiguration of storefronts to reflect past search behavior, suggestions and advises based on previous behavior of other comparable potential customers, and access to proprietary data. However, the seller has less power in the online aspects due to the control and data streams that the online world puts in customer's grasp.
10. Knowledge of customer behavior. While the customer controls the interaction, the business has moment access to screen and track singular consumer behavior. Companies, through an outsider measurement firm, for example, Vivienne and Accrue, can track a large group of behaviors on websites visited, length of stays one site, page views on a site, contents of lists of things to get and shopping basket, purchases, monetary value of purchases, repeated behavior of purchases, conversion rates of guests who have completed exchanges and other metrics. This level of customer behavior checking, interestingly with following consumer attitudes, knowledge or behavior intentions, is impractical in the block and – mortar world. Armed with this data, companies can provide one-to-one customization of their offerings. Also, companies can powerfully distribute their storefronts on the Web to configure offerings to individual customers. In strategic aspects electronic retailers can welcome a user back by name. In more strategic terms, an online business can really position offers and merchandise in ways that uniquely appeal to specific customers.

11. Network economics. In data intensive industries, a key real battleground centers on the emergence of industry-standard items, services, components, as well as architecture. Network specification, as described by law of Metcalfe, can best be expressed as the circumstance where the value of an item or service rises as a resulting capacity of the number of other users who are utilizing the item. A great example is the fax machine of other people who receive the new technology. A key characteristic of network's economic is feedback, that is, as the installed base develops, more and more users are likely to embrace the technology because of the installed base. Numerous warehouses in the digital economy revolve around setting a standard, developing the installed base and attempting to 'secure' customers to the standard because of praise of exchanging expenses. This applies to both hardware (e.g. cable modems versus DSL lines) and software (e.g. MP3 versus streaming sound).

1.16 Progress of Electronic Commerce in India

In simple words, e-commerce is the process of selling the items on the Net. It encompasses the use of technology process of management practices that enhance authoritative competitiveness abilities and potentials through the strategic utilization of electronic data.

E-commerce needs radical changes in the:

- Marketing related process
- Sales related process
- Price related strategies
- Advertising and
- Promotional activities like battles.

Marketers have the power of understanding that valuable data can be gained from the customer online with least attempts and minimal effort which otherwise would have taken a great deal of time and significant portfolio investments.

The business world has been observing quick changes and development from the most recent decade and due to globalization, increased competition and technological advancements. Internet is basically responsible for such quick development. Associations today are designing and implementing new relationships with customers, conveyance, suppliers and partners.

As Kotler's genuinely said and we can discover it in India for all intents and purposes:

- Entire markets are disappearing as a result of newly existed technology and the innovative competitors
- Mass markets are converting into smaller scale markets.
- Shift of Power from the manufacturers to the retailers and
- Replacing of single channels with multiple dispersion channels.

"Change" is unavoidable actuality of the nature. What's more, there is no exception in the business moreover. The best way to pick up survival and development of associations is change or perish and E-commerce is the change happening today. E-commerce has created the concept of two way traffic Marketing. This is set to change the roles of small enterprises, retailers, manufacturers and media companies. The roles of retailers and manufacturers are rapidly reversing in E-commerce. Retailers will have an advantage over manufacturers since customer response can be monitored and evaluated. E-commerce has created a bridge to fulfil the gap between small and big enterprises,

since both have same platform of access to global audiences. The same is true in the area of media and advertisement where the balance of power between the two may basically change in the future. Small businesses will gain an increasing share of the international market. Till now, this was the exclusive role of the big players.

Information and exchange of money and goods are the two most important factors in globalization as a result of e-commerce. The second factor poses numerous problems unlike the first one because:

- Complexities of the rules and regulations will make the physical delivery of goods across continent difficult.
- Money Transaction in the situation of absence of a unique globally accepted currency.

There are the basic problems, but the other factors are also to be looked into before its implementation becomes a reality.

For Indian companies, getting into e-business, the problems are:

- The exchange of customer information
- Ability of area wise search
- Reducing the cost and
- Customer self-service, etc.

Companies rather not go for Business to Business (B2B) opportunities with the suppliers and other trade partners as one of the functions. It can be considered as drawback;

The rapid growth of B2C transactions is due to regulatory reforms, which includes:

- Change in the rules and regulations related to telecom
- Changes in laws pertaining to trade, commerce and financial systems.

Growth in e-commerce was estimated by OECD to go up from $500m to as much as $5 billion by 2001. The potential for cyber fraud has become a concern for all. It is the need of the hour to modify current platform of cyber laws.

Activities in cyberspace have made influence over other laws like insurance law, data protection law, securities transaction law, tax law, competition law etc.

India has the ancient tradition of basing its development on human related knowledge.

1.17 E-Commerce Business in India (as per ICRA):

Credit rating agency ICRA has predicted a more than 50 fold increase in e-commerce business in India. Some of the projections they have made are as under:

Table 2 - ICRA Projections about increase in E-Commerce business in India

Projections	Year	Rs.
i) E-commerce business in India	2015	870.00 bn
ii) Online ad-spend (at present)	2015	540.00 mn
iii) Online ad-spend	2015	860.00 mn
iv) E-commerce business in India (at present)	2005	4.70 bn
v) B2B E-commerce turnover	2015	232.80 bn
vi) B2B E-commerce turnover (at present)	2005	4.10 bn
vii) B2C (Business to Consumer) turnover	2015	18.80 bn
viii) B2C (Business to Consumer) turnover at present	2005	0.50 bn

E-commerce would take a larger hold of service oriented Indian industries such as:

- Banking
- Leisure and Travel and
- literacy

1.18 Two Faces of Electronic Commerce:

The two faces of e-commerce can be known as:

a) seller's prospective and
b) Buyer's prospective

Considering above faces we can say that E-commerce software has numerous facets:

i. There are arrangement providers for both above sides.

ii. Internet-based preparing exchanges or web market place sites is another emerging type of e-commerce.

Internet-based procurement is a closed circle business process that goes well beyond requisitioning processes for indirect materials, to optimize all purchases.

Internet-based procurement software or instruments significant type of purchase side e-commerce software often reach out to web market places to ensure products, market places essentially operate as services, not as software applications licensed and implement by every enterprise. The main way the manufacturers make sense out of the mixture of e-commerce offerings is to set market places aside, understand the two essential categories of e-commerce arrangements and analyze how manufacturers have functioned and productivity would help. Notwithstanding online selling, e-commerce can bring wide channel management capabilities on the sell side and also the purchase side. Companies are observing that Internet-based supply merges streamlined processes with the capacity to gather strategic sourcing data.

Sell Side: B2B e-commerce arrangement is used alongside an extranet worked in the association. Click Commerce provides core capabilities, for example, order management and an online list furthermore the capacity to integrate with enterprise resource arranging known as ERP systems. It is billed as an enterprise channel management arrangement because it features a wide range of utilization components that permit manufacturer to manage relationships with its dealing channel through the Internet.

The organization's extensive dealer channel sells and services the required equipment. Dealers additionally order spare parts needed for repair which was previously on phone and fax as it were. The primary phase of the extranet focused on taking after capacities:

- Spare parts order
- Order following (second phase of the extranet was on)
- Warranty look-ups (online)
- Field service; technicians with wireless extranet connections that will leverage that field service management all through the web.

The back-end enterprise system was of monetary applications

Snap commerce's e-arrangements are sold under a bundled fixed-fee arrangement for software and services.

Customers have real-time data about:

a) Part accessibility
b) Price accessibility and
c) Latest Status of their orders

Purchase side E-procurement: The quick benefit from E-commerce application could be got from the lowest hanging natural product i.e., from Internet-based procurement, or e-procurement systems. These applications regularly use mechanisms of work process and user-defined purchasing rules to move a purchase request in an association and yield to suppliers or market places sites through the Web. Some of e-procurement practices have

even business some software that analyses trends and supplier performance. Some of the best-of-breed vendors for e-procurement application are: People soft

- Commerce-one
- Mountain view
- Pleasanton
- Newtown square
- Ariba
- Walnut creek (California)
- Oracle and
- SAP

1.19 Overview of Telecom Sector

Telecom infrastructure in India is expected to increase at a compound yearly development rate (CAGR) of 20 per cent amid 2008-15 to reach 571,000 towers in 2015.India's tele-density has witnessed a substantial growth from 4% in March 2001 to around 76% by the end of March 2012.

The mobile subscriber base increased 0.21 percent to 876.72 million in August 2013 from 874.88 million in July 2013. As per the report released by Telecom Regulatory Authority of India (TRAI), Airtel was added with 833,852 subscribers, Idea Cellular with 752,107, and Reliance Communications with 510,682 subscribers in the year 2013.

It was additionally witnessed that the share of urban wireless subscribers had declined from 60.10 percent to 59.98 percent. In the other hand, the share of country wireless subscribers had increased from 39.90 percent to 40.02 percent.

The Telecom Sector can be extensively classified into fixed line Telephony and Mobile phones. The significant players include BSNL, MTNL, VSNL, Vodafone, Idea cellular, Airtel, Reliance, Tata, Hutch, MTS, Uninor, Reliance, and Loop in the mobile

segment. The general population and the private players share the fixed line and the mobile segments. General society sector's control is more than 60 percent of the market which is considerable.

The latest in the technology being the GPRS-enabled multimedia messaging, Internet surfing, and mobile-commerce. The abundantly awaited 4G mobile technology has already entered the Indian telecom market. The GSM, CDMA and WLL service providers are all redesigning themselves to provide 4G mobile services too.

The India's top 10 telecom service providers in India in terms of revenue.

- **Bharti Airtel**

Bharti Airtel is the market leader in the world of telecom service providers. The organization has a design of four different strategic business units which include the mobile, tele media, enterprise and digital TV. The organization has with operations in 18 countries with an impression covering 1.8 billion people. Bharti Airtel added 5.10 lakh subscribers to take its base to 20.97crores toward the end of July, 2014. Its market share in India is highest with a value of 28.41%.

Airtel is the world's third largest telecom organization in terms of the subscribers, with over 275 million subscribers crosswise over 20 countries starting July 2013. It is the largest cellular service provider in India, with 192.22 million subscribers as of August 2013.

- **Idea Cellular**

Idea Cellular is an Aditya Birla Group company. This is the first multinational corporation in India. The revenue generated by the service provider as on FY 2013 is approximately $4 billion. With a subscriber base of over 121 million in FY 2013, Idea is India's third largest mobile operator. Idea positions among the main 10 nation operators on the planet with an activity of over 1.5 billion minutes a day.

Idea has been a pioneer in introducing customized service offerings for different set of customers as per their expectations. Ideas cellular is has the first mover advantage in introducing innovative value added services in the Indian.

- **Vodafone**

Vodafone Group plc is a British multinational telecommunications organization. It is the world's second largest mobile telecommunications organization measured by both subscribers and 2013 revenues. The aggregate numbers of subscribers it holds is434 million subscribers starting 31 March 2014.

Vodafone claims and operates networks in 21 countries and has partner networks in over 40 extra countries. Its Vodafone Global Enterprise division provides telecommunications and IT services to corporate clients in over 65 countries.

- **Reliance Communications**

Reliance Communications Ltd is commonly known as RCOM. RCOM ranks second in the list of telecom service providers. The company was established in the year 2004. The subscribers are over 150 million.

- **Bharat Sanchar Nigam Limited (BSNL)**

Bharat Sanchar Nigam Limited is an Indian owned telecommunications company. The headquarters are in New Delhi, India. The company has come to commencement on 15thSeptember 2000.

BSNL is the largest provider of fixed line telephony, largest broadband services provider with more than 60% Market share. It is the fourth largest mobile service provider in India. BSNL is India's oldest and largest Telecom service provider. The subscriber base is around 117 million as of January 2014.

- **Mahanagar Telephone Nigam Limited (MTNL)**

MTNL is a state-owned telecommunications service provider in the metro cities of Mumbai and New Delhi in India and in the island country of Mauritius in Africa. The stake of the organization in MTNL is 100%.MTNL has been losing revenue and market share heavily due huge amount of competition in the Indian telecom sector.

- **Tata Tele Services**

Tata Communications Limited, together with its Tata Communications backup, is a worldwide provider of managed correspondences services to multi-national enterprises and service providers. Tata Communication Limited likewise provides managed enterprise services. They include rapid network connections, worldwide MPLS virtual private networks (VPNs), the world's largest network of telepresence services.

- **Aircel**

Aircel is an Indian mobile network operator headquartered in Chennai, which offers various telecom services such as voice and data services in the form of post-paid and prepaid plans, 2G and 3G services. In 2006, Aircel was acquired by Malaysia's biggest integrated interchanges service provider Maxis, India's fifth largest GSM mobile service provider and seventh largest mobile service provider. The subscriber base is over 65.1 million.

- **Loop**

Loop Mobile, called as LOOP was previously known as BPL Mobile, was an Indian mobile network operator. On 18 February 2014, Loop Mobile was acquired with Bharati Airtel for 700crore (US$110 million).

- **Videocon**

Videocon formerly Videocon Mobile Services, is an Indian cellular service provider that is an auxiliary of Videocon Industries, and has headquartered at Haryana. Videocon launched commercial services just in 11 out of the 18 circles it held licenses in. Supreme Court of India cancelled 122 licenses issued by the Indian Government in 2008, including 21 licenses belonging to Videocon. In the 2012 spectrum closeout, Videocon won back licenses in 6 circles.

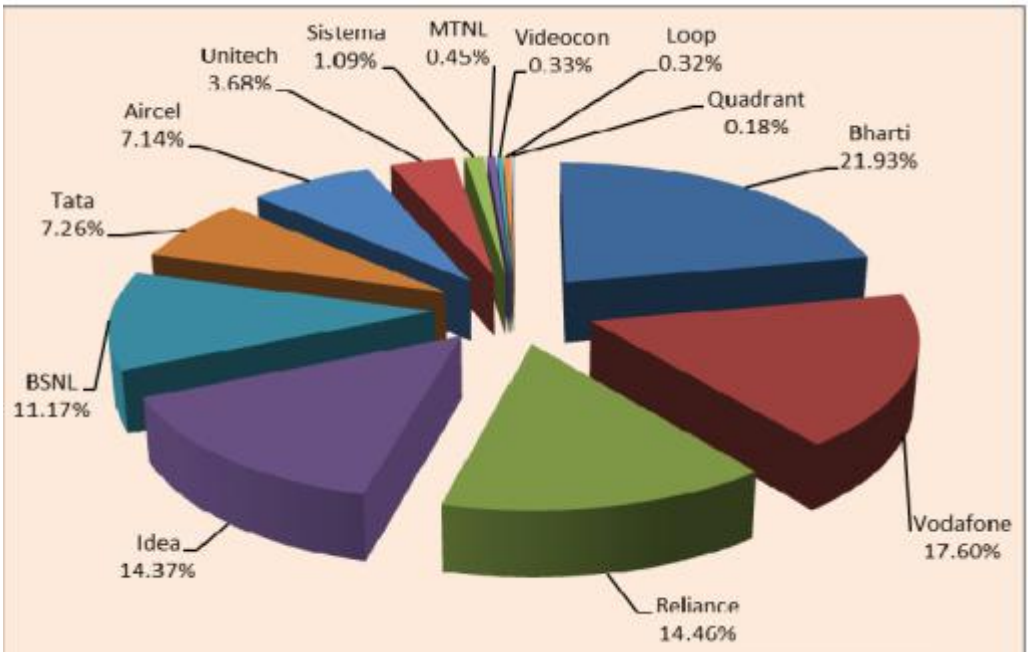


Figure 5 - Market share

Source: TRAI Source: Indian Brand equity foundation.

1.20 Growth of Telecom Sector in India:

The Indian Telecom sector is the second-largest telecommunications market in the world, with 898 million subscribers referring to March 2013 statement. The sector's revenue grew by 13.4 per cent to reach US$ 64.1 billion in FY12. The National Telecom

Policy intends to make India competitive in the Global markets via growth in the sector through foreign direct investments (FDI). The policy tries for reaching out to every person across the Globe through innovative service offerings with appropriate Global standards.

This industry is one of the most rapidly growing in the World, holding the tele-density of 36.98 percent. In today's information age, there is a significant role of the Telecom Industry. Telecom sector is known as one of the major contributors towards the Economic and the Industrial growth. Referred to Wireless cellular services, there has been a rapid change in the communication way. The Indian telecommunication sector has observed a major turnaround after the announcement of NTP 1994 and subsequently leader-emphasize and carried forward under NTP 1999. The sector has seen a substantial growth in the last decade and is poised to take a big leap in the near future. By the end of FY 2015, it was forecasted that there be approximately 90 to 95 percent of users of mobile phones in the Western countries alone. The technology has allowed customers to use the Smart phones and tablets for transactions, gaming, downloading apps, chatting, all of this at a click away. The emergence of Smart phones and Tablets has indeed revolutionized the customers and has brought in massive growth in the Sector.

The Indian telecom sector is the second largest wireless market in the world as well with total number of subscribers of wire line being 30.21% (in million), while the total number to subscribers for wireless are 867.8% (in million). The monthly growth in the wireless segment is 0.77% and – 0.32% in the wire line segment. The overall tele density in the wireless segment is 70.85% & 2.47% in the wire line segment.

Table 3 - Overall Subscriber base & tele density

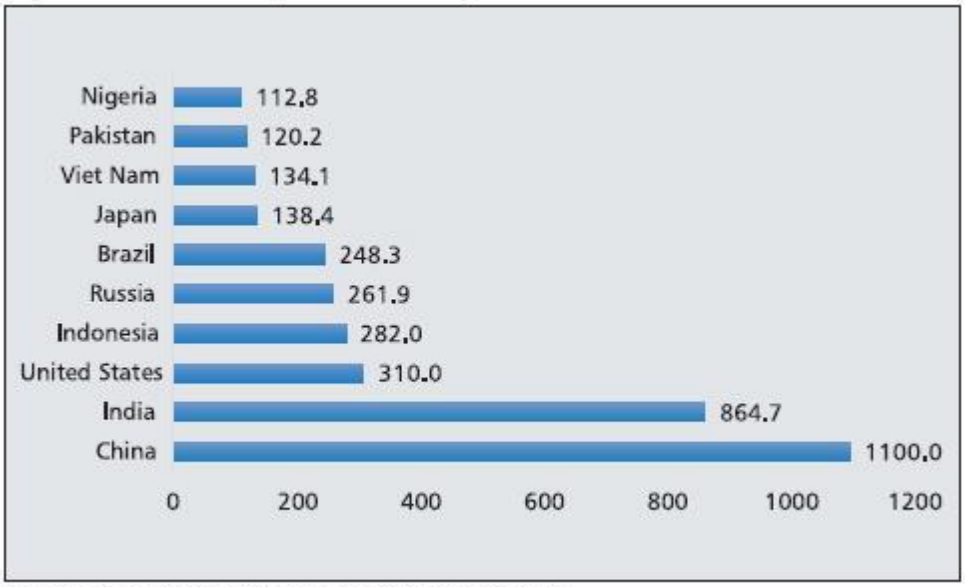
Overall subscriber base and Tele density	In Millions/%		In Millions/%
Particulars	**Wireless**	**Wire line**	**Total**
Total subscribers in Millions	867.8	30.21	898
Total Net monthly additions	6.14	-0.15	6
Monthly Growth	0.71	-0.49	0.67
Urban Subscribers	523.3	23.5	548.8
Urban Subscribers Net Monthly Addition	4.02	-0.08	3.94
Monthly Growth	0.77	-0.32	-0.72
Rural subscribers	342.5	6.71	349.22
Rural Subscribers Net Monthly Addition	2.13	-0.07	2.16
Monthly Growth	0.63	-1.07	0.59
Overall tele density	70.85	2.47	73.32
Urban tele density	140.67	6.29	146.96
Rural tele density	40.23	0.79	41.02
Share of urban subscribers	60.53	77.78	61.11
Share of rural subscribers	39.47	22.22	38.89

Source: trai.gov.in

1.21 The Global Scenario of Telecom Sector:

The Global Telecom industry is going to develop at a CAGR of 9.1 percent over the period 2012-2016. The key components adding to the market development is the overwhelming demand for transfer speed in wireless networks. Global Telecom industry also is assured to witness green technology as well. The mobile subscribers in the world are approximately 4.6 billion. It is predicted by TRAI that by 2020, the number of mobile subscribers would be around 6 billion, and the access to internet through mobile would be around 4.7 billion.

The digital world is where the World is going to and would have the entire generations grow with this technology by the year 2020. We have the Generation X and the Generation Y concepts familiar at the current time. There would be a new generation budding up by 2020 called the generation C which stands for Communication, Connect, and Change. This would be a different demographic group rather than all others. The year 2020 will have maximum number of their employees at bigger corporations working on project groups.



Source: International Telecommunication Union (ITU)

Figure 6 - Top Ten Countries as per mobile telephone subscribers

1.22 Global scenario of the Telecom Consumer in 2020:

Rapid advancement in terms of technology will re-structure the Telecom sector by 2020. This will impact the lifestyle of the consumers as well as costumers. Higher affordability, better Communication will be reflected through the new generation called as generation C. On the flip side, it is estimated that majority of the global population of around 55.9% will still remain offline. This is not including the low income groups.

As per predictions the Enterprise Mobility Will Become $140 Billion Market by 2020 and the App Market is expected to become as large as the Internet by 2020.Customer's ability to access Internet through mobile phones will be rapidly grown. The current worldwide mobile application download is estimated to grow up to 18.7 billion. As per National Association of Software and Services Companies (Masco), a report says that the worldwide authoritative portability market will rake in $140 billion a

year by 2020. This means 15% yearly development in revenue for nearly the next seven years.

1.23 The Indian Scenario of Telecom Sector:

The Indian telecom sector has been witnessing outstanding growth over the past ten years. The main affecting reasons to these include the increased network coverage, tariff rates, and installation of towers for support systems are all the aspects going about as impetuses for the development in subscriber base. The development story and the potential have additionally served to pull in newer players in the business; as a result the intensity of competition has kept increasing. Internet subscribers in India grew to 164.81 million as of March 31, 2013, with upwards of seven out of eight net users in the nation accessing the services by means of their mobile phones, as indicated by telecom regulator TRAI.

The GSM incumbents which for the most part comprise of Bharti Airtel, Vodafone and Idea Cellular have together crossed over 70 per cent in revenue market share, with a 99.6 per cent share of the incremental revenues amid the FY June 2013 quarter, as per the latest figures released by TRAI. These incremental revenues are because of the Service offerings from various Telecom service providers that propel customers to pay more on the desired Services and this in a way has its impact on Customer satisfaction. A thorough review of Literature and interactions with Management in the Telecom Sectors and the Services Sectors has helped to determine the Service offerings and the determinants of Customer satisfaction in the Post-paid Services.

The new subscribers for GSM in India in FY 2013 were approximately 1.49 million as on July 2013, thereby making the total subscribers of GSM approximately 372.63 million.

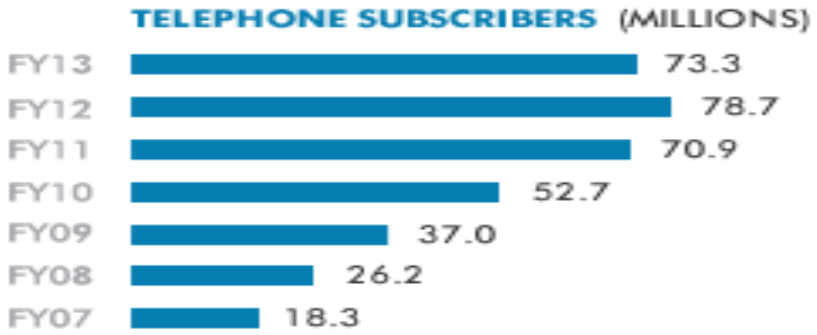


Figure 7 - Telephone subscribers in India (in millions)

Source: trai.gov.in

The total telephone subscription In March 2013 stood close to 898.02 million, while density was at 73.3.

The Telecom Industry in India is geared up to next the leap forward with the advancements taking place in the sector like the 3G, 4G services which are incubated by the private service operators.

The Telecom sector has made the contribution towards the Economic development of the Nation over a period. The Indian Telecom sector has come up successfully, registering almost 35 percent growth over the past decade. As per the study by the World Bank, an increase in the Telecom sector by merely 1 percent leads to increase in the per capita GDP by around $200.

The intense competition and technological advancements in mobile handsets devices have created the quick development in this sector. The share of the telecom services industry in the aggregate GDP of India has been on the rise amid the previous few years (commitment to GDP went up from 3.5% in 2011 to 3.9% in 2013)

Table 4 - Share of Telecom sector in India's GDP (%)

Sr.No.	Particulars	2011	2012	2013
1	Gross revenues (in Rs Billion)	1,717.19	1,954.42	2,125.92
2	GDP at factor cost (in Rs Billion)	49,370.06	52,435.82	55,054.37
3	Contribution of Telecom sector to GDP (%)	3.5	3.7	3.9

Source: TRAI, Economic Survey, 2013.

In the year 2000, is witnessed that the Telecom service providers were desperate looking out for options to lower down the load of the debts in their operations. The installation of the towers for the operations was proving expensive at Rs.20-40 lakh. Hence it became imperative for telecom service providers to go in for an option of tower sharing for providing the customers with uninterrupted service.

1.24 Services in Telecom Sector

Services are defined to be in joint with the nature, since there is difference in the point of consumption from the point where it is carried by the Service providers. Once cannot carry the Services with them, unlike tangible Products. Service can only be experienced and the feedback is given which helps to measure the quality of the Service

delivered. Therefore the main aspect over here is the feedback based on which there can be developments done in the ways that Services are provided.

Telecom services are intangible in nature since they lack physical evidences; hence their presence is created through physical evidence. Physical evidence is created through concepts like banners, posters, danglers, Visual merchandising, where the customer gets a complete feel of the Service. They are perishable in nature. This means that the experience that one gets for a Service at one time cannot be the same for the next time.

1.24.1 The Basic Services

• The basic services include fixed wire line and wireless in local loop (WLL-fixed).

• Fixed wire line services carry the share of 88 percent and is called as the major market leader.

1.24.2 Radio Paging Services: the services were launched in India by 1995.These services, however, could not stay in the market for long since it had intense competition from the cellular services. Also the lack of appropriate interpretation leaded to miscommunication.

1.24.3 Short Message Service (**SMS**): Short Message Service is a text messaging service component of phone, Web, or mobile correspondence systems. It as a rule uses standardized correspondences conventions to permit fixed or mobile devices to transfer short text messages. SMS was the most ordinarily used information application. The active users for SMS are 3.5 billion active users, or around 80% of all mobile phone subscribers toward the end of 2014.

1.24.4 Service Offerings: Service offerings are defined as different set of service elements that are offered to the customer from the service provider.

The Service offerings that evolved over a period

- Better coverage
- More VAS
- Less call drop
- Well-equipped customer care personnel
- No congestion in Network
- Transparency in Billing
- Low Tariffs
- Voice clarity
- Per paisa calling
- New and better schemes, offers
- Reduced rate on long distance calling

These Service offerings determine the level at which the customer is either satisfied or dissatisfied with the service provided by the service provider. The set of customer experiences that is built in the tenure of association of the customer with the service provider is the resultant to determine the customer satisfaction.

The determinants of customer satisfaction as per literature review and interactions with the personal in the telecom sectors lead to the determinants of customer satisfaction.

CHAPTER 2

LITERATURE REVIEW

CONTENTS OF THE CHAPTER

2.1. Introduction

2.2. Review of Ph.D. Thesis

2.3. Review of Research Paper

2.4. Books Review

2.1. Introduction

The review of literature was carried out on studies focusing on Telecom sector, Mobile Customer satisfaction, Service quality, branded products, E-marketing, service offerings and Customer experience management related to the Telecom Sector. This chapter highlights the conceptual discussions and the literature review.

2.2. Review of Ph.D. Thesis

The study conducted and titled as: "Effective Elements E-Marketing Strategy in Tourism Industry" (Case Study Germany and Iran Airlines, Tour operator and chain Hotels). Since The tourism industry is known as the one of the most competitive business in the world this research has given special extension to tourism industry, which is in close correlation with consumers and their primary needs and wants, which continuously are evaluating over the times. It targets to show various chances to expand the company's e-marketing strategy and successful performance e-marketing strategy with recognition of the effective elements and their significance during the process of strategy designing and implementation. This thesis focuses on e-marketing sand its effectiveness in tourism industry (Mousavi, 2012).

In doctorial research titled "Modeling conversions in Online Advertising", the study has investigated online purchasers and how to predict the sales in such context.. Online advertising practitioners have developed several models for sale forecasting. Moreover, online advertising produce a huge amount of data, long the area of statistician. This can be possible by the help of marketing, statistics as well as a tool like computer science. Statisticians have been used for the modeling of response to advertising through a partial frame. The study had been conducted to investigate a data visualization model that permits online advertising histories to be compared easily and also presented a

framework to use exiting clustering algorithms to better understand the path to conversion taken by consumers (chandler-Prpeinjak, 2010).

The researcher in his Ph. D. thesis titled as " Adoption and Diffusion of Internet and Web Technologies in Hotel Marketing", A study of hotels in Thailand and Australia, The main objective of the research was to develop a initial or basic model for the successful adoption and diffusion of IWMA by Thai and Australian hotels while investigating the affecting factors the adoption of IWMA, the analysis of hotel Web sites, a questionnaire survey of hotels and series of confirming interviews of hotel managers were employed. The findings from the research shows that Australian hotel & web sites provided a greater variety of options, features and information that met customer's needs than Thai hotel. Internal factors with regard to size of hotel and organizational readiness, technological innovation, perceive benefits and environmental in view to customer's power. . (Khemthong, 2007)

In his Ph.D. study discusses on "the aspect of Service performance and customer satisfaction in Telecom sectors". The Service performance which specifically caters to the requirements of the customer from time to time relates to the satisfaction of customers. The aspect of Service performance is of vital significance since it would not be desirable to fail in providing services and the indulging in service recovery aspects, which actually kills the motivation level of the customer. The Service from the Service personnel is yet another important aspect which cannot be ignored. Since these are the people who are the face of the service firms and represents the firm. Therefore the perception that the customer forms totally relies on these service personnel. (Khan, 2013)

In his research focuses customer satisfaction is considered to be a significant factor since that creates the sense of belongingness amongst customers. If the organization providing the services completely understands the needs of the customers and addresses these needs appropriately through effective services that is the state which the customers expects to be in. This state here is determined as Customer satisfaction. Price and customer service are the two factors identified to be the important factors

determining customer satisfaction. Customer service came out to be the most vital factor identified for attaining customer satisfaction

Once the primary needs of the customers are addressed the secondary factors like network issues and congestion and related issues are to be addressed by the service provider. Since the combination of all of the services together is what the customer will be consuming in form of services. Customers were of the opinion that the current service providers were good at tariff rates but need to improve on the coverage quality. Customer satisfaction can be developed by better relations with the end consumer. Relationship Marketing therefore is the latest concept that is discussed in service organizations. Relationship marketing has a long route in the services marketing field and it has no leaps bounds to attain the level of customer satisfaction (Hanif, 2010).

In his Ph.D. **t**he Indian Customer Satisfaction Index Model, (ACSI) model were used to understand the customer satisfaction level in the current research. The ACSI model comprises of three questions which imbibe the entire questionnaire revolving around the objective of the study.

The calculation through ACSI model determined the satisfaction level of customers for different service providers. Overall customer satisfaction is the resultant outcome, which is termed as OCS.

The three ACSI core questions revolve around the aspects of Expectation Disconfirmation (ED), and Desire Disconfirmation (DD) and Overall customer satisfaction.

The empirical findings stated that the expectations of the customers in Macedonia were far more than what the service providers were offering, which resulted in dissatisfied customers.

There was a clear mismatch in the perception of the service providers and the perception of the customer in terms of the service offerings, because of which there were many misinterpretations about the services.

Management here needs to out rightly work on clearly understanding the customers from their perspective so that their needs are addressed and there is less of dissatisfaction amongst the customers. (Angelova, 2011)

2.3. Review of Research Papers:

Standardization, standards and Online Advertising" this paper examines how the RECALL of banner advertising changed with the introduction of new standards, regularizing their format. The media industry is revolutionized by technological transformation and automation of digital content delivery. Increased reliance on automation has also led to standardization of content delivery formats (Tucker, 2011).

In research paper titled "an Empirical-Based Model for Examine E-purchasing Intention in Electronic commerce at Developing Countries" states that the development of e-commerce has made it understandable that customer's behavior and buying behavior in electronic commerce bazaar has change and psychoanalysis of this behavior is a key aspect for the success of e-business. However, little research has empirically tested customer's e-purchase behavior. Furthermore, most e-commerce literature has focused on developed countries, while the worldwide growth of e-commerce has needed to extend this research to other developing countries with different cultures. This was an attempt by the author to develop a mode (Ahmed, 2011).

Research paper titled "the effectiveness of Online Advertising in purchase Decision: Liking, Recall and Click" the authors had discussed about how the internet has burst outwit a base on the turf of business. The effect of internet via online advertising has not only touched every aspect and players of business landscape. Internet advertising is flourishing as the cost is low and reach is high. Hence the key to attract consumers in today's era is e-advertising (Lim, 2011).

The author examines the effect of banner ad repetition level, same and varying banner ad executions and consumer navigation orientation on behavioral response and

memory based outcomes recall and recognition. Online advertisers change banner ad carrying out to overcome negative returns from duplication, improve click rates and communication out-comes. Advertisers do not pay for these ads based on Impressions or click-through. Instead, premium display ads are billed similar to traditional print ads: the advertisers buy space on the website and pay a fee for that space. These banner ads can be expensive if they are located on prime portal (Chatterjee, 2005).

In his paper titled " Exploring the determinants of E-commerce Usage in the Hotel Industry in Thailand: An empirical Study" opined that the use of internet communication in day today transaction is going high throughout world but it also depends upon the population of internet users and the organizations opting for-commerce. This study was an attempt to investigate the impact of various factors on the internet usage rate. The factors are classified into three broad groups: factors associated with the location of the enterprise, internal factors of the enterprise, and technological factors, an empirical study was conducted in 95 hotels in seven location in Thailand is used to assess the impact of the factors. Like the application of e-commerce to the firms. Most importantly, however, e-commerce just be viewed as an integral part strategy commerce is considered an "add on" activity like a Diwali advertising campaign. Which is not? E-business has the potential to have remarkable impact on business functions, and the organizations should plan ahead about resources like space, warehousing financing, labor, production capacity, warehouse space to serve new markets and customers (Islam, 2005).

"Impact of E-commerce on Marketing", in his paper he has crafted the growing trend of e-commerce and the changing landscape of marketing through web is also positively affected by different models of information technologies. Internet has provided new channels of communication. It can create cost effective relationships with customers in sales, marketing and CRM. Companies can use web to provide information, service and support. It also creates positive interaction and encourages repeat purchases. Online shopping allows customers to sit at home and purchases their products or services from any part of the world (Reddy, 2003).

In this research it is found that as the competition in telecom sector intensified, service providers look for new measures to innovate and to attract and return customers thereby, trying to curb the churn ratio to a great extent. Some of the initiatives like celebrity endorsements, loyalty rewards, discounts and offers and low tariffs are adopted to enhance the customer's satisfaction (Chaturvedi, 2005).

The study States that the mobiles telecommunication technology is witnessing a rapid growth and holds tremendous potential in the world as more and more individuals want to remain connected with higher demand for internet, browsing, gaming and other optimum solution (Chhiber, 2008).

Technologies of mobile telecommunication and internet are ready to set the contours of further technological progress. The most recent initiatives aim at the convergence of voice and data received from multiple sources both web based and real time video streams in mobile handset and calling card have virtual presence feasible pin each area(World Telecomunication Developement Report, 2002).

The communications industry is escalated by the changes brought in by the advent of the tremendous success of the infrastructure development and the technologies. There exists intense competition in the telephony business. Long-distance calling have witnessed continuous decreases for two decades as new carries sought to capture greater and market shear. Local carrier has also observed the competition for interconnecting the networks of large corporate customers and for providing them access to long-distance services (Walters, 2003).

State that the catalyst for Indian mobile operators in the future will certainly lead to increased marketing expenditure. This paves way for offering best of the deals to the customers like extra talk time and reduced tariffs. This further helps in customer acquisition and customer's retention (Business and Economy , 2005).

The study focuses on the capacity of Global Telecom companies to maximize the efficiency of the factors of Productivity. The inputs of productive factors comprises of several factors like employees, expenditures, investments, traffic of fixed phones, etc. It

is observed off late that service firms spend less on the conventional marketing expenses and more on investments. With this study the Telecom organizations will modify and develop their strategies in order to retain the market share.

Evolution of Telecommunication sector and effect that it has on marketing, forces the service firms to certain aspects which include:

1) Developing mass customers
2) Reducing Price levels
3) Channel management
4) Brand building(Prachalias, 2009)

Mobile services have a very high and positive impact on Nigeria. The technology which enables one to get connected so rapidly anywhere, anytime is bringing the Social activities together in the Country. The subscription of mobile services here is 73m in 2009 and is forecasted to surpass 125m by 2014. The industry has fetched in adequate investment thereby increasing the employability level of Nigerians.

The reports by World Bank and World Economic Forum state the fact that the Economic development of the country relies on the way the ICT has developed in that country. This is the reason why Economic and Private Enterprises flourish. ICT makes it possible for the developing countries to enter into the World's economy in the simplest ways (Pyramid Research, 2010).

The study examines the trends that have set in the field of telecommunication. These trends include the Value added services, Internet access, browsing Gaming and Apps and other facilities that customers now are keen for. The mere presence of Voice and Broadband are now losing its significance and there is more importance given to other series.

Some innovative aspects to be included the following would add value to the end user.

1) Location based services
2) M2M, Communication machine to machine, for health, energy, news, logistics and any such issues.
3) Cloud services
4) Social networking (Biswaji, 2011).

2.4. Books Review

"Marketing Management' this reference book is divided into nine parts. Part I is entitled marketing in new perspective, fundamentals of marketing definitions of marketing some selected is as follow.

- Marketing is primarily concerned with the problem of profitability disposing what is produced.
- Marketing is the economic process by which goods and services are exchanged between the marker and the user, and their values determined in terms of money prices.
- Marketing is the delivery of a standard of living society in this part marketing is described as an art, a science, a system, a Business function. A Practice, A process and a relationship.

In other parts of book contains marketing environment in India, marketing strategies, marketing research and marketing information rural marketing in India-The changing picture (Namakumari).

'Marketing Research-tools and techniques': the reference book is divided in to four parts. Part I has entitled, introduction, Definition, Planning of marketing research etc. "marketing research is one of the most useful tools in business, and business. It is the way in which organization find out what their customers and potentials customer need, want and care about Part Ii contains data collection methods, sampling, questionnaires and topic guides, qualitative and quantitative research Part III contains analysis of data,

reporting and presentation and Part IV explained marketing research applications instead of the above contents- the book provides a balance between theoretical and practical side of marketing research. It included real research tools and examples of poor or mishandled research practice. Case studies in marketing research are also given in the book (Bradley).

'Online marketing a customer-led approach". The book is intended to provide a stimulating insight in to the recent development, and their origins, in online marketing practice. It considers the progressive changes in one line practices that have occurred during its short and turbulent history. It explores the connection between human and technology and how beneficial relationship can prosper utilizing the internet and other media. Marketing is about satisfying customer but a changing emphasis from a transactional to are national approach has emerged and been facilitated by database technologies.

The book provides the marketer with necessary information about to converse with IT and internet specialists. It blends relevant and contemporary academic research, practitioner observations and leading exemplars from internet practice with web link. The book contents are with three specific elements i.e. 4P's communication model, legal advice to marketer and case studies Chapter I, II and III provide an overview of internet history, new marketing considerations and the strategic online planning process. Chapter IV provides essential knowledge and skill relating to online marketing research and buyers (Esen, 2007).

The book is divided in to four parts. Part I contains meaning of E-Marketing, past present and future of E-marketing, strategy and plan of e-marketing. Part II contents opportunities, ethical and legal issues part III abutted e-marketing research, consumer behavior online and part IV contents the online offer, the online value, and internet for distribution, E-marketing communication and customer relationship management. It explains some new terminology and highly recommends that marketers learn a bit about the technology behind the internet, something most of us are not drawn to naturally. It attempts to educate marketers gently in important technology issues showing the

relevance of each concept. It describes e-marketing practices I UUSA but it also takes a global perspective I describing market development in both emerging and developed nations (Frost, 2013).

The book studied the new models of communication introduced in various cities of the country. Cellular Mobile Phones, Radio Paging, E-mail, Voice-mail, Video, Text and Video-Conferencing now are widely operating in many cities and are considered as a boon to business and industry. Value- added services, access to Internet and Introduction of Integrated Service Digital Network as well as so many other operational functions are being introduced in various cities, towns and villages in the country (Sundram, 2004).

The book has critically analyzed the performance of Indian Telecom Industry which is based on quantities more than revenues. Assuming that The Indian consumer is too price concerned. Various macro level factors like high GDP growth, rising income levels, booming literacy and growing urbanization have contributed towards tremendous development of this sector. The author believes that the instrument that will connect these things together and converts the mobile revolution to the masses will be 3 Generation (3G) services (P.T.Joseph, 2012).

CHAPTER 3

RESEARCH METHODOLOGY

CONTENTS OF THE CHAPTER

3.1. Methodological Approach

The way how payments are made these days have changed dramatically. The payment method has transformed from cash payments to Electronic Payments to mobile payments. The penetration of mobile technology in India has proved to be a boon to mobile purchase and payments. Addition to the penetration scene, composition Indian population is also responsible for the quick transformation. Demographic profile of India also supports the transformation. Young India, Digital India and other such governmental schemes have also boosted the growth of the sector and thus changed the way how transactions take place.

Earlier, when mobile technology was not so developed, most of the transactions happened online. There were various websites where people could buy and sell products. Sellers had developed their own websites to undertake a transaction. Banking websites were linked and the payment was done through the payment gateways. Today, however, though all these avenues are still available, most of the companies have developed their mobile tools as well. Various examples such as Flipkart & Amazon (Selling Products, more than 81000 variety), Ola (Cab Service), Freecharge (Mobile recharge Service), RedBus.in (Online Bus Ticket booking), IRCTC (Railway booking), mahadiscom.com (Payment of Electricity Bills), Bookmyshow.com (booking movie tickets), BigBasket.com (purchasing grocery), and so many others have developed their own mobile applications so that people can order immediately without going to internet café. Today, people have started giving more preferences to convenience and thus the change can be seen clearly.

But at the same time, it is also important to understand that there are various risks associated with the transaction. Since, people share their confidential information for successful completion of the transaction; it must be assured that such data remains safe. It is a general observation that people have various perceptions regarding safety of the confidential data. Some have agreed that the data doesn't really remain safe and hence, they avoid undertaking any e-commerce transaction using mobile phones. On the other

hand, some have assumed that the sellers must have thought about the safety of the data and thus they take safety aspect granted. Such people prefer to undertake all the transactions online or on mobile. They do not care about safety issue. Some people are concerned about the safety of information but the level of convenience they get in undertaking a mobile transaction is much more than their concern about safety of data. Hence, they too prefer to undertake transaction using mobile phones.

There are various reasons why mobile phones are used for undertaking financial transactions. Mobile phones can be used to purchase any product or service. Companies like Flipkart offer over 30 million and Amazon offer 22 million of different varieties of products in India and they deliver the products at home. When purchased online, the sellers get the benefit of by-passing the chain of retailers and thus they can earn more profits. In such cases, sellers pass this benefit to customers by giving discounts and freebies. Such access to variety and the discounts are become the most attractive benefits of online or mobile purchase. Such benefits attract customers from all places; all income groups and do not limit itself to gender and age. However, to understand this it becomes important to study the mobile usage pattern of people all across the demographic profiles. It also becomes important to know the reasons for which people use mobile phones; whether they really use phones for undertaking transaction; whether they feel that the transactions are safe; whether they feel that mobile phones offer them prominent advantages over traditional purchasing; whether they feel that mobile purchasing provides them more choice compared to traditional purchasing and thus have better control over one's financial matters; whether they feel that Mobile Apps make it convenient and beneficial for purchase of any particular product or service and ultimately whether they really get value for money or not.

3.2 Objectives of the Study

1. To understand the evolution of telecom sector in India.
2. To understand the E-commerce growth and prospect of E commerce business in India.
3. To study the usage pattern of mobile users for undertaking e-commerce transactions on mobile phones.

3.3 Hypothesis of the Study

Hypothesis 1:

Null: There is no significant difference in Mobile usage pattern of among various income groups

Alternate: There is significant difference in Mobile usage pattern of among various income groups

Hypothesis 2:

Null: Most of the mobile users are using mobile phones for e-commerce transactions for less than 5 years

Alternate: Most of the mobile users are using mobile phones for e-commerce transactions for 5 years or more.

Hypothesis 3:

Null: Most mobile phone users consider mobile transactions safe.

Alternate: Most mobile phone users consider mobile transactions risky.

3.4. Research Gaps

Evolution of IT in India started post reform in 1990 onwards. How IT and E-commerce business conceptualized or a period of time and how it has become part and parcel of everyday life style also becomes part of study.

Telecom sector evolution in India started from 1995 onwards the review of literature undertaken by the research is move on carried out in foreign countries. As it is notified even current economic survey in the parliament on 9th July 2014 , it is clear maximum investment is taking place in telecom sector hence researcher has decided to study the evolution in telecom sector in India and its impact on e-commerce.

The second important outcome of earlier researchers shows that e-commerce business around the world is growing rapidly. Hence selection on study of Impact of telecom sector on e-commerce business is to promote steady and sustainable business growth, to increase competitiveness, to open new job opportunities and to promote the

quality of life of their citizens.

3.5. Research Problem

Numerous technologies have been developed and marketed in most recent few years yet just few have witnessed commercial success. In a dynamic environment development of technology is followed by business applications further followed by regulations. Policies and regulations in advance are often not recommended fearing that excess control over a technology business in starting stages may reduce the number of economic experiments hampering its overall development. However, there is a need for policies and regulations to co-evolve with the technology and markets. India is an example of timely regulatory reforms in mobile telephone industry where the regulatory system co-evolved with technology and industry developments. The number of mobile subscribers remains at 893million in December 2011 (TRAI). The Mobile Value Added services (MVAS) besides plain voice services are increasingly picking up acceptance among users. MVAS revenues were estimated to contribute INR 51.3 billion in 2009-1and are expected to develop at a CAGR of 21 percent in next five years (CRISINFAC 2010b). With these high development rates and a multitude of stakeholders, M-Commerce in India requires advance regulatory framework to be designed that would synergize different stakeholders and go about as an impetus for further development. This paper addresses the effect of policies and regulation on the development of M-Commerce, with specific reference to India.

3.6. Research Design

This descriptive research highlights the impact of growth in telecom sector on e-commerce business. The acceptance of Mobile Apps and Android technology increased the number of online and mobile transactions. This research highlights the evolution of telecom sector in India, the growth of e-commerce business in India and details the pattern of mobile usage among mobile users in India, restricting the scope to Pune City.

The research started with some basic questions for discussion.

1. What are the main reasons for which people use mobile phones?
2. Do people use phones for undertaking transaction?
3. Do people feel that the transactions are safe?
4. Do people feel that mobile phones offer them prominent advantages over traditional purchasing?
5. Do people feel that mobile purchasing provides them more choice compared to traditional purchasing and thus have better control over one's financial matters?
6. Do people feel that Mobile Apps make it convenient and beneficial for purchase of any particular product or service?
7. Do people really get value for money or not?

The basic study was done by gathering information from earlier research work in the similar area of study. Considering the population using smart phones working on Android based platforms, the number is more than 1000 million at the end of Oct, 2015 (TELECOM REGULATORY AUTHORITY OF INDIA, 2016). N.K. Kathuri & Pals, D.A. suggested a sample size of 384 was appropriate for population over 1,00,000 to ensure sufficient power for the analysis. (Kathuri, 1993)

Taking into account all the above mentioned parameters, the research was planned in such a way that it includes entire range of population. The Primary data was collected through 416 respondents in the form of structured questionnaire. Secondary data was collected through various sources such as News articles, Journals, Magazines, Sector reports, and earlier researches done by researchers across the world.

Sample includes people using Smart phones only, preferably those phones working on Android Platform. The mobile phone users not using smart phones were excluded from being the respondent since the Mobile transaction features are available only on the

smart phones. The sample includes mobile users from different age groups, different income groups, and different professions. The details of the demographic profile are given in the next chapter.

The data collection was done by meeting the respondents at various places across Pune City. This includes the college premises, shopping malls, bus stops and multiplexes. The response was taken electronically by entering the response in the Google form. The data so collected was extracted into excel sheet by using Google Spreadsheet feature. This excel sheet was downloaded and later the data was coded as per the requirement of analysis.

The data was analyzed by using Excel 2007 and IBM SPSS Ver. 21. The variables were defined and were measured by appropriate scales. The reliability and Internal consistency was checked by Cronbach's Alpha. The frequency count, the descriptive statistics such as Measures of Central Tendency and the Chi Square test were used to test the Hypothesis.

3.6.1 Population and Sample

The population using smart phones working on Android based platforms; the number is more than 1000 million at the end of Oct, 2015 (Telecom Regulatory Authority of India, 2015). To know the usage pattern of people, response from sample of 384 is considered appropriate to ensure sufficient power for the analysis.

N.K. Kathuri & Pals, D.A. suggested a sample size of 384 was appropriate for population over 1,00,000 to ensure sufficient power for the analysis. (Kathuri, 1993)

3.6.2 Data Collection

Data collection is the most important part of any research. The researcher might have designed the research in the excellent way but if the required data is not collected the project never meets its end. For this research, the data collection started with

determining what kind of data is required for the research. After deciding the nature of data required, the decision on sample was taken. It was decided that the responses shall be taken from the public places so that maximum number of respondents could be reached.

The data collected during this research consists of two types of data; the Primary and the secondary. The data collected from the Primary sources is known as Primary data. This includes data collected in the form of Structured Questionnaires, Personal Interviews, Focused Group interviews etc. The secondary data includes the data collected from the sources which are previously published. These may include The Primary data was collected by taking the response from the respondents on the structured questionnaire.

The Non Probability Purposive sampling was used for selecting the respondents. The respondents included only those mobile users who use a smart phone preferably based on Android Platform.

The data collection was done by meeting the respondents at various places across Pune City. This includes the college premises, shopping malls, bus stops and multiplexes. The response was taken electronically by entering the response in the Google form. The data so collected was extracted into excel sheet by using Google Spreadsheet feature. This excel sheet was downloaded and later the data was coded as per the requirement of analysis.

In order to collect Primary data, the questionnaire was converted into a Google form. The data was collected online and by meeting personally. The response was directly entered into the Google Form where the data was automatically extracted into excel format. More than 1500 respondents were approached out of which 416 respondents responded fully to the questionnaire. All the partial responses were considered invalid and hence discarded. The sample of 416 includes only the responses from the respondents who answered the questionnaire fully.

3.7. Methods of Analysis

The Data analysis was a continuous process. The research started with the planning of data analysis. The data gathered during the literature was analyzed to understand the exact research problem. The research problem was again analyzed with the data further gathered from the literature survey. The gathered data was also compared to general observations so as to make the knowledgeable assumptions, also known as Hypothesis. These assumptions were based on the data collected from Secondary sources and the general observations. It means that on every stage of research, the data analysis was going on.

There are various techniques of analyzing the data. The way how qualitative data is analyzed is different than that of quantitative data. In this research, the data is mainly quantitative in nature. The attempt is made to measure the behavioral pattern of people using smart mobile phones and assign them quantifiable values so that the general inferences can be arrived at. The data was collected electronically by using the feature Google Form. The survey instrument, the questionnaire, was converted in to the electronic survey form using Google Forms utility. The data was collected in the form of excel sheet.

There are various softwares available for analyzing the quantitative data like SPSS, SAS, Excel, etc. In this research, the data analysis is done using MS-Excel 2007 and IBM SPSS Ver.21. Simple statistical tools such as Chi square test and Measures of central tendency are used to prove the hypothesis. The data interpretations are derived from the test results and the bar diagrams which are themselves very self explanatory.

3.8. Validity and Reliability

The principles of validity and reliability are fundamental cornerstones of the scientific method. Together they are at the core of what is accepted as scientific proof. The idea behind reliability is that any significant results must be inherently repeatable. If the same research is done by other researchers, they should get similar results. Without

the replication of statistical results the research does not meet its requirement of testability fully.

Validity encompasses the entire experimental concept and establishes whether the results obtained meet all the requirements of scientific research methods. The validity checks whether there is proper randomization of sample groups and checks if the control parameters are given the required controls diligently.

The Cronbach's Alpha value denotes whether the data collected by the way of structured questionnaire is measured through reliable scales or not. It also studies the internal consistency of data received. Closer the value of Cronbach's Alpha to 1, it is considered that the scales to be more reliable and the data to be internally more consistent. There are different reports for acceptance of Alpha value to consider the scale as reliable.

CHAPTER 4

DATA ANALYSIS INTERPRETATION

CONTENTS OF THE CHAPTER

4.1. Sample Characteristics

The demographic analysis helps us understand the composition of sample considered for research. This helps us know whether the population is represented properly or not. The demographic analysis includes the study of composition of sample on the basis of Gender, Age, Income level, Occupation and any other factor about the person that may affect the matter of research. If the researcher feels that particular demographic parameter is not related or does not really affect the matter of subject, then the researcher may not consider that parameter for analysis.

Below discussion refers to the demographic analysis on the basis of Gender, Age, Income level, Occupation and Number of Smart phone users in the family.

Table 5 - Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	312	75.0	75.0	75.0
	Female	104	25.0	25.0	100.0
	Total	416	100.0	100.0	

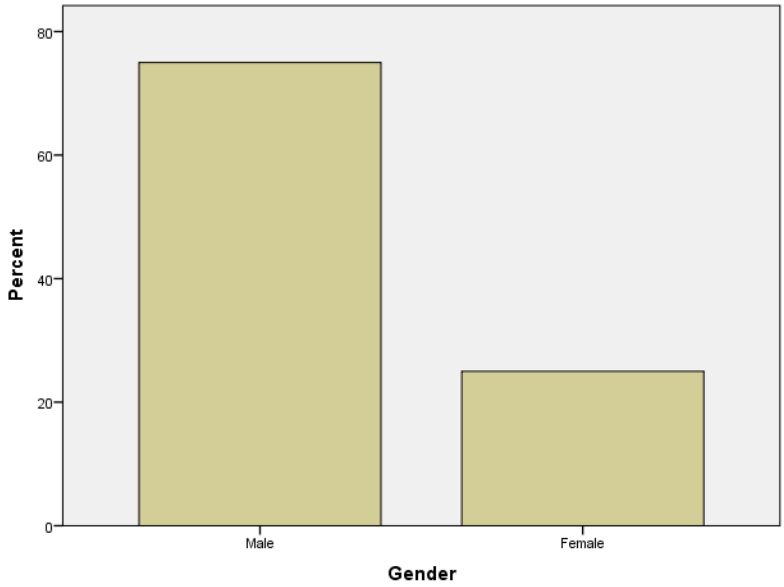


Figure 8- Gender

From the above table and diagram, it can be observed that 75% of respondents are Male and 25% are Female. It was observed during the data collection that the response rate from Male respondent was more than that of female. Many female responses were found to be incomplete and hence the same were discarded.

Table 6 - Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	below 18	43	10.3	10.3	10.3
	18 - 25	98	23.6	23.6	33.9
	25 - 35	114	27.4	27.4	61.3
	35 - 45	112	26.9	26.9	88.2
	above 45	49	11.8	11.8	100.0
	Total	416	100.0	100.0	

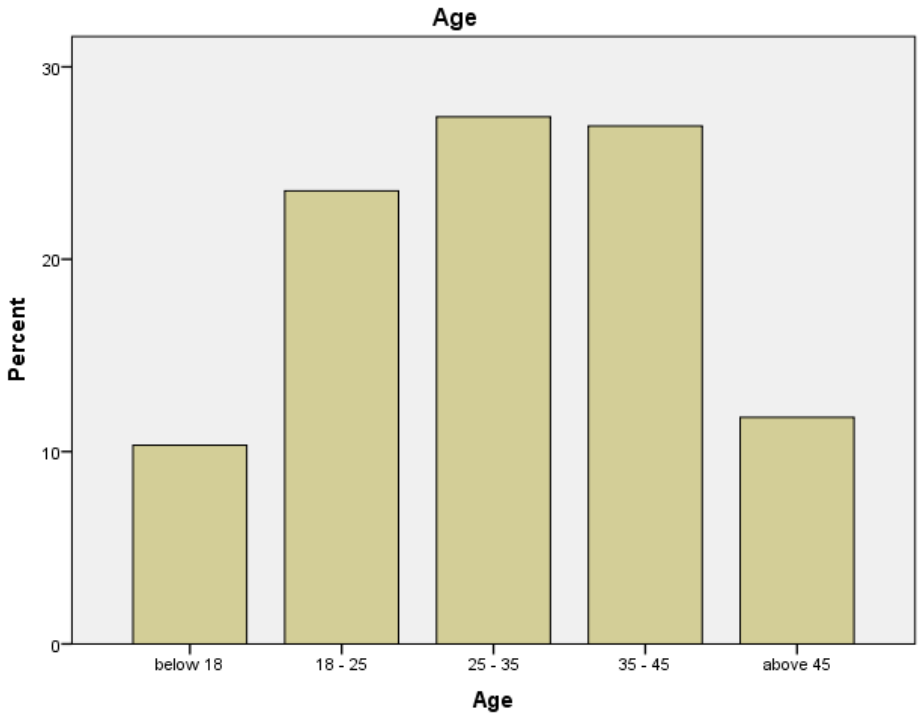


Figure 9 - Age

It can be seen from the above table and figure that maximum responses were from age group 25-35 followed by age group 35-45 and 18-25 respectively. This is because; most of the smart phone users belong to these age groups. Also, it is observed that the respondents from these age groups are conversant with various mobile purchasing transactions and mobile commerce activities. Hence, the data collection was also focused more on these age groups.

Table 7 - Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Service	196	47.1	47.1	47.1
	Business	58	13.9	13.9	61.1
	student	150	36.1	36.1	97.1
	retired	1	.2	.2	97.4
	other	11	2.6	2.6	100.0
	Total	416	100.0	100.0	

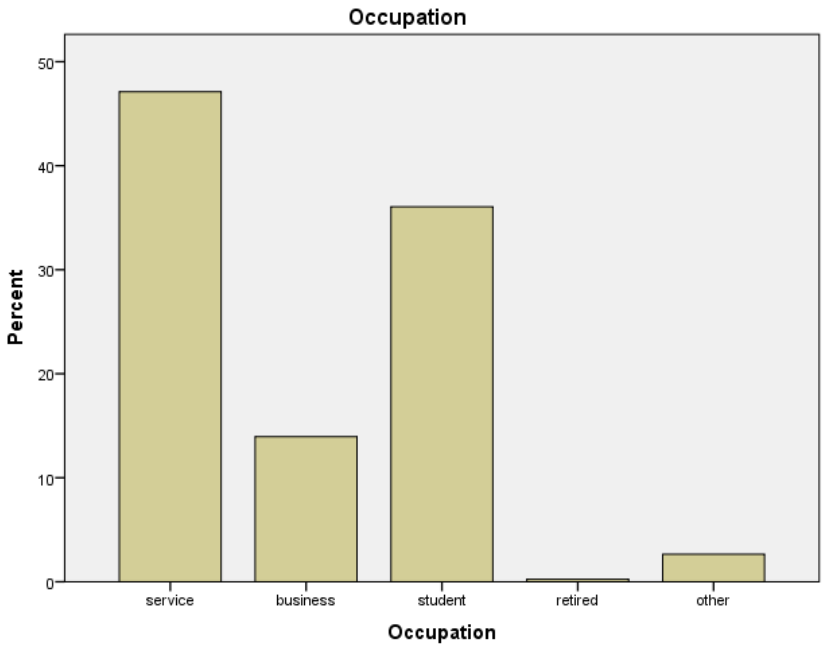


Figure 10 - Occupation

Since it was never earlier proved whether occupation really affects mobile commerce activities, Occupation was considered as one of the parameters of study. It is clear from the table and the figure that most of the responses come from people who are engaged in service, followed by students then by business class and others. The composition of Indian population also denotes the similar trend, where maximum population belongs to Service class, followed by students and lastly by businessmen. Hence, the data was also focused accordingly.

Table 8 - Income Level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	below 20000	191	45.9	45.9	45.9
	20001-40000	120	28.8	28.8	74.8
	40001-60000	60	14.4	14.4	89.2
	above 60001	45	10.8	10.8	100.0
	Total	416	100.0	100.0	

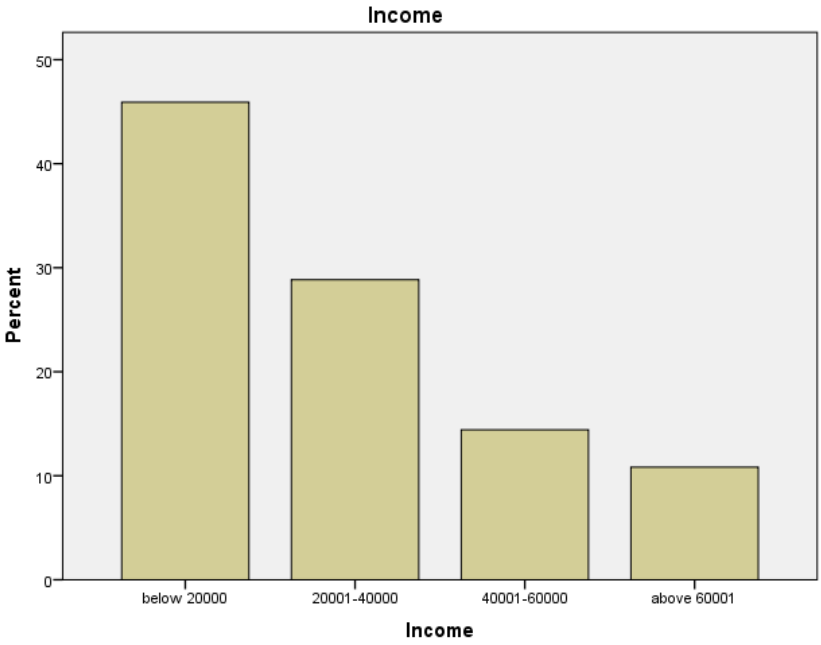


Figure 11 - Income Level

From the above table and the figure it can be seen that maximum response (45.9%) comes from the respondents having income below Rs.20,000/- per month. Since most of the responses come from respondents who are in service and the age group 25-35, it is also observed at the same time that most of these respondents are in the initial phase of their professional life and hence, most of them have income below Rs.20,000/- per month. It was difficult to collect data from the people from higher income groups since they were reluctant to answer to the survey because of shortage of time.

Table 9 - Number of smart phone users in family

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	1	.2	.2	.2
	1 person	30	7.2	7.2	7.5
	2 people or more	89	21.4	21.4	28.8
	All	296	71.2	71.2	100.0
	Total	416	100.0	100.0	

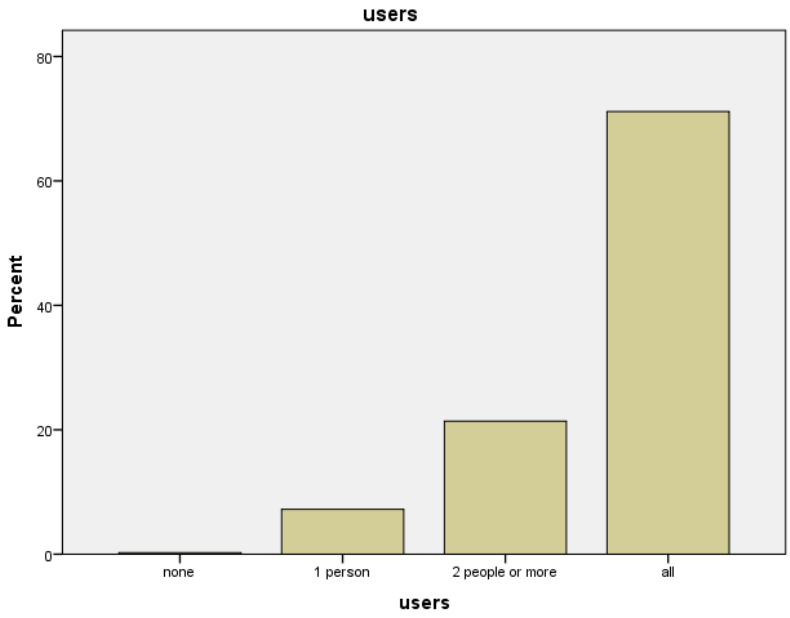


Figure 12 - Number of smart phone users in family

In order to understand how comfortable people to answer questions related to mobile commerce are, it was important to know how many of them and their family members really used smart phones. From the table and the figure, it is clear that most of the respondents were well aware about the mobile commerce benefits since most of the family members also used smart phones. Almost 93% of the respondents' family members use smart phones and hence they were about various mobile banking and mobile commerce facilities that can be availed using smart phones.

4.2. Tests of Reliability and Validity

The data collected can be analysed only once it is tested whether the scales in which data is measured are reliable. In order to check the reliability quotient, test of reliability was performed on the data collected and Cronbach's Alpha value was arrived at. Below given chart shows the Cronbach's Alpha value.

Table 10 - Reliability Statistics

		N	%
Cases	Valid	416	100.0
	Excluded[a]	0	.0
	Total	416	100.0

a. Listwise deletion based on all variables in the procedure.

Table 11 - Reliability Statistics

Cronbach's Alpha	N of Items
.957	26

The Cronbach's Alpha value denotes whether the data collected by the way of structured questionnaire is measured through reliable scales or not. It also studies the internal consistency of data received. Closer the value of Cronbach's Alpha to 1, it is considered that the scales to be more reliable and the data to be internally more consistent. There are different reports for acceptance of Alpha value to consider the scale as reliable. These values range from 0.7to 0.95. In the above table, it is observed that the Cronbach's Alpha value is 0.957, which is considered very highly reliable. This also signifies that the data collected is internally consistent.

4.3. Tests for Normality

Table 12- Test of Normality

		Statistic	**Std. Error**
Mobile Transactions are easy to use.	Mean	3.58	0.074
	Skewness	-0.229	0.12
	Kurtosis	-0.205	0.239
The use of mobile services is economical.	Mean	3.24	0.067
	Skewness	-0.138	0.12
	Kurtosis	-0.262	0.239
Mobile commerce has brought Easy access to information	Mean	3.56	0.073
	Skewness	-0.189	0.12

		Statistic	Std. Error
	Kurtosis	-0.104	0.239
I prefer Mobile transactions because they are safe.	Mean	3.01	0.066
	Skewness	-0.147	0.12
	Kurtosis	-0.105	0.239
The use of mobile services increases my ability to control my financial matters myself.	Mean	3.01	0.069
	Skewness	-0.229	0.12
	Kurtosis	-0.169	0.239
It is risky to use mobile for transactions as chances of battery run out or loss of connection is high.	Mean	2.79	0.067
	Skewness	0.064	0.12
	Kurtosis	-0.114	0.239
Mobile transactions do not offer any prominent advantages over traditional purchasing	Mean	2.55	0.065
	Skewness	0.141	0.12
	Kurtosis	-0.106	0.239
Inspite of various safety precautions, I do not prefer to undertake financial transactions on mobile	Mean	2.56	0.067
	Skewness	0.133	0.12
	Kurtosis	-0.168	0.239
I generally use mobile phone for paying utility bills	Mean	3.16	0.073

		Statistic	Std. Error
(such as telephone recharges, internet, etc)	Skewness	-0.145	0.12
	Kurtosis	-0.434	0.239
I have my own reservations regarding the websites for undertaking financial transactions through mobile phones	Mean	2.88	0.067
	Skewness	-0.158	0.12
	Kurtosis	-0.369	0.239
Mobile transactions were always safe, even 10 years ago.	Mean	2.33	0.065
	Skewness	0.172	0.12
	Kurtosis	-0.294	0.239
It is easy to find the required product or service on mobile phone	Mean	3.28	0.07
	Skewness	-0.109	0.12
	Kurtosis	-0.374	0.239
Mobile apps make it easy and safe to transact using mobile phones	Mean	3.23	0.069
	Skewness	-0.191	0.12
	Kurtosis	-0.073	0.239
Mobile apps are convenient because it also keeps record of my past transactions	Mean	3.28	0.07
	Skewness	-0.223	0.12
	Kurtosis	-0.028	0.239

		Statistic	Std. Error
I do not depend on mobile app for ordering. I confirm the order by calling customer care executive or by visiting a nearby store.	Mean	2.47	0.065
	Skewness	0.205	0.12
	Kurtosis	-0.016	0.239
Duration for which mobile phones are used for undertaking transactions	Mean	1.46	0.032
	Skewness	0.122	0.12
	Kurtosis	0.05	0.239
Frequency of your purchase on mobile (including paying utility bills)	Mean	3.25	0.055
	Skewness	-0.175	0.12
	Kurtosis	-0.418	0.239
Usage of Mobile App for purchasing product/service	Mean	1.14	0.017
	Skewness	0.119	0.12
	Kurtosis	0.101	0.239
Satisfaction towards purchase from mobile App	Mean	1.21	0.02
	Skewness	0.154	0.12
	Kurtosis	0.114	0.239
How likely is you use mobile app for purchasing product or service	Mean	2.1	0.047
	Skewness	0.232	0.12

		Statistic	Std. Error
	Kurtosis	0.182	0.239
Online shopping has reduces my search cost in finding the product	Mean	3.38	0.073
	Skewness	-0.121	0.12
	Kurtosis	-0.071	0.239
Online shopping has reduce my time cost in getting the product	Mean	3.36	0.072
	Skewness	-0.151	0.12
	Kurtosis	-0.028	0.239
Online shopping has save my energy in searching and getting the product	Mean	3.4	0.072
	Skewness	-0.121	0.12
	Kurtosis	-0.233	0.239
Online purchases the product offer have reasonable price	Mean	3.18	0.068
	Skewness	-0.004	0.12
	Kurtosis	-0.085	0.239
Online shopping the product offer gives value for money	Mean	3.04	0.066
	Skewness	-0.052	0.12
	Kurtosis	-0.089	0.239
The product offered on online shopping gives better	Mean	2.89	0.065

		Statistic	Std. Error
services	Skewness	-0.133	0.12
	Kurtosis	0.122	0.239

4.4. Tests for Testing Hypothesis

Null Hypothesis 1

There is no significant difference in Mobile usage pattern of among various income groups

Alternate Hypothesis 1:

There is significant difference in Mobile usage pattern of among various income groups.

The mobile usage pattern among the sample is studied by finding out their habits, beliefs and usage of various applications on mobile phones. Since, this study is focused only to study the usage of mobile phone for financial transactions, the questions asked to the respondents were limited only to their usage habits and beliefs related to transaction safety, actual conducting transaction on mobile phone, Purpose for which the transactions are carried out using mobile phones, dependency on mobile phones for placing orders, the time frame for which the respondents are using mobile phones for undertaking financial transactions, and whether they use mobile apps for undertaking financial transactions.

The data was collected and statistical testing was done to find out if there exists any significant difference for all these parameters among various income groups. The below discussion provides necessary evidence to prove the hypothesis.

First, the question relates to the behavioural aspect linked to the belief of respondents with respect to safety of mobile transactions.

Table 13 - Case Processing Summary

Particulars	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Income * I prefer Mobile transactions because they are safe.	416	100.0%	0	0.0%	416	100.0%
Income * Inspite of various safety precautions, I do not prefer to undertake financial transactions on mobile	416	100.0%	0	0.0%	416	100.0%
Income * I generally use mobile phone for paying utility bills (such as telephone recharges, internet, etc)	416	100.0%	0	0.0%	416	100.0%
Income * I do not depend on mobile app for ordering. I confirm the order by calling	416	100.0%	0	0.0%	416	100.0%

Particulars	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
customer care executive or by visiting a nearby store.						
Income * Duration for which mobile phones are used for undertaking transactions	416	100.0%	0	0.0%	416	100.0%
Income * Frequency of your purchase on mobile (including paying utility bills)	416	100.0%	0	0.0%	416	100.0%
Income * Usage of Mobile App for purchasing product/service	416	100.0%	0	0.0%	416	100.0%

The above table shows the Case Processing Summary. Aall 416 respondents from the sample have responded to all the questions. There are no invalid or missing cases and hence, the results include responses from 100% of the respondents.

Table 14 - Usage of Mobile phones for Transactions because of Safety

Particulars			I prefer Mobile transactions because they are safe.					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Income	below 20000	Count	68	6	50	49	18	191
		Expected Count	44.5	13.3	54.2	53.7	25.3	191.0
		% within I prefer Mobile transactions because they are safe.	70.1%	20.7%	42.4%	41.9%	32.7%	45.9%
		% of Total	16.3%	1.4%	12.0%	11.8%	4.3%	45.9%
		Std. Residual	3.5	-2.0	-.6	-.6	-1.4	
Income	20001-40000	Count	15	9	35	40	21	120
		Expected Count	28.0	8.4	34.0	33.8	15.9	120.0
		% within I prefer Mobile transactions because they are safe.	15.5%	31.0%	29.7%	34.2%	38.2%	28.8%
		% of Total	3.6%	2.2%	8.4%	9.6%	5.0%	28.8%

Particulars			I prefer Mobile transactions because they are safe.					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
		Std. Residual	-2.5	.2	.2	1.1	1.3	
Income	40001-60000	Count	8	11	20	12	9	60
		Expected Count	14.0	4.2	17.0	16.9	7.9	60.0
		% within I prefer Mobile transactions because they are safe.	8.2%	37.9%	16.9%	10.3%	16.4%	14.4%
		% of Total	1.9%	2.6%	4.8%	2.9%	2.2%	14.4%
		Std. Residual	-1.6	3.3	.7	-1.2	.4	
Income	above 60001	Count	6	3	13	16	7	45
		Expected Count	10.5	3.1	12.8	12.7	5.9	45.0
		% within I prefer Mobile transactions because they are safe.	6.2%	10.3%	11.0%	13.7%	12.7%	10.8%
		% of Total	1.4%	.7%	3.1%	3.8%	1.7%	10.8%

Particulars		I prefer Mobile transactions because they are safe.					Total
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
	Std. Residual	-1.4	-.1	.1	.9	.4	
Total	Count	97	29	118	117	55	416
	Expected Count	97.0	29.0	118.0	117.0	55.0	416.0
	% within I prefer Mobile transactions because they are safe.	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	% of Total	23.3%	7.0%	28.4%	28.1%	13.2%	100.0%

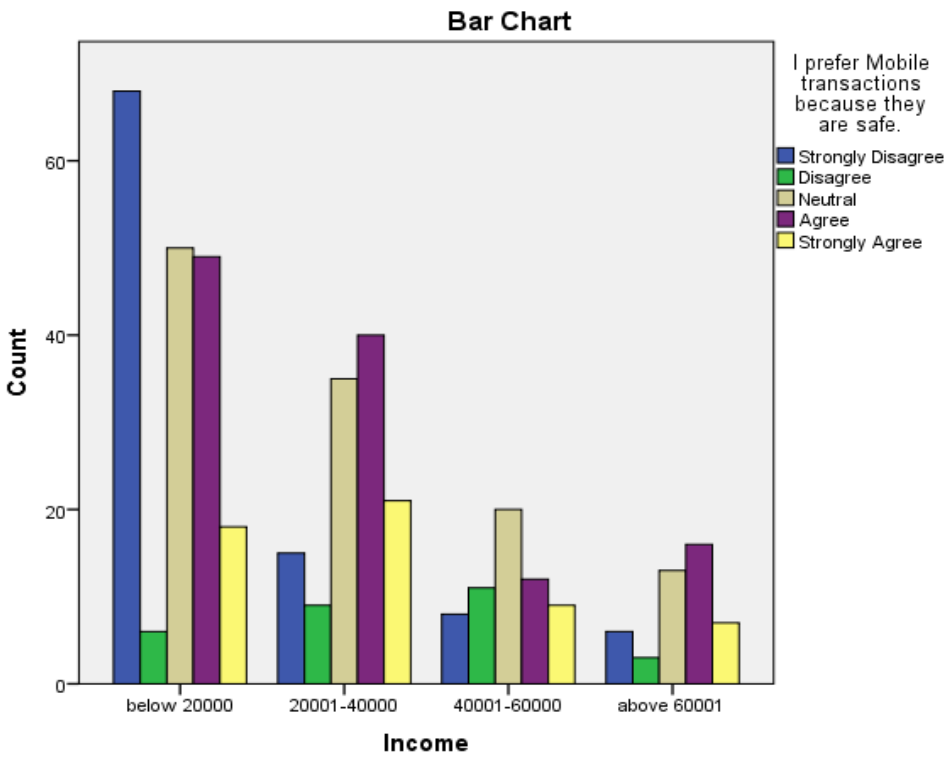


Figure 13 - Usage of Mobile phones for Transactions because of Safety

It is clear from the above table and the figure that there exists difference between the usages of Mobile phones for Transactions because of Safety among various income groups. People do not enter into transactions because they feel these transactions are safe. There might be two reasons for this kind of response. Either they are not really aware about safety issues in entering transactions from mobile phones, or they assume the safety of the mobile transaction. However, it is not very clear whether this difference is statistically significant. To test whether the difference is statistically significant, the Chi-squared test was conducted. Below given table details the results of the test.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	46.870[a]	12	.000
Likelihood Ratio	44.852	12	.000
N of Valid Cases	416		

a. 2 cells (10.0%) have expected count less than 5. The minimum expected count is 3.14.

The Chi-square test studies the difference between the expected and the actual count of the scores generated from the respondents. Since, the P Value is less that 0.05, we have enough evidence to understand that there exists significant difference between Usage of Mobile phones for Transactions because of Safety among various income groups.

Second, the question asked to respondents was if they would not undertake a transaction from mobile in spite of various safety precautions taken on mobile transactions. This question also related to the belief on safety of mobile transactions. Below table shows the difference between the expected and the actual scores of chances that people will not undertake a mobile transaction in spite of taking all safety precautions.

Table 15 - No mobile transaction in spite of taking all safety precautions

Particulars			Inspite of various safety precautions, I do not prefer to undertake financial transactions on mobile					Total
			strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Income	below 20000	Count	78	23	39	35	16	191
		Expected Count	59.2	40.4	36.3	36.3	18.8	191.0
		% within Inspite of various safety precautions, I do not prefer to undertake financial transactions on mobile	60.5%	26.1%	49.4%	44.3%	39.0%	45.9%
		% of Total	18.8%	5.5%	9.4%	8.4%	3.8%	45.9%
		Std. Residual	2.4	-2.7	.5	-.2	-.7	
	20001-40000	Count	29	32	21	27	11	120
		Expected Count	37.2	25.4	22.8	22.8	11.8	120.0
		% within Inspite of various safety precautions, I do	22.5%	36.4%	26.6%	34.2%	26.8%	28.8%

Particulars			Inspite of various safety precautions, I do not prefer to undertake financial transactions on mobile					Total
			strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
		not prefer to undertake financial transactions on mobile						
		% of Total	7.0%	7.7%	5.0%	6.5%	2.6%	28.8%
		Std. Residual	-1.3	1.3	-.4	.9	-.2	
	40001-60000	Count	11	20	12	8	9	60
		Expected Count	18.6	12.7	11.4	11.4	5.9	60.0
		% within Inspite of various safety precautions, I do not prefer to undertake financial transactions on mobile	8.5%	22.7%	15.2%	10.1%	22.0%	14.4%
		% of Total	2.6%	4.8%	2.9%	1.9%	2.2%	14.4%
		Std. Residual	-1.8	2.1	.2	-1.0	1.3	

Particulars			Inspite of various safety precautions, I do not prefer to undertake financial transactions on mobile					Total
			strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
	above 60001	Count	11	13	7	9	5	45
		Expected Count	14.0	9.5	8.5	8.5	4.4	45.0
		% within Inspite of various safety precautions, I do not prefer to undertake financial transactions on mobile	8.5%	14.8%	8.9%	11.4%	12.2%	10.8%
		% of Total	2.6%	3.1%	1.7%	2.2%	1.2%	10.8%
		Std. Residual	-.8	1.1	-.5	.2	.3	
Total		Count	129	88	79	79	41	416
		Expected Count	129.0	88.0	79.0	79.0	41.0	416.0
		% within Inspite of various safety precautions, I do not prefer to	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Particulars		Inspite of various safety precautions, I do not prefer to undertake financial transactions on mobile					Total
		strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**	
	undertake financial transactions on mobile						
	% of Total	31.0%	21.2%	19.0%	19.0%	9.9%	100.0%

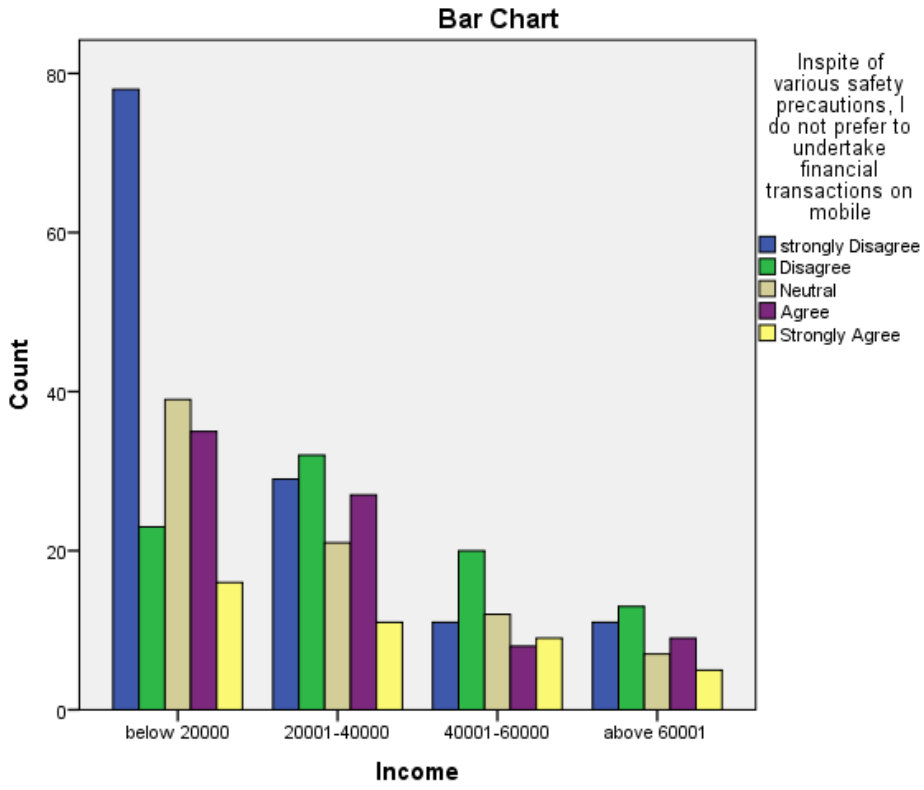


Figure 14 - No mobile transaction in spite of taking all safety precautions

It is clear from the above table and the figure that there exists difference between the usages of Mobile phones for Transactions in spite of taking all Safety precautions among various income groups. However, it is not very clear whether this difference is statistically significant. To test whether the difference is statistically significant, the Chi-squared test was conducted. Below given table details the results of the test.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	30.877[a]	12	.002
Likelihood Ratio	31.456	12	.002
N of Valid Cases	416		

a. 1 cells (5.0%) have expected count less than 5. The minimum expected count is 4.44.

The Chi-square test results show that the P Value is less that 0.05; hence, we have enough evidence to understand that there exists significant difference between Usage of Mobile phones for Transactions in spite of all the safety precautions taken by the telecom companies among various income groups.

The third question relates to the purpose for which mobile transactions are undertaken. It is observed that most of the users undertake financial transactions on mobile for payment of utility bills. This question only studies if there is any significant difference among various income groups with respect to usage of mobile phone for payment of utility bills. Below table shows the exact scores collected from the responses.

Table 16 - Using mobile bills for Utility Bills Payments

Particulars			I generally use mobile phone for paying utility bills (such as telephone recharges, internet, etc)					Total
			strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Income	below 20000	Count	69	15	32	46	29	191
		Expected Count	47.3	15.6	27.5	60.1	40.4	191.0
		% within I generally use mobile phone for paying utility bills (such as telephone recharges, internet, etc)	67.0%	44.1%	53.3%	35.1%	33.0%	45.9%
		% of Total	16.6%	3.6%	7.7%	11.1%	7.0%	45.9%
		Std. Residual	3.2	-.2	.8	-1.8	-1.8	
	20001-40000	Count	20	7	15	50	28	120
		Expected Count	29.7	9.8	17.3	37.8	25.4	120.0
		% within I generally use mobile phone for	19.4%	20.6%	25.0%	38.2%	31.8%	28.8%

Particulars			I generally use mobile phone for paying utility bills (such as telephone recharges, internet, etc)					Total
			strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
		paying utility bills (such as telephone recharges, internet, etc)						
		% of Total	4.8%	1.7%	3.6%	12.0%	6.7%	28.8%
		Std. Residual	-1.8	-.9	-.6	2.0	.5	
	40001-60000	Count	9	6	9	19	17	60
		Expected Count	14.9	4.9	8.7	18.9	12.7	60.0
		% within I generally use mobile phone for paying utility bills (such as telephone recharges, internet, etc)	8.7%	17.6%	15.0%	14.5%	19.3%	14.4%
		% of Total	2.2%	1.4%	2.2%	4.6%	4.1%	14.4%
		Std. Residual	-1.5	.5	.1	.0	1.2	

Particulars			I generally use mobile phone for paying utility bills (such as telephone recharges, internet, etc)					Total
			strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
	above 60001	Count	5	6	4	16	14	45
		Expected Count	11.1	3.7	6.5	14.2	9.5	45.0
		% within I generally use mobile phone for paying utility bills (such as telephone recharges, internet, etc)	4.9%	17.6%	6.7%	12.2%	15.9%	10.8%
		% of Total	1.2%	1.4%	1.0%	3.8%	3.4%	10.8%
		Std. Residual	-1.8	1.2	-1.0	.5	1.5	
Total		Count	103	34	60	131	88	416
		Expected Count	103.0	34.0	60.0	131.0	88.0	416.0
		% within I generally use mobile phone for paying utility bills	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Particulars		I generally use mobile phone for paying utility bills (such as telephone recharges, internet, etc)					Total
		strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
	(such as telephone recharges, internet, etc)						
	% of Total	24.8%	8.2%	14.4%	31.5%	21.2%	100.0%

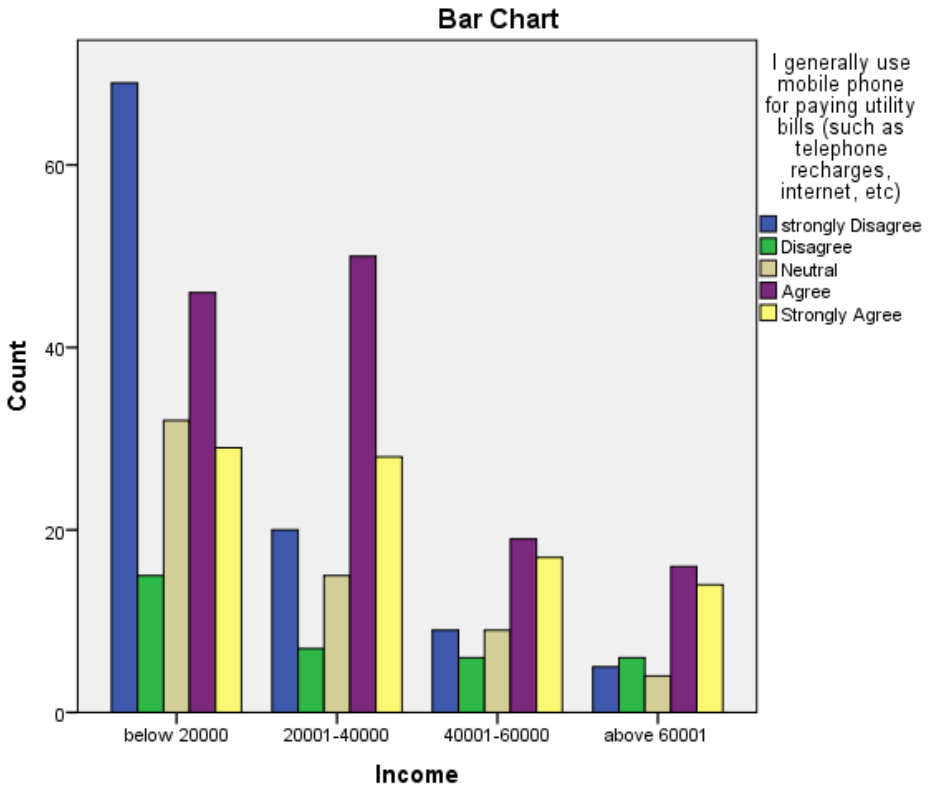


Figure 15 - Using mobile bills for Utility Bills Payments

It is clear from the above table and the figure that there exists difference between the usages of Mobile phones for Utility bills payments among various income groups. However, it is not very clear whether this difference is statistically significant. To test whether the difference is statistically significant, the Chi-squared test was conducted. Below given table details the results of the test.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	37.939[a]	12	.000
Likelihood Ratio	38.196	12	.000
N of Valid Cases	416		

a. 2 cells (10.0%) have expected count less than 5. The minimum expected count is 3.68.

The Chi-square test results show that the P Value is less that 0.05; hence, we have enough evidence to understand that there exists difference between the usages of Mobile phones for Utility bills payments among various income groups.

The fourth question measures the level of dependency that people have towards purchasing from mobile App. Here it is found out whether people really depend upon ordering from Mobile App only or they also try to contact customer care for confirmation of an order placed. The below table shows the scores received from the respondents.

Table 17 - Dependency on Mobile App

Particulars			I do not depend on mobile app for ordering. I confirm the order by calling customer care executive or by visiting a nearby store.					Total
			Strongly disagree	Disagree	Neutral	Agree	Strongly agree	
Income	below 20000	Count	80	23	42	27	19	191
		Expected Count	64.3	35.4	46.4	28.0	17.0	191.0
		% within I do not depend on mobile app for ordering. I confirm the order by calling customer care executive or by visiting a nearby store.	57.1%	29.9%	41.6%	44.3%	51.4%	45.9%
		% of Total	19.2%	5.5%	10.1%	6.5%	4.6%	45.9%
		Std. Residual	2.0	-2.1	-.6	-.2	.5	
	20001-40000	Count	29	31	35	17	8	120
		Expected Count	40.4	22.2	29.1	17.6	10.7	120.0
		% within I do not depend on mobile app for ordering. I confirm the order	20.7%	40.3%	34.7%	27.9%	21.6%	28.8%

Particulars			I do not depend on mobile app for ordering. I confirm the order by calling customer care executive or by visiting a nearby store.					Total
			Strongly disagree	Disagree	Neutral	Agree	Strongly agree	
		by calling customer care executive or by visiting a nearby store.						
		% of Total	7.0%	7.5%	8.4%	4.1%	1.9%	28.8%
		Std. Residual	-1.8	1.9	1.1	-.1	-.8	
	40001-60000	Count	16	16	13	10	5	60
		Expected Count	20.2	11.1	14.6	8.8	5.3	60.0
		% within I do not depend on mobile app for ordering. I confirm the order by calling customer care executive or by visiting a nearby store.	11.4%	20.8%	12.9%	16.4%	13.5%	14.4%
		% of Total	3.8%	3.8%	3.1%	2.4%	1.2%	14.4%
		Std. Residual	-.9	1.5	-.4	.4	-.1	

Particulars			I do not depend on mobile app for ordering. I confirm the order by calling customer care executive or by visiting a nearby store.					Total
			Strongly disagree	Disagree	Neutral	Agree	Strongly agree	
	above 60001	Count	15	7	11	7	5	45
		Expected Count	15.1	8.3	10.9	6.6	4.0	45.0
		% within I do not depend on mobile app for ordering. I confirm the order by calling customer care executive or by visiting a nearby store.	10.7%	9.1%	10.9%	11.5%	13.5%	10.8%
		% of Total	3.6%	1.7%	2.6%	1.7%	1.2%	10.8%
		Std. Residual	.0	-.5	.0	.2	.5	
Total		Count	140	77	101	61	37	416
		Expected Count	140.0	77.0	101.0	61.0	37.0	416.0
		% within I do not depend on mobile app for ordering. I confirm the order by calling customer care executive or	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Particulars		I do not depend on mobile app for ordering. I confirm the order by calling customer care executive or by visiting a nearby store.					Total
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	
	by visiting a nearby store.						
	% of Total	33.7%	18.5%	24.3%	14.7%	8.9%	100.0 %

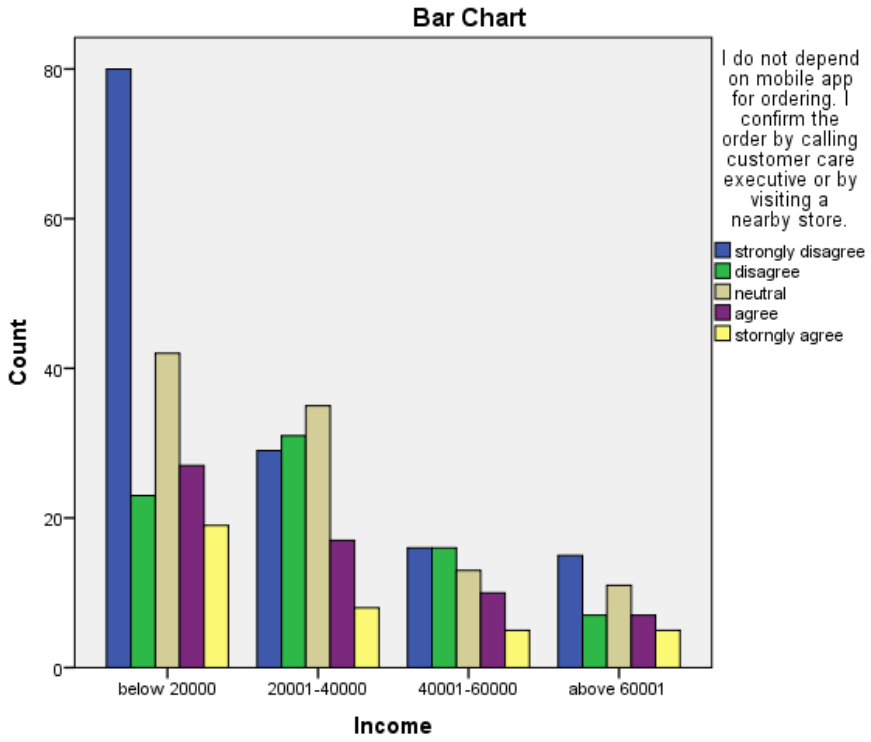


Figure 16 - Dependency on Mobile App

It is clear from the above table that the respondents depend upon mobile apps for ordering the product. They do not generally re-confirm the order with the customer care. This shows that slowly and gradually, mobile users have started believing the process of ordering though they still do not believe the safety of such transactions. The difference can be seen between the expected and the actual scores received against the question received from the responses. However, it is not clear whether such difference in scores is significant statistically. Hence, Chi-square Test is conducted to find whether such difference is significant. The results of Chi-Square test are given in the below table.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.274[a]	12	.047
Likelihood Ratio	21.374	12	.045
N of Valid Cases	416		

a. 1 cells (5.0%) have expected count less than 5. The minimum expected count is 4.00.

It is clear from the table that the P Value for Pearson Chi-Square (0.047) is less than 0.05. Hence, we have enough evidence to say that the difference among the income groups is statistically significant.

The fifth question deals with the frequency at which people undertake financial transaction on mobile. The objective of having this question in the survey is to find out how comfortable it is for the respondents to associate themselves with mobile purchasing. It is a general observation that people have slowly started adopting mobile payment option for payment of utility bills and purchase of other small value items. With access to additional financial benefits, people also tend to buy electronic items, apparels, sports items etc. from mobile apps of Flipkart.com or Amazon.com. However, this behaviour needs to be tested statistically. The data collected through this survey highlights the frequency at which people undertake financial transaction through mobile phones.

Table 18 - Frequency of Purchase using Mobile phone

Particulars			**Frequency of your purchase on mobile (including paying utility bills)**					**Total**
			Almost daily	**Once in a week**	**More than one in a week**	**Occasionally**	**Never**	
Income	below 20000	Count	9	56	23	83	20	191
		Expected Count	11.9	47.3	30.3	83.6	17.9	191.0
		% within Frequency of your purchase on mobile (including	34.6%	54.4%	34.8%	45.6%	51.3%	45.9 %

Particulars			Frequency of your purchase on mobile (including paying utility bills)					Total
			Almost daily	Once in a week	More than one in a week	Occasionally	Never	
		paying utility bills)						
		% of Total	2.2%	13.5%	5.5%	20.0%	4.8%	45.9 %
		Std. Residual	-.9	1.3	-1.3	-.1	.5	
	20001-40000	Count	6	26	27	50	11	120
		Expected Count	7.5	29.7	19.0	52.5	11.3	120.0
		% within Frequency of your purchase on mobile (including paying utility bills)	23.1%	25.2%	40.9%	27.5%	28.2%	28.8 %
		% of Total	1.4%	6.3%	6.5%	12.0%	2.6%	28.8 %
		Std. Residual	-.5	-.7	1.8	-.3	-.1	

Particulars			Frequency of your purchase on mobile (including paying utility bills)					Total
			Almost daily	Once in a week	More than one in a week	Occasionally	Never	
	40001-60000	Count	4	13	6	32	5	60
		Expected Count	3.8	14.9	9.5	26.3	5.6	60.0
		% within Frequency of your purchase on mobile (including paying utility bills)	15.4%	12.6%	9.1%	17.6%	12.8%	14.4%
		% of Total	1.0%	3.1%	1.4%	7.7%	1.2%	14.4%
		Std. Residual	.1	-.5	-1.1	1.1	-.3	
	above 60001	Count	7	8	10	17	3	45
		Expected Count	2.8	11.1	7.1	19.7	4.2	45.0
		% within Frequency of your purchase on mobile	26.9%	7.8%	15.2%	9.3%	7.7%	10.8%

Particulars			Frequency of your purchase on mobile (including paying utility bills)					Total
			Almost daily	Once in a week	More than one in a week	Occasionally	Never	
		(including paying utility bills)						
		% of Total	1.7%	1.9%	2.4%	4.1%	.7%	10.8 %
		Std. Residual	2.5	-.9	1.1	-.6	-.6	
Total		Count	26	103	66	182	39	416
		Expected Count	26.0	103.0	66.0	182.0	39.0	416.0
		% within Frequency of your purchase on mobile (including paying utility bills)	100.0 %	100.0 %	100.0 %	100.0%	100.0 %	100.0 %
		% of Total	6.3%	24.8%	15.9%	43.8%	9.4%	100.0 %

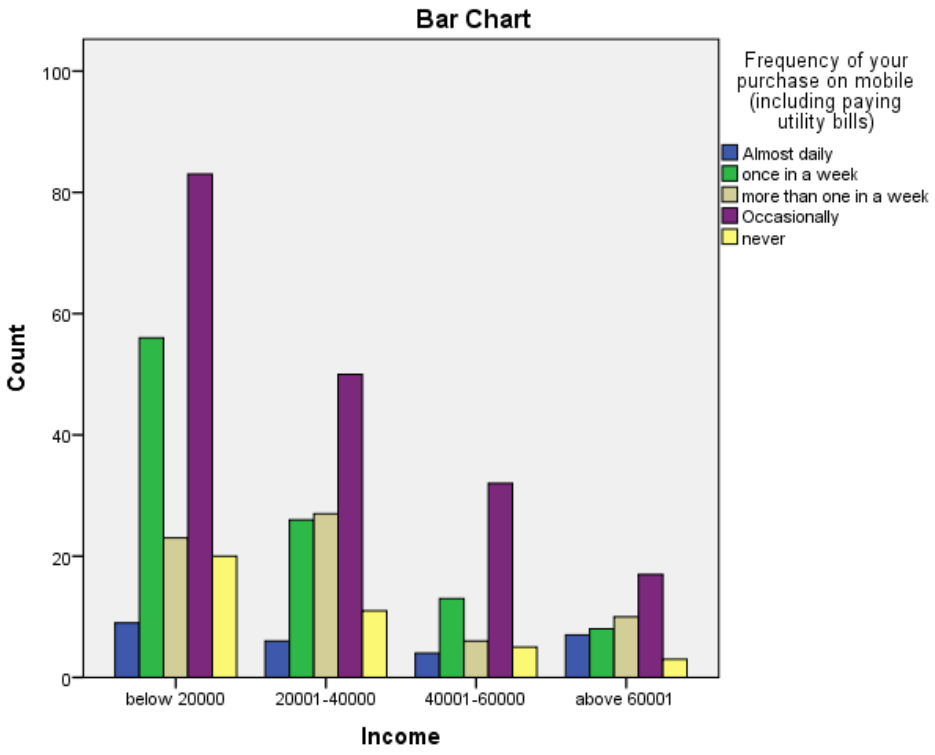


Figure 17 - Frequency of Purchase using Mobile phone

It is clear from the above table and the chart that most of the respondents use mobile transactions occasionally. Some a large part of sample undertake mobile transactions at least once in a week. This shows that people have started adopting mobile transactions and thus contributing to the growth of e-commerce. However, these numbers show difference among various income groups. In order to test whether this difference is significant, Chi square test is used. Below given are the Chi-Square test results.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.417[a]	12	.060
Likelihood Ratio	18.517	12	.101
N of Valid Cases	416		

a. 3 cells (15.0%) have expected count less than 5. The minimum expected count is 2.81.

From the Chi-square test, it is clear that the P Value (0.06) is greater than 0.05. Hence, we can understand that though there is difference in the scores of frequency of mobile transactions among different income groups, the difference is not statistically significant.

The sixth question deals with whether people use mobile apps for ordering product or service and not only for paying utility bills. Below table and the chart shows the summary of responses.

Table 19 - Purchase of Product/service by using Mobile phone

Particulars			Usage of Mobile App for purchasing product/service		Total
			yes	no	
Income	below 20000	Count	154	37	191
		Expected Count	164.8	26.2	191.0
		% within Usage of Mobile App for purchasing product/service	42.9%	64.9%	45.9%
		% of Total	37.0%	8.9%	45.9%
		Std. Residual	-.8	2.1	
	20001-40000	Count	109	11	120
		Expected Count	103.6	16.4	120.0
		% within Usage of Mobile App for purchasing product/service	30.4%	19.3%	28.8%
		% of Total	26.2%	2.6%	28.8%
		Std. Residual	.5	-1.3	
	40001-60000	Count	54	6	60
		Expected Count	51.8	8.2	60.0

Particulars			Usage of Mobile App for purchasing product/service		Total
			yes	no	
		% within Usage of Mobile App for purchasing product/service	15.0%	10.5%	14.4%
		% of Total	13.0%	1.4%	14.4%
		Std. Residual	.3	-.8	
	above 60001	Count	42	3	45
		Expected Count	38.8	6.2	45.0
		% within Usage of Mobile App for purchasing product/service	11.7%	5.3%	10.8%
		% of Total	10.1%	.7%	10.8%
		Std. Residual	.5	-1.3	
Total		Count	359	57	416
		Expected Count	359.0	57.0	416.0
		% within Usage of Mobile App for purchasing product/service	100.0%	100.0%	100.0%
		% of Total	86.3%	13.7%	100.0%

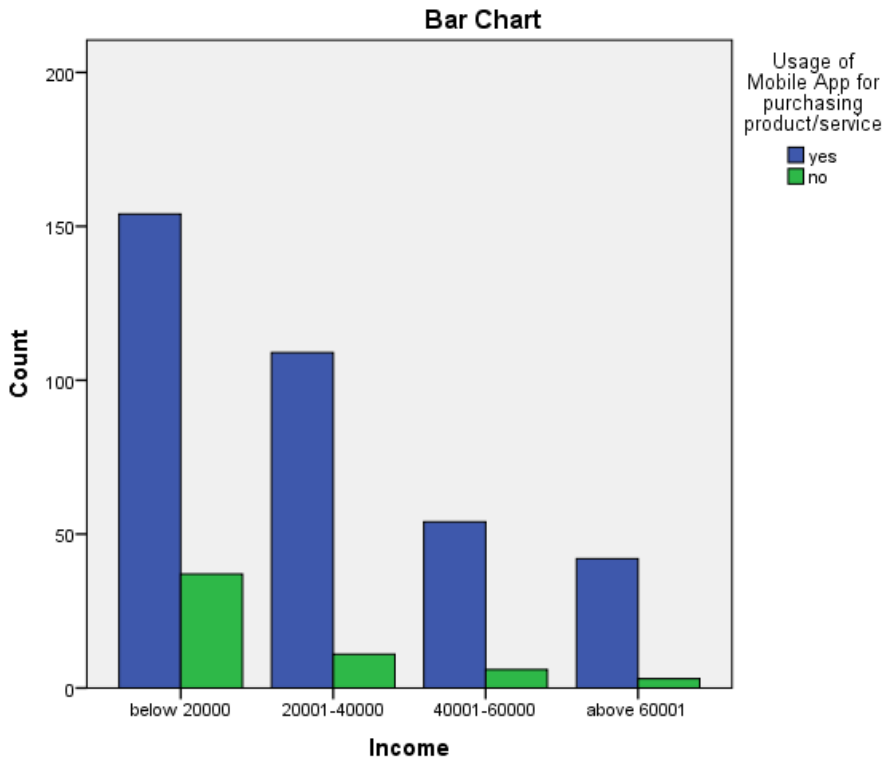


Figure 18 - Purchase of Product/service by using Mobile phone

From the above table and the figure, it can be clearly seen that most of the respondents among all the income groups use mobile phones to undertake purchase transaction using mobile phones. However, there is difference among different income groups. The statistical significance of such difference is studied by Chi-square test.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.859[a]	3	.020
Likelihood Ratio	10.034	3	.018
N of Valid Cases	416		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.17.

From the table it can be seen that the P value is less than 0.05. Hence, we have enough evidence to understand that the intensity of usage of mobile phones for undertaking purchase transaction among different income groups is significantly different.

From the above discussion it can be easily understood that there is difference in the mobile usage pattern of users among various income groups. Out of 6 questions which together constitute the Mobile usage pattern of mobile users, all the questions have shown that there is difference in the mobile usage pattern. In the usage scores among different income groups in 5 questions out of 6, it is found that the difference among different income groups is significant. We do not have sufficient evidence to prove that the Null Hypothesis is right and hence, **we accept the Alternate Hypothesis that there is significant difference in Mobile usage pattern of among various income groups**.

Null Hypothesis 2:

Most of the mobile users are using mobile phones for e-commerce transactions for less than 5 years.

Alternate Hypothesis 2:

Most of the mobile users are using mobile phones for e-commerce transactions for more than 5 years.

Though E-commerce and M-commerce is now an old story, it is generally observed that people have really started using mobile phones for undertaking financial transaction in last 5 years only. Various mobile applications and payment gateways have made it easier to make successful transactions using mobile phones. Android adds to the advantage for using Mobile phones for undertaking financial transactions. Along with these advantages, corporations have also developed various ways of keeping the financial transactions secured so that the payment is made from the correct person to correct company for the correct product and the product is also delivered at the right place. Considering these benefits, people have started using mobile applications more than ever before.

In order to know the impact of telecom on e-commerce, it is important to study how long people are using mobile applications for making payments. The following table and the chart show the details about the same.

Table 20 - Duration for which mobile phones are used for undertaking transactions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 5 Years	263	63.2	63.2	63.2
	> 5 Years	114	27.4	27.4	90.6
	10 Years and above	39	9.4	9.4	100.0
	Total	416	100.0	100.0	

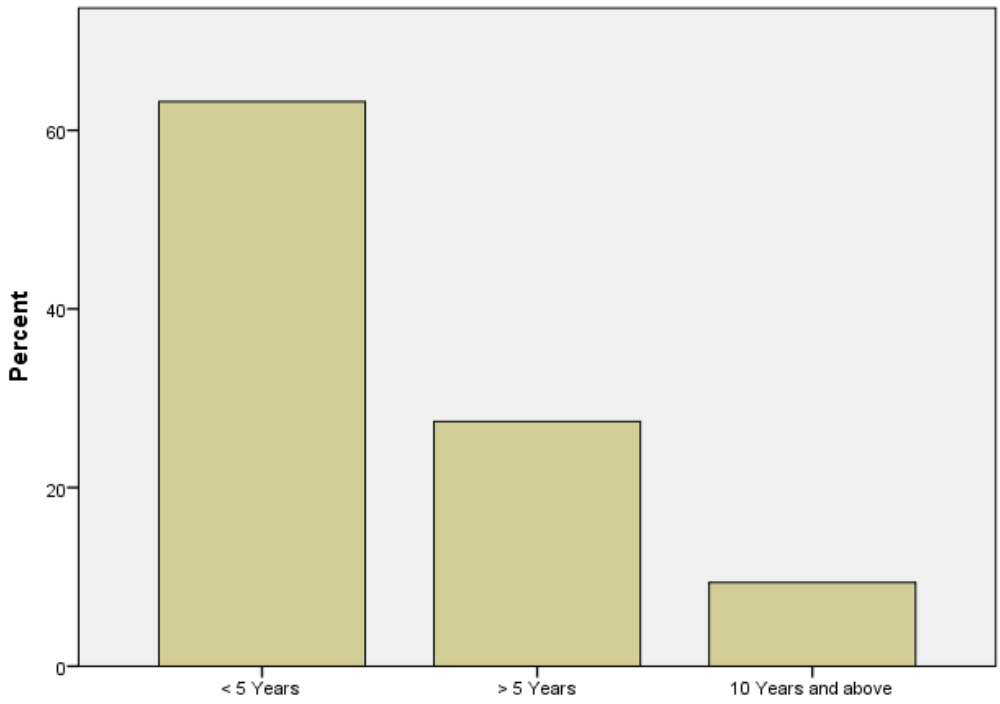


Figure 19 - Duration for which mobile phones are used for undertaking transactions

The above table and the figure highlight the frequency count and the percentages of respondents usage of mobile phones for undertaking financial transactions. Since the data is a nominal data, no statistical test can be used to test the hypothesis. The hypothesis can be tested only by using descriptive statistics such as frequency and percentages. It can be clearly seen that the 63.2% of the respondents are using mobile phones for transactions for less than 5 years, 27.4% of respondents are using phones for more than 5 years while only 9.4% of the respondents are using mobile phones for undertaking financial transactions for more than 1years.

This proves the Null Hypothesis that Most of the mobile users are using mobile phones for e-commerce transactions for less than 5 years.

Null Hypothesis 3:

Most mobile phone users consider mobile transactions safe.

Alternate Hypothesis 3:

Most of the mobile users do not consider mobile transactions to be safe.

In last few years, a sea change has been seen in the way how technology has penetrated to our day-to-day lives. It is a general observation that people use mobile phones for almost everything they do; from business to purchasing grocery and from Education to communication. While we are dealing various transactions, it becomes very important to believe that technology plays a vital role in successful completion of the transaction. Such successful completion of transaction involves exchange of personal and financial information, mobile numbers, bank account numbers, the One Time Passwords (OTP), the bank account passwords, and other important and confidential information.

In the instances of one-to-one sales, one might not really share all such kind of

information with the seller, however, when it comes to mobile banking or mobile commerce, the transactions cannot be undertaken with exchange of all this information. Hence, it becomes very necessary that the transaction is flawless and safe at the same time. It is very important to keep the confidentiality of the information thus exchanged during the course of transaction.

Below table highlights the respondents opinion about safety of mobile transaction.

Table 21 - Respondents opinion about safety of mobile transaction

	I prefer Mobile transactions because they are safe.	Mobile transactions were always safe, even 10 years ago.	Mobile apps make it easy and safe to transact using mobile phones	Inspite of various safety precautions, I do not prefer to undertake financial transactions on mobile
N Valid	416	416	416	416
Missing	0	0	0	0
Mean	3.01	2.33	3.23	2.56
Median	3.00	2.00	4.00	2.00
Mode	3	1	4	1

5 Point Likert scale has been used to find out respondents opinions on various statements appearing in the above table. 1 denotes Strong Disagreement to the statements and 5 denotes Strong agreement to the statement, whereas 3 denote neither agreement nor disagreement to the statement. To understand this table, Modal value plays a very

important role. It can be seen from the table that people believe that mobile transactions were not always so safe (Refer statement (b), Mode = 1). Such response can be easily justified by the fact that revolution in mobile commerce came only after Android phones were developed. Earlier, there were limited avenues for mobile purchasing. Hence, users and experts in technology did not have any experience in what kind of safety precautions needed to be taken to keep the transactions safe.

However, if the response of statement (c) is observed, the Modal value is 4. It means most of the respondents agree to the statement that Mobile apps make it easy and safe to transact using mobile phones. This means that in recent times, the level of safety of mobile transactions has increased and people have started realizing the transactions undertaken using mobile apps are safe. Corresponding to the same response, it can be observed that people do not mind entering into financial transaction on mobile once they are assured of safety precautions to be taken (See statement (d), Mode = 1). However, while they do not mind entering into transaction, they are still not very sure about why they prefer to enter into financial transaction on mobile. It can be understood that people enter into transaction because of various other benefits like ease in access of variety of products, home delivery, discounts in prices, etc. while they do not really bother much to think about the safety in the transaction. People today take safety as a part of successful transaction.

This discussion provides enough evidence to accept the Null Hypothesis that most mobile phone users consider mobile transactions safe.

4.5. Summary

The demographic analysis shows that the population is represented taking into account the overall demographic composition of Indian population. Most of the respondents are male; most of them are employed; followed by students having income less than 20000 to 40000, age between 18 to 45 and where most of the respondents' family members use smart phones.

The reliability can be ensured by cover large sample. The reliability analysis was conducted and the results show that the data collected is highly reliable and the responses were measured on highly reliable scale and the data is internally consistent with Cronbach's Alpha 0.957.

In order to conduct statistical analysis, it is important to find out what kind of response is received from the respondents. It becomes very difficult to check the validity of the findings unless the same is tested and proved statistically. The test of normality was also conducted which showed that the data was normal and hence the statistical analysis was possible.

The mobile usage pattern among the sample was studied by finding out their habits, beliefs and usage of various applications on mobile phones. Since, this study is focused only to study the usage of mobile phone for financial transactions, the questions asked to the respondents were limited only to their usage habits and beliefs related to transaction safety, actual conducting transaction on mobile phone, Purpose for which the transactions are carried out using mobile phones, dependency on mobile phones for placing orders, the time frame for which the respondents are using mobile phones for undertaking financial transactions, and whether they use mobile apps for undertaking financial transactions. After analyzing all the aspects of respondents' mobile usage, it was found that the usage pattern differs significantly among various income groups.

It was important to know how comfortable the respondents were towards using mobile phones for undertaking financial transactions. In order to know the impact of telecom on e-commerce, it is important to study how long people are using mobile applications for making payments. It was found that Most of the mobile users are using mobile phones for e-commerce transactions for less than 5 years.

With the increasing number of mobile transactions, it becomes important to check the security of confidential data and safety of financial information of the users. It is also important to check whether the mobile users really believe in various safety measures taken by companies to make the transaction safe. From the analysis, it was found that most mobile phone users consider mobile transactions safe.

CHAPTER 5

FINDINGS, RECOMMENDATIONS AND CONCLUSION

CONTENTS OF THE CHAPTER

5.1. Summary of the report

This descriptive research highlights the impact of growth in telecom sector on e-commerce business. The acceptance of Mobile Apps and Android technology increased the number of online and mobile transactions. This research highlights the evolution of telecom sector in India, the growth of e-commerce business in India and details the pattern of mobile usage among mobile users in India, restricting the scope to Pune City.

The basic study was done by gathering information from earlier research work in the similar area of study. Considering the population using smart phones working on Android based platforms, the number is more than 1000 million at the end of Oct, 2015 (TELECOM REGULATORY AUTHORITY OF INDIA, 2016). N.K. Kathuri & Pals, D.A. suggested a sample size of 384 was appropriate for population over 1, 00,000 to ensure sufficient power for the analysis. (Kathuri, 1993)

The data collection was done by meeting the respondents at various places across Pune City. This includes the college premises, shopping malls, bus stops and multiplexes.

The data was analyzed by using Excel 2007 and IBM SPSS Ver. 21. The variables were defined and were measured by appropriate scales. The reliability and Internal consistency was checked by Cronbach's Alpha. The frequency count, the descriptive statistics such as Measures of Central Tendency and the Chi Square test were used to test the Hypothesis.

The results were tested statistically. The hypotheses were tested using chi-square test, the frequency counts and the measures of central tendency, including the median and mode. From the analysis it was found that the primary data collection tool was designed with correct measuring scales. The data was found to be consistent and the questionnaire scales to be highly reliable (Cronbach's Alpha = 0.957). The data collected through questionnaire survey was found to be normally distributed making it convenient to test the hypothesis with the statistical tests.

5.2. Findings

1. Demographic analysis was done to understand the composition of sample considered for research. The demographic analysis was done on the basis of Gender, Age, Income level, Occupation and Number of Smart phone users in the family.

2. It was found that 75% of respondents are Male and 25% are Female. Maximum responses were from age group 25-35 followed by age groups 35-45, and 18-25 respectively. This is because; most of the smart phone users belong to these age groups.

3. Most of the responses come from people who are engaged in service, followed by students then by business class and others. The composition of Indian population also denotes the similar trend, where maximum population belongs to Service class, followed by students and lastly by businessmen.

4. Maximum response (45.9%) comes from the respondents having income below Rs.20,000/- per month. Since most of the responses come from respondents who are in service and the age group 25-35, it is also observed at the same time that most of these respondents are in the initial phase of their professional life and hence, most of them have income below Rs.20,000/- per month.

5. 93% of the respondents' family members use smart phones. From this it is clear that most of the respondents were well aware about the mobile commerce benefits.

6. There exists difference between the usages of Mobile phones for Transactions because of Safety among various income groups.

7. There exists significant difference between Usage of Mobile phones for Transactions in spite of all the safety precautions taken by the telecom companies among various income groups.

8. It was found that there exists difference between the usages of Mobile phones for Utility bills payments among various income groups.

9. On one hand, respondents from lower income groups did not prefer online utility bill payments, on the other hand, respondents from higher income groups preferred to pay utility bills using mobile applications.

10. From the analysis it was found that the respondents depend upon mobile apps for ordering the product.

11. They do not generally re-confirm the order with the customer care. This shows that slowly and gradually, mobile users have started believing the process of ordering though they still do not believe the safety of such transactions.

12. The frequency of mobile purchase transactions was studied. Most of the respondents use mobiles for purchasing occasionally. This may include utility bill payments also.

13. Though there was difference in the scores of frequency of mobile transactions among different income groups, the difference is not statistically significant.

14. The intensity of usage of mobile phones for undertaking purchase transaction among different income groups was found to be significantly different. Considering all these results, enough evidence was available to accept the Alternate Hypothesis that there is significant difference in Mobile usage pattern of among various income groups.

15. The frequency distribution and the percentages of respondents' usage of mobile phones for undertaking financial transactions was used to test the hypothesis that Most of the mobile users are using mobile phones for e-commerce transactions for less than 5 years.

16. Since the data was a nominal data, no statistical test could be used to test the hypothesis. 63.2% of the respondents were found using mobile phones for

transactions for less than 5 years. Hence, the Null Hypothesis that Most of the mobile users are using mobile phones for e-commerce transactions for less than 5 years was proved to be correct.

17. From the analysis it was found that people enter into transaction because of various other benefits like ease in access of variety of products, home delivery, discounts in prices, etc. while they do not really bother much to think about the safety in the transaction.

18. People today take safety as a part of successful transaction. Hence, the Null Hypothesis that most mobile phone users consider mobile transactions safe was proved to be correct.

5.3. Overall contribution

This findings of this research contributes to the fact that people have slowly started accepting mobile transactions as one of the ways of payment. Mobile Applications are becoming common and the people prefer to buy products using mobile apps since they get additional benefits too. Sale through mobile apps makes it easy for the sellers to reach consumer directly and thus get rid of additional distribution cost. This research has also found out that people have shifted to mobile purchasing from traditional purchasing because of various benefits. This has not only increased the ease of access to products and services but has also contributed to increase in e-commerce activity as a whole. Mobile commerce has proved to be a boon to ecommerce.

5.4. Suggestions and Recommendations:

1. The findings from the research are remarkable and depict how the trend of online purchasing is changing to mobile purchasing. People are becoming more and more comfortable with respect to mobile commerce.

2. At the same time, the demographic composition of India also suits the mobile commerce industry. Since more than 60% of population of India is between the age group of 25 to 45, the research was mainly focused on the same age groups.

3. This research also includes the responses from the age group 18-25 which either influences the buying decisions or they will be soon buying products and services soon using mobile phones.

4. From the findings, the researcher suggests that companies should now look towards Mobile Application as one of the distribution channels. The commissions and margins that a company offers to their regular Distribution network can be diversified and a new option of Sales through Mobile Apps can be leveraged out.

5. Investing into mobile application as a part of Distribution channel can become a profitable way of dealing with the customers since it will also help in Customer interaction and participation in the process of buying. At the same time, the applications shall remain forever and shall not incur recurring expenses.

6. Since most of the mobile users are from the age groups 25-45, special discount schemes can be designed for customers in this age group to penetrate more into the market.

7. The maximum out of the total Indian population belongs to service class. The response also shows the similar trend. Hence, different schemes can be designed to suit the products according to the profession.

8. From the research we have found that most of the respondent belong to income group below Rs.20,000/- per month. It is observed that most of the people use mobile phones between range Rs.9,000/- to 16,000/-. All the mobile phone manufacturers offer some model of their phones within this price range. Hence, it is suggested that when any mobile App is developed to boost the sales through mobile apps, the app should be developed in such a way that it suits the hardware configuration of mobile phones available in this price range.

9. A family App can also be developed, or a friends plan can be developed and offered to the users since it is observed that almost all the family members use smart phones and thus become prospective customers of the business.

10. The safety of transaction is regarded very high by the mobile phone users. Safety of the transaction can be ensured if the purchases are made through the Authentic Application developed by seller and proper security measures are taken while development of the App.

11. In order to increase the frequency of use of Mobile Apps, special schemes can be introduced for regular use of the App. Such schemes may include Discounts in utility bill payments or Cash Backs or Discount coupons etc.

5.5. Limitations

Undertaking a research project is always a time consuming and tedious work. This research work also had challenges on every step. The limitations of this research were some factors which were not in the control of the researcher. Some factors including shortcoming of the researcher, some challenging conditions, and some other influences that were not in the control of researcher formed the limitations of this research. All of these factors directly or indirectly influenced the researcher by putting restrictions on methodology and thus the findings and conclusion.

1. **Language Difference:** There researcher faced the biggest challenge of conversing with local people since the researcher was not very conversant with local language. This led to loss of response. The researcher approached more than 1500 respondents, but due to the gap in communication because of language difference, it was difficult to convert a potential respondent into actual respondent.

2. **Access to the respondents:** It was difficult to meet the potential respondents,

though it was very easy to reach to them. The data was collected at the college premises, shopping malls, bus stops and multiplexes. Here, though there were lot of potential respondents available, it was difficult to hold them back for giving their response to the survey. At the same time, at some places there were some other researchers doing their survey and hence, the potential respondents were also divided.

3. **Reluctance from respondents:** The respondents were reluctant to provide their response. Most of the potential respondents did not give their response considering that their contact information will be used for marketing purpose. Even though this criterion was not a compulsory field in the survey, the respondents were still reluctant, leading to the loss of response.

4. **Limited Time:** Every research retains its validity if completed within a time limit. This research also faced a limitation of time. Entire planning of research was done so as to complete the data collection as well as report writing within a specified time limit. This also influenced the sampling decisions.

5. **Scope of the study:** This study was conducted in Pune City only. This study is conducted on the basis of responses received from 416 respondents from Pune City. This may become a limitation to study since Pune is considered a Metropolitan city. If the same study is conducted in some small town, the results may differ.

5.6. Future Research Directions

The limitations of this research can become the foundation for future research. If similar study is conducted at various different places, a better macro-economic view can be expressed which can become the basis for future developments in the sector. A separate research focused on various mobile apps (Applications) can be done with an objective to find out which applications have remarkably changed the way how products and services are sold and purchased.

1. The state wise distribution of mobile apps in India should be taken in to consideration as a topic for the future studies on e-commerce.

2. As the current study signifies, India is a growing country in the field of e-commerce. Raising number of mobile apps, and its impacts on the life of Indian citizens should be studied state wise. Huge demographic varieties as well as outstanding level of demand (Increasing Daily) make the study useful to understand more about the trend of future demands.

3. The limitations of this research can become the foundation for future research. If similar study is conducted at various different places, a better macro-economic view can be expressed which can become the basis for future developments in the sector.

4. A separate research focused on various mobile apps (Applications) can be done with an objective to find out which applications have remarkably changed the way how products and services are sold and purchased.

5. Technical prospective of e-commerce related applications is the other issue which can be taken in to consideration for the future studies.

6. As far as security and safety is known as the main concern of the consumers, a huge study over the level of security and safety of the apps needs to be conducted. This study can be useful for the software developers as well as company managers.

7. Share of e-commerce transactions out of GDP in India needs to be studied. As we know, E-commerce transactions are low cost transactions (By reducing involvement of human factors) and there for their contribution towards total GDP of country or total transaction made in the country can be a meaningful macro level information .

5.7. Conclusion

1. Mobile applications have been quickly changing the way business associations deliver their services to their customers and how customers can interact with their service providers in order to fulfil their needs. With the fast development of mobile phones, the mobile services become a promising alternative. The increased prevalence of mobile phones provides exciting opportunities for the development of e-commerce. A mobile device is used to initiate, authorize and affirm an exchange of money related value in return for products and enterprises. Mobile commerce is a characteristic successor to electronic commerce. The ability to pay electronically coupled with a website is the engine behind electronic commerce. Mobile commerce has proved to be a shelter to ecommerce and will increase itself with different developments in mobile technology.

2. .0With the rapid growth of mobile phones, the mobile services become a promising alternative. The increased prevalence of mobile phones provides exciting opportunities for the growth of e-commerce.

3. A mobile device is used to initiate, authorize and confirm an exchange of financial value in return for goods and services.

4. Mobile commerce is a natural successor to electronic commerce. The capability to pay electronically coupled with a website is the engine behind electronic commerce.

5. Mobile commerce has proved to be a boon to ecommerce and will multiply itself with various developments in mobile technology.

6. Nowadays, E-Commerce and telecommunication are tightly attached to each other. In the previous times internet was not relied of telecommunication. Rapid boom and advancement of telecommunication sector has made these two concepts in a very meaningful co relation with each other. The “JIO” experience (Recently) in India signifies that telecommunication companies have no choice other than

making themselves adopted with the e-commerce business.

7. India as a highly populated nation has to improve the required infrastructure in such a way that accessibility of different states to e-business (any of its models) would be accelerated. Here private section as well as state and central government should plan for a future development of infrastructure so that the user volume increases and more business would be encouraged to enter to this area.

ANNEXURE

Bibliography

Books

1. Anton. (2006). *Customer Relationship Management: Making Hard Decisions with Soft* .

2. Bradley, N. *Marketing Research Tools and techniques.* Manchester: Manchester Press.(2005). *Business and Economy* .

3. chandler-Prpeinjak, J. (2010). *Modeling Conversion In Online Advertising.* Montana: The University of Montana.

4. Chatterjee, P. (2005). advances in Costumer Research Changing Banner As Executions .

5. Chaturvedi, A. K. (2005). A new study about E-commerce.

6. Esen, R. G. (2007). *Online Marketing a customer-led approach.* Oxfrd: OUP Oxford ISBN 019926582.

7. Frost, J. S. (2013). *E-Marketing.* Mumbai: Prentice Hall ISBN-10-0132953447.

8. Johnson, Z. A. (2003). *Customer relationship management: an explication of its domain and avenues for further inquiry.*

9. Kenna, M. (1991). *Relationship marketing, successful strategies of age of customer.* New Yourk .

10. Khan, S. A. (2013). *The aspect of Service Performance and Costumer Satisfaction In telecom Sectors.* Ney York: Mc Graw Hills .

11. Khemthong, S. (2007). *adoption and deffusion of internet and web technology in hotels marketing.* victorya university.

12. Kienen, B. (2000). *Small Business Solutions- E-commerce.* Washington.

13. mark Noriss, S. W. *E-Business Essentials.* John Wiley and Sons Ltd.

14. Mousavi, S. S. (2012). *Effective Elements on E-Marketing Strategy in Tourism Industry.* Trier University.

15. Namakumari, R. a. *marketing Management.* Dlhi: Oxford Universtity Press .

16. P.T.Joseph. (2012). *E-commerce and Indian Prospective.* New Delhi: Learning Private Limited.

17. Peter C. Verhoef, K. N. (2009). *Costumer Experience Creation : Determinants, Dynamics and Management Strategies.*

18. Peterkeen, C. B. *Electronic Commerce Relationships.* New Jersey: Uppper saddle river.

19. *Pyramid Research.* (2010). Cambridge M.A Harward Business Scoold Press.

20. Sundram, D. a. (2004). *Indian Economy.* New Delhi: Vikas Publication.

21. Tucker, A. G. (2011). *Standardization, Standards and Online Advertising.*

22. Walters, S. Y. (2003). *The New Telephony-Technology, Convergence , Industry Collision .*

23. Prentice Hall.(2002). *World Telecomunication Developement Report.* Cambridge Blackwell.

24. Yilmaz, A. R. (2010). *Effects of Customer relationship management on Customer retention, in cellular industry.* Pakistan.

Articles

1. Ahmed, T. T. (2011). Empirical-Based Model for Examine E-Intention in Electronic Commerce at Developing Countriespurchasing . *International Journal of Academic Research* .

2. Ahmed, Jubayer and Rouf, Dr. Md. Abdur (2015).Controlled, Uncontrolled Communication, Brand Name and Brand Attitude: A Relational Study on Cellular Telecom Sector of Bangladesh. American Journal of Trade and Policy, Vol. 1, No. 3, pp. 102-108.

3. Angelova, B. (2011). European Costumer Satisfaction With Service Quality Using ACSI Model. *International Journal of Academic Research in Business and Sicial Scienses* .

4. Ajit Kambil, (1995). Electronic Commerce: Implications of the Internet for Business Practice and Strategy. Deloitte Services LP, ssrn.

5. Assopolous, A. (2000). Customer satisfaction cues to Support Market segmentation and explain switching behaviour. *Journal Of business Research* .

6. Biswaji, S. B. (2011). A Study of Open Innovation in Telecommunication Services. *W.P. no.Ec-11-09* .

7. Duan L David, J. P. (1979). Service Characteristics, Consumer Research and the Classification of Retail Services. *Journal of Retail* .

8. F.Buttle. (2009). *Customer Relationship Management: Concepts and Technologies.* Oxford: Elsevier Butterwoth Heinemann.

9. Francisco Reyes (2004). Electronic Commerce: Recent Legal Developments in Colombia. University of Fribourg, Universidad Javeriana. Ssrn.

10. Islam, S. S. (2005). Exploring the Determinants of E-commerce Usage in the hotel Industry in Thailand; An Empirical Study. *Information Technology and tourism* .

11. Lim, Y. M. (2011). The Effectiveness of online advertising in purchase decision; Liking, recall and click. *Australian Journal of basic and applied sciense* .

12. Makkar, Dr. Urvashi(2015). Achieving Customer Satisfaction through Total Quality Management (TQM): A Case Study of Telecom Sector. Ssrn.

13. M, Dr. Urvashi and K, Harinder. (2012).An Empirical Study on Customer Satisfaction Index in Mobile Telecom Sector in India: With Special Reference to Rural Market. International Journal of Arts & Sciences (IJAS). Ssrn.

14. Paul A. Pavlou (2003). Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with the Technology Acceptance Model. *International Journal of Electronic Commerce , 59, (4), 69-103.*

15. Peter Swire (2003). Trust wrap: The Importance of Legal Rules to Electronic Commerce and Internet Privacy, Georgia Institute of Technology - Schaller College of Business, *Hastings Law Journal, Vol. 54.*

16. Prachalias, A. P. (2009). The capacity of Global Telecom companies to maximize the efficiency of the factors of Productivity. *Journal of Research*.

17. Reddy, J. S. (2003). Impact Of E-Commerce on Marketting. *Indian Journal Of Marketting* .

18. U. Majmudar and G. Prabhu. (2012). Electronic Commerce Business Models: A Conceptual Framework Indian Institute of Management (IIMB), Bangalore.

Web sits

1. www.CCSe Journal Online
2. www.cci.in
3. www.ibef.org
4. www.ccsu.edu
5. www.ifi.uzh.ch
6. www.parul.ac.in
7. www.ijsrp.org
8. www.jiarm.com
9. www.ndsap.gov.in . (n.d.).
10. www.trai.com. (n.d.).
11. www.ssrn.com

Questionnaire

''Study of Impact of Telecom Sector on E-Commerce Business''

Dear Respondent,

The following questioner aims to collect information for my research project on study of impact of telecom sector on E-commerce business. I seek your co-operation and support in providing the information. I ensure that the information will be used strictly for academic purpose.

Thanking you

Maryamdokht Tarbiyat

Section I – Demographic Information

1. Gender : a) Male b) Female
2. Age : a) 18-25 b) 26-35 c) 36 - 45 d) 46 and above
3. Occupation:
    a. Service
    b. Business
    c. Student
    d. Retired
    e. Others
4. Monthly Household Income (Rs/per month)
    a. Below 20000
    b. 20001 to 40000
    c. 40001 to 60000
    d. 60001 and above
5. Since how long you are using mobile phone
    a. < 5 Years
    b. > 5 Years

c. 10 Years and above

6. How many of your family members have mobile phone
    a. None
    b. 1 Person
    c. 2 People or more
    d. All
7. What do you use your mobile phone for? (Tick whichever applicable)
    a. Communication (Calls and SMS)
    b. Internet Surfing (Emails, Whatsapp, Google search, etc)
    c. Internet Banking
    d. Mobile Banking
    e. Online purchasing
    f. Any other

8. I connect my phone to internet using
    a. Wi-fi Internet
    b. 2G
    c. 3G
    d. 4G

Section II – Mobile Commerce Usage

9. I use mobile phones for
    a. Purchasing Grocery
    b. Purchasing Durable goods
    c. Using financial Services
    d. Paying utility bills
    e. Booking movie tickets
    f. Paying for Travel and tourism
    g. Others: Please specify _____

10. Please tick the appropriate column

Sr. No	Statements	1 = Strongly Disagree	2 - Disagree	3 - Neutral	4 - Agree	5 = Strongly agree
1	Mobile Transactions are easy to use.					
2	The use of mobile services is economical.					
3	Mobile commerce has brought Easy access to information					
4	I prefer Mobile transactions because they are safe.					
5	The use of mobile services increases my ability to control my financial matters myself.					
6	It is risky to use mobile for transactions as chances of battery run out or loss of connection is high.					
7	Mobile transactions do not offer any prominent advantages over traditional purchasing					
8	Inspite of various safety precautions, I do not prefer to undertake financial transactions on mobile					
9	I generally use mobile phone for paying utility bills (such as telephone recharges, internet, etc)					
10	I have my own reservations regarding the websites for undertaking financial transactions through mobile phones					
11	Mobile transactions were always safe, even 10 years ago.					
12	It is easy to find the required product or service on mobile phone					
13	Mobile apps make it easy and safe to transact using mobile phones					
14	Mobile apps are convenient because it also keeps record of my past transactions					

Sr. No	Statements	1 = Strongly Disagree	2 - Disagree	3 - Neutral	4 - Agree	5 = Strongly agree
15	I do not depend on mobile app for ordering. I confirm the order by calling customer care executive or by visiting a nearby store.					

11. Since how long you are using mobile phones for transactions:
    a. < 5 Years
    b. > 5 Years
    c. 10 Years and above
12. Frequency of your purchase on mobile (including paying utility bills)?
    a. Almost daily
    b. More than once in a week
    c. Once in a week
    d. Occasionally
    e. Never
13. Have you ever ordered product or service using mobile App?
    a. Yes
    b. No
14. If yes, was the product or service delivered to you upto your satisfaction?
    a. Yes
    b. No
15. How likely is you use mobile app for purchasing product or service?

1	2	3	4	5
Definitely	Probably	May or may not	Probably not	Definitely not

16. Tick the appropriate column

Sr. No	Statements	1 = Strongly Disagree	2 - Disagree	3 - Neutral	4 - Agree	5 = Strongly agree
1	Online shopping has reduces my search cost in finding the product					
2	Online shopping has reduce my time cost in getting the product					
3	Online shopping has save my energy in searching and getting the product					
4	Online purchases the product offer have reasonable price					
5	Online shopping the product offer gives value for money					
6	The product offered on online shopping gives better services					

Thanks for your valuable feedback